Infoteca's E-Journal

An Electronic Compilation of Scientific and Cultural Information by
Sistema de Infotecas Centrales, Universidad Autónoma de Coahuila

CONTENTS

Demographic Boom and Bust

Hear that? It's the echo of a boom ending.

A new national report projecting the size of high school graduating classes through 2022 finds that the rapid, sustained growth of graduates that began in the early 1990s ends this year, in 2007-8. A long-anticipated period of moderate declines in the number of graduates — and traditional-aged college applicants — is soon set to begin, which could increase competition among colleges and intensify financial pressures on tuition-dependent institutions.

"The second baby boom, if you will, it has come to an end this year," said David A. Longanecker, president of the Western Interstate Commission for Higher Education (WICHE), which on Wednesday released its seventh edition of *Knocking at the College Door.*

But the report also projects enrollment patterns that are distinctly regional and, in some cases, state-specific (individual state profiles are available online). Generally speaking, the report projects expansion in the numbers of high school graduates in the South and West, drops in the Northeast and Midwest, and, nationally, explosive growth among non-white graduates, especially Hispanics, as the number of white youth falls.

"It really ups the ante for states on two fronts, because for some states they're going to face a declining high school graduate population which means that if they're going to have a more educated population, they're going to have to reach out to adult learners much more than they have," said Travis Reindl, program director for Jobs for the Future. "And then for other states, they're going to see serious growth. They have to increase their K-12 capacity, and figure out how they can accommodate [students] when they get to college."

"And for all the states, you're seeing growth in the groups, particularly students of color, that historically we haven't done a very good job of serving," Reindl added.

"Any way you cut it, the states have their work cut out for them."

On a **national level**, the number of public high school graduates is projected to peak this year at just over 3 million before beginning a gradual decline through 2013-14 — when numbers are expected to begin climbing back to peak levels by 2017-18. The anticipated average annual rate of decline from 2007-8 through 2013-14 is about 0.7 percent.

"After 2007-08 overall production of high school graduates will become much more stable for the foreseeable future than it was during the expansion period," the report states, "when it was growing by leaps and bounds."

The Northeast and Midwest will be bracing for substantial declines. Under the projections, the **Northeast** will experience declines from this year's peak through the end of the projected period, in 2021-22, with 1 percent average drops per year. The total percentage declines in high school graduates by 2021-22 range from 2.6 percent in Maine to 22.7 percent in Vermont.

Meanwhile, in the **Midwest**, the number of high school graduates is expected to fall by about 8 percent — 60,000 students — by 2014-15. ("Thereafter," the report states, "the number of graduates is projected to fluctuate.") Michigan will see the most precipitous declines, at 13.2 percent among public school graduates by 2015.

In contrast, in the **South**, robust and rapid growth is expected. From 2004-5 to 2021-22, the number of high school graduates is projected to increase by 210,000 — about a 20 percent increase. Florida, Georgia, North Carolina and Texas account for most of the projected expansion, with the percentage of public high school graduates expected to rise by 35.5 percent in Florida, 40.9 percent in Georgia, 30.7 percent in North Carolina and 40.1 percent in Texas. Unlike in the rest of the country, it's unclear, the report says, whether those four states will peak at a certain point: "[R]ather, they may undergo a consistent expansion in high school graduate numbers, with a single year or two during which the growth pattern is momentarily disrupted."

And numbers of high school graduates in the **West**, after peaking next year, in 2008-9, will slowly decline by 2 percent by 2014-15 before rising.

Two Western states in particular — Arizona and Nevada — are expected to see the size of their high school graduation classes almost double between 2004-5 and 2021-22. Other rapidly growing Western states include Colorado (29.3 percent), Idaho (39.1 percent) and Utah (42.4 percent).

Much of the expansion is fueled by growth in minority students, due largely to varying birth rates among different racial groups as well as immigration. Between 2004-5 and 2014-15, the number of Hispanic public high school graduates is expected to rise by 54 percent, Asians by 32 percent, American Indians by 7 percent, and blacks by 3 percent (WICHE's Longanecker explained that the African-American population, which increased through this year, will now start to decline).

Under the projections, the number of white graduates would fall by 11 percent. The West is projected to have its first "majority-minority" graduating class in 2010, and the South in 2017.

Panelists at an event marking the release of the report in Washington Wednesday focused on a wide range of questions necessitated by different fortunes facing different regions of the country. In the Northeast and Midwest, for instance, "How do you keep a critical mass in a school as populations are declining?" Longanecker asked. (He added that higher education has historically reached out to non-traditional students in times of population declines.) On the other hand, how can states like Arizona and Nevada, faced with dramatic expected expansion, cope with the demand?

But the common challenge addressed was the need to better serve minority students. One can honestly say that two- and four-year colleges have made progress on access in terms of admitting more students from diverse backgrounds, said Janis Somerville, director of the National Association of System Heads.

"The problem is most of us have been reporting more — 'We admitted 40 more African-Americans this year,' " she said, offering a typical example.

"The problem is if you're in any number of states you can be admitting 40 more and still be losing ground."

— Elizabeth Redden

The original story and user comments can be viewed online at
http://insidehighered.com/news/2008/03/20/projections.

Campus Violence, Viewed From Afar

The message came from all corners after the Virginia Tech and Northern Illinois University attacks. It's timely again this month after the violent deaths of students in separate incidents near the campuses of Auburn University, the University of Arkansas at Fayetteville and the University of North Carolina at Chapel Hill.

"There is a fear that colleges and universities are a target," said Jonathan Kassa, executive director of the nonprofit group Security on Campus. "It's very important to be aware that a college community is like any other — it isn't a protected oasis."

Recently released federal data show a 9 percent decline in violent crimes and a 30 percent drop in property crimes at four-year institutions between 1994 and 2004. Despite those numbers, which are now several years old, some have pointed to an increase in overall concern about campus safety.

At North Carolina, where student body president Eve Carson was shot to death two weeks ago near campus, students are paying tribute and talking about how to prevent future tragedies. *The Daily Tar Heel*, Chapel Hill's student newspaper, asks as its ongoing poll question: "How safe do you feel on and around the UNC campus?" Roughly 20 percent of those who responded reported feeling either "not safe" or "very unsafe," while more than 55 percent said they feel "safe" or "very safe."

A suspect in Carson's murder has also been charged with the January killing of a Duke University graduate student. Reports that the areas around the campuses have been targeted supports conventional wisdom that students, assumed to be carrying cash, are likely to be victims.

Street crime around North Carolina State University, coupled with campus violence elsewhere, have led to increased fear on campus and should be a wakeup call to students, a columnist writes in N.C. State's student newspaper. Students across the country are urging administrators to tell them how they're safeguarding their campuses.

At Auburn, where a female student was found fatally shot on a highway, and at Arkansas, where yet another undergraduate woman was killed in her off-campus apartment, students are asking many of the same safety questions. University of Southern California also faces decisions about how to address students following a pair of armed robberies in academic buildings.

On those campuses, task force recommendations and police reports help guide the conversation. But what about at colleges that view these cases from afar?

There are, of course, online discussion threads. Terrence C. Kemp, a student at Savannah State University, created a Facebook group, "Stop the Campus Violence ... Enough in Enough," as a way to express his frustration with the pattern of shootings. On the page he writes: "It's already hard enough to get through college having to worry about classes and how I'm going to pay for this fee and that fee.... Now as students we gotta worry about not getting killed."

Kemp said in an e-mail that even with the campus police presence at Savannah State, "it just doesn't feel like it's enough." He said the university seems to ratchet up security after a major tragedy on another campus, but that the increased presence doesn't last.

Kevin Letourneau, a Florida Community College at Jacksonville student and member of the Florida governor's campus safety task force, said from visiting classrooms at several of the system's colleges, he noticed that after a high-profile campus attack, faculty members will often open class with a discussion of campus violence.

From his observations, students' perceptions of campus safety seem to vary greatly.

"I feel safe," Letourneau said. "But I'm still concerned. Am I worried, what if this happens to me? Those thoughts are on my mind and on students' minds in general. Do they feel this sort of thing wouldn't happen? I don't think so."

Some students, he added, have a false sense of security. Colleges are promoting their text messaging alert services, but Letourneau said in such a large system, that method of communicating has its holes.

Todd Sigler, director of the department of public safety at Southern Illinois University at Carbondale, said that since the killings at Virginia Tech and Northern Illinois, his office is receiving more reports of questionable behavior on campus. That's likely a product of more people paying attention to perceived threats or potentially dangerous situations, he said, rather than an indication that the actual number of incidents is rising.

Sigler, who serves on the Illinois governor's campus security task force, said his office has received more requests recently to speak about how to respond to situations where someone on campus is showing violent tendencies.

Cynthia Brown, an assistant professor of criminology at Western Carolina University and a member of UNC's campus safety task force, said students' perceptions of safety seem to have been more damaged by the classroom killings on other campuses than from the individual attacks at other colleges. That's likely explained, she said, by the number of victims in the shooting sprees, and the media coverage the incidents received.

The reality for many campuses is that it's often difficult to get an accurate reading on safety perceptions. Carson's death came just prior to spring break at nearby Duke. Aaron Graves, the university's associate vice president for campus safety and security, said that "while there's been an outpouring of sympathy and concern for safety in general," because the majority of people were away in the immediate aftermath, "it's somewhat difficult to gauge the overall student/parent response at this point as being increased."

Added Kassa: "When people talk about trends, there's not enough data to definitely say people feel more unsafe. The ultimate trend is that people are more aware and are asking more questions."

Kassa said his concern is that while shootings often capture media attention, day-to-day crime on campus — sexual assaults, for instance — often go unreported. (The *San Jose Mercury News* wrote earlier this week about the response to an alleged rape at a Northern California college.)

That's the kind of campus safety issue most likely to be brought up by a parent or student who contacts N.C. State's Women's Center, according to director Shannon L. Johnson. She said after Carson's murder and robberies near or on her campus, several people called about self-defense workshops.

The safety concerns aren't just coming from people who live and work near campus. Jim Boyle, president of the advocacy group College Parents of America, said an online poll conducted by his group each spring showed a spike in parent concern about campus safety from 2006 to 2007. Last year's data came in before Virginia Tech, so Boyle said he expects the 2008 results to show even more concern on the part of parents.

Boyle said he heard from more parents after the Northern Illinois rampage than he did after the two most recent attacks. People who typically contact his group have specific safety concerns, as opposed to comments on the news.

Sigler, the Southern Illinois safety director, said his top concern is what happens once the violent incidents fade into distance memory.

"Can you can get people to stay vigilant and on guard in a period of extended non-emergency?," he asked. "That's the problem we face. When is it paranoia, when is it preparation, when is it lethargy?"

— Elia Powers

The original story and user comments can be viewed online at http://insidehighered.com/news/2008/03/20/violence.

Learning to Teach Tech-Savvy Students

By Shari Dinkins

In the last decade, I've noticed that traditional college students seem more dependent on technology, less comfortable working with others, less able to weather criticism, and unwilling to persist when their first attempt met with failure. With lightning-fast technology at their fingertips, they accept the first "hit" of a global search engine as the last word on a subject. When asked to rewrite material or review lessons, this group of multi-taskers seems frustrated and impatient.

In my writing courses, students often turned in what looked like a freewrite as a final draft on crucial composition assignments. Although I had a sense that the "authority of print" often convinced students that a properly formatted paper was well written, I still couldn't fathom the mindset that drove my students to work in this fashion.

Outside of class, my young students' lives seemed to be a whirl of online relationships, virtual "lives," and constant reliance on the same two or three friends through instant messaging, text messaging, e-mail, and phone calls; "keyboard bravery," combined with a lack of modesty produced shocking revelations on social communication sites like MySpace and FaceBook. I felt confused-and yes, old.

In 2006, Judy Twenge's book, *Generation Me*, helped me start to understand. I started to see my students as self-important rather than self-absorbed. I realized that their overuse of technology and isolationism was a product of their generation — not an indictment of my teaching methods or my discipline. When I read that this generation suffers from anxiety, depression, and loneliness, I started to develop some empathy.

The "Study of Undergraduate Students and Information Technology," released in 2007 by Educause, also gave me insight as to how many of my younger students see the world. Nine times as many students carry "smart" cell phones now as they did in 2005. Younger people spend approximately 18 hours a week online. Of the 1.3 million undergraduates polled, nearly all said that a moderate use of technology helped them succeed in college. At the same time, many wrote in comments indicating that face-time with instructors and class time with other students was critical to their success in college. This was heartening news. Books at my college library like Lankshear and Snyder's *Teachers and Techno-Literacy* and DiSessa's *Changing Minds: Computers, Learning and Literacy* helped me start to pin down the abstract idea of incorporating technology into the classroom. In the end, I had to agree with students of the Educause study; when used appropriately and in moderation, technology can help us teach. And it can help our "wired" students learn.

As an instructor, I have much to learn. Although I use course management software (like Blackboard) to supplement each course that I teach, rely on discipline-specific software (like MyReadingLab or STELLA) to augment lessons in core classes, occasionally use presentation software (like PowerPoint or Corel Presentations) to help students grasp abstract ideas, and make a point of answering my campus e-mail twice a day, this just scratches the surface.

My faculty mentor grades in paperless fashion. She receives student work through a digital drop box on the course management software, notes the date and time it is received, makes "comments" on the word processed document, saves a copy for herself, and returns it by e-mail to the student. By creating a digital body of work for each student, she can see how a student is progressing — and often grades more aggressively when a student doesn't seem to be taking her original comments to heart.

Other professors use interactive handheld response systems (clickers) like iRespond and Senteo. Still others have students create video games and simulations as part of a class assignment. Wikis, blogs with type and voice, and interactive Web sites are being used to teach, too. Lucky to have a few friends more "wired" than I am, I find that they've developed some strategies to use technology well at the postsecondary level.

First, they attempt to understand their student population. Whether or not they decide to accommodate these characteristics, knowing what shapes their behavior helps them keep from becoming bitter and inflexible. Good reads include: *Generation X Goes to College* by Peter Sacks, *Quarterlife Crisis* by Alexandra Robbins and Abby Wilner, *Midlife Crisis at 30* by Lia Macko and Kerry Rubin, *The*

Ambitious Generation by Barbara Schneider and David Stevenson, *I'm the Teacher, You're the Student,* a narrative by Patrick Allit, and for a more positive view, *Emerging Adulthood* by Jeffrey Jenson Arnett and *Growing up Digital* by Don Tapscott.

In order to combat the GenMe "I know this" response in class, they teach modules and incorporate a progressive number of more and more comprehensive feedback loops so that they are guaranteed that the bulk of the students know the material. They often preface lessons with the statement, "I know you know this, but." This allows the students to save face while guaranteeing that the curriculum is covered. With a focus on the self rather than developing social skills and working with others, many GenMe students may initially resent group work. Building in check points where an instructor sits in with each group can help motivate students and troubleshoot problem areas before a project is due. Simple self-evaluation and team-member evaluation forms (online or in print) assure students that their efforts will be rewarded. Because many are comfortable with reporting systems (such as those to rate products or give feedback online), they may find a confidential critique of another student's performance easy to produce. Posting a rubric which clearly shows that a student is going to be graded not only on the final project, but also on an instructor's observations during check points, their own self-evaluation, and others' evaluations often encourages them to do the work.

The GenMe perceived "pride" and underdeveloped social skills may result in lackluster class discussion; an instructor may feel as though they are prodding and leading-with no real critical response. In some of these cases, technology may help. Many instructors have students post answers to detailed questions on a course management software forum; this can be a springboard to discussion or a more-involved assignment. Having students not only post their own answers, but comment on others' can be a rich source of material — as long as the instructor has warned that the superficial, "Dude, that sucks" response will garner no points. In other cases when there is no obvious use of technology to encourage communication, a simple use of in-class tools may provide some relief.

A colleague of mine hands out sticky notes. After viewing questions on the board (or screen), students are asked to jot down answers on the notes. These are collected by two or three students who then post these on the whiteboard as students in the classroom shout out ideas as to how they might be categorized. At the end of class, this instructor collects these sticky notes onto sheets of paper, makes a few notes in the margins, scans them in and posts them to the course management software so that students can review and use this information in their next assignment.

I post questions and exercises on course management software ahead of time, pass out four or five dry erase pens in class and call on those students to write out answers on the whiteboard. Reluctantly they trudge to the board. As they write, I immediately give them positive feedback and as they turn to go, I encourage them to pass the dry erase pen on to a classmate. This results in some good-natured rivalries. At times, I bring a digital camera to the classroom and take a snapshot of their written work. I later post these online, along with some comments, for later review. It's important that I stay as positive as I can with these comments. Of course, I may need to gently guide students to a right answer, but I need them to feel as if their efforts are not discounted. This use of the whiteboard and posted pictures is tied to an outline of a later assignment; this provides continuity and helps students to see a lesson as integral rather than as busy work. In both of these cases, the students' own handwritten comments are used as a tool for later work. This seems to satisfy the needs of a generation that loves the idea of becoming popular (or even famous) through videos and blogs posted online-and shows them that type is not the only valued form of communication.

Because administrators encourage the use of technology, colleges and universities often offer workshops or classes for faculty to hone their technological skills. Of course, many of these managers don't use the software extensively themselves; therefore, it's smart for professors to investigate what kind of support is available before doing a comprehensive "launch" in all courses. And, of course, don't start this process the year you're being reviewed for tenure; better to work through any difficulties before this crucial year.

If inexperienced, start with one class and then expand as you work the bugs out. Ask trusted mentors how they use technology and take notes as they talk. Later you can find out exactly what forms of technical support exist on your campus for both instructors and students — and most importantly, when they can be reached.

At my college, Teaching and Learning Center staff were able to create a "dummy" account for me so that I could see my course management software as my students saw it. I tried out discipline-specific software and did all of the assignments myself before I made them required work for my students. I asked the book distributor for extra student access codes so that those who had not purchased the textbook new with the software card shrink-wrapped inside could still perform the tasks required for my course.

I did a "test run" a month before the semester started. During the course, I built in periodic class sessions in a computer lab so that I could show students how to use both software packages; this also gave me time to help them when they had difficulties logging in or when their access codes didn't work. Students who claimed to know these tools often found that there was more to learn. True experts used this class time to catch up on work, get ahead on exercises, consult linked resources, do guided research for an upcoming assignment, and check their grades. After having an 80-question final stall on several students in a technical writing course, I realized that no matter how much you've used any software, you should always have a form of back up available. Carrying a printed version of the test would have saved my students from stress when their computers lagged and refused to continue after half their tests were done. If I hadn't wanted to make copies of the printed version, I could have made it into a PDF document and either carried it with me on a thumb drive or linked it to my course management software. I've vowed to remember to consider all options when depending solely on technology.

Most of my mentors say to be selective when posting materials online. For those teaching online or hybrid courses, of course, it's imperative to have all materials available online. For those teaching face-to-face, posting a syllabus, course outline with due dates, reading assignments, quiz and test dates, resources, and a few practice exercises may be the best bet. Detailed information about each major assignment can be posted a few weeks before the assignment is due. But posting every assignment, worksheet, and exercise that the class has worked on (or will work on) may result in an overwhelmed student population that cannot determine what is required and what is supplemental information.

For many professors, answering e-mail takes up far too much time. GenMe students may e-mail simple questions that can easily be answered by consulting the syllabus, course outline, or assignment sheet (which are often posted online). Frustrated professors may find themselves spelling out the same information again and again in e-mail messages. The minute one hits "submit," a response from the same student may come within a minute-this time asking for even more clarification.

Faculty may dread opening up their e-mail program; worse yet, some refuse to answer student e-mail, preferring phone contact or in-person communication. This may result in poor student evaluations — even if the professor performs all of his or her other duties in an exceptional manner. Although this seems unfair, it helps to remember that this "wired" generation is so confident with instant communication that they often devalue traditional avenues of imparting information. That's not to say that we can't help them see the value in lectures or in-class discussion — but knowing that their over-reliance on electronic
communication is a result of their culture rather than a rejection of our teaching methods can help us understand why we need to support this form of communication.

It helps to draw boundaries about what you'll provide by e-mail, but make a commitment to answer each message within a given amount of time. "Establish a regular schedule to answer e-mail just as you do with office hours and stick to it. Daily, twice a day, bi-weekly-whatever your course demands," says John Muller who heads up the multimedia department at Sonoma State University. This not only supports your students; it also convinces administrators and other faculty members that you're a viable, reachable source of information. With student communication, however, I personally don't spell out information that is readily available on our course management software. Instead, I direct students to the site and add that if they have any difficulties finding the information to e-mail me again. I also tell them when I'll be answering my campus e-mail again. Giving them a time frame for future contact reassures them that I am interested in their progress.

One area that seems to frustrate professors, too, is the new "my dog ate my homework" excuses. "My thumb drive won't read," "I can't find where I saved my work," "The computer deleted it," "I couldn't print it
out," and "My printer ran out of ink." Some of my colleagues accommodate these technical difficulties. I

worry that excusing tardiness or late work because of problems with computers might discourage students from troubleshooting problems ahead of time. It may also tell other students in the course that pulling the "technology" card will get them a few hours (or few days) to improve an assignment before turning in final work. Students who do the work on time may start to resent assignments that must be computer-generated; after all, a number of their classmates will get extra time that they didn't receive to rework an assignment. It's a tricky situation.

Of course, in decades past, those of us who typed our first papers on IBM Selectric typewriters knew to keep an extra ribbon on hand or face the consequences. In the last few years, I've finally adopted policies that clearly state that I will not excuse tardiness or extend due dates to accommodate technical problems. Students who gamble on a low ink-jet cartridge or choose to work on an assignment a few minutes before class starts, encounter difficulties, and turn in work late face a penalty. These students complain; however, these same students often never turn in a late assignment again. They've learned that it's important to build in time to troubleshoot the same technology that makes their lives so exciting; this, of course, is the kind of maturity that will help them succeed in other courses and in the workplace. That I can support.

In the end, technology is just a tool. Used in moderation, it can support learning. Used indiscriminately, it can hamper learning. And this tool, like others, requires an investment of time for professors. A great deal of education, preparation, and hands-on experience will make the incorporation of technology in the classroom a valuable addition for students. And although sleek hardware and do-everything software may seem pivotal to the learning experience, it's smart to seek a balance. Face-to-face interaction not only prepares our students for college coursework and the office; it also helps them become important players in our society.

Shari Dinkins is an assistant professor at Illinois Central College.

The original story and user comments can be viewed online at
http://insidehighered.com/views/2008/03/20/dinkins

Scientists show up Michelangelo's faults

· Research predicts stress fractures in David statue
· Medical patients as well as galleries may feel benefit

James Randerson, science correspondent
Wednesday March 19, 2008

Guardian

Michelangelo's David may look relaxed, but he is actually rather stressed - especially around his left thigh, right shin and ankles. A new analysis of the structure predicts where it is most under strain based solely on its shape - and the method may be able to help treat people's physical problems as well as those of statues.

The conclusions match where cracks have begun to appear in the 5.17-metre marble masterpiece and the researchers who developed the technique say it could be used by conservators to predict where a sculpture is likely to deteriorate and so allow pre-emptive repairs. They say it could also be used by doctors to design replacement bone implants such as hips.

"Understanding structural properties of historical and cultural artefacts through computer simulations is often crucial to their preservation," said Prof Vadim Shapiro at the University of Wisconsin-Madison. At present this kind of analysis was expensive, time-consuming and error-prone, he said. "The 'scan and

solve' technology promises to transform the simulation into a simple and fully automated process that can be applied routinely."

The software developed by Shapiro and his colleagues converts a 3D map of an object - for example a statue, a car part, or a replacement hip - into a map of the stresses and strains it will experience when subjected to certain forces. In David's case it is gravity pulling the statue downwards, but other objects will have different forces applied to them.

The ability to do this is not new, but Shapiro's software greatly simplifies the process and eliminates a set of difficult, error-prone calculations. Traditionally computer scientists conduct a "finite element analysis" which involves breaking the object up into a 3D mesh of tiny pieces that approximate the shape. Shapiro's approach allows the analysis to be done directly on the 3D shape data.

"For engineers designing new structures and components, the scan and solve claim to fame is the ability to go directly from scan data to analysis model without any intermediate steps that produce accumulating errors," said Judy Vance at the US National Science Foundation, which funded the work. Prof Igor Tsukanov of Florida International University presented the approach at a conference in Honolulu, Hawaii, yesterday.

In the medical field, Shapiro said, the technique could be used on scans of living bones in patients. "Using models of bones' response to stress, we may be able to plan treatment regimens to minimise potential for fracture, especially in patients that do not fit the norm due to deformity or injury," he said.

It could also suggest the best shape for bone replacements such as hips. Implants sometimes become loose because bone around them changes shape or density under different stresses. The scan and solve approach should help predict these problems. "With the ability to quickly simulate different implants and their placement on a per-patient basis, future difficulties may be averted," said Shapiro.

At present, scan and solve is at the research stage, but Shapiro hopes to develop a commercial version in one to two years.

http://arts.guardian.co.uk/art/news/story/0,,2266407,00.html

Facing the Horrors of Distant Battlefields With a TV and Console

By SETH SCHIESEL

During the Vietnam War major television networks regularly broadcast real-life images of fighting in jungles, cities and swamps. Just as television was becoming this country's dominant mass medium, Americans came to perceive through their screens at least a bit of the confusion and pain of the battlefield.

That's over now. By the Gulf war, television had mostly been reduced to retransmitting officially sanctioned images of precision munition strikes. These days, it is almost impossible to find scenes of actual ground combat on television.

Traditional fictionalized entertainment has hardly filled the gap, which may owe less to Hollywood's depictions of modern war than to the reluctance of modern viewers to see them. After all, television and film audiences continue to flock to re-creations of World War II while reflections of today's wars have fared poorly. (See "Redacted" and "Over There" on FX.)

So it may be simultaneously illuminating and terrifying to realize that an entire postdraft generation of young men has had its perception of war shaped in some measure by video games. Games are perhaps the final mass-entertainment medium that regularly includes portrayals of modern war; gamers may be the last audience ready to consume them.

The military figured this out a long time ago. Since 2002 the Army has developed and distributed a game called America's Army that is explicitly meant as a recruiting tool and which now has more than eight million registered players. Three years ago I joined members of that game's development team on simulated winter maneuvers at Camp Guernsey, Wyo.

Now comes Call of Duty 4: Modern Warfare, the hit combat game developed by Infinity Ward and published by Activision. Since its introduction in November for PCs, the Xbox 360 and the PlayStation 3, the game has sold more than eight million copies (at $50 to $60 each). It won the Game of the Year prize at the annual Interactive Achievement Awards in Las Vegas last month.

In the game, Infinity Ward spins a sufficiently plausible tale about rebels taking over a traditionally secular Middle Eastern country that is near the Persian Gulf, but never named. The radicals find common cause with ultranationalist Russians, and together the two groups end up threatening the United States with nuclear holocaust. Players take on the role of American and British soldiers who must, essentially, save the world.

The single-player version of the game is relatively short; I played through the PC version (on an excellent machine from Nvidia) in one nine-hour sitting. And while the sun-bleached Middle Eastern bazaars and misty wooden hillsides seem realistic enough, it is clear they are meant as part of an entertainment experience, not a documentary. If you are shot a few times, take cover for 15 seconds and you're back in the fray. Be killed by a grenade, and you just reappear at the last checkpoint. As gorgeously rendered as the game is, through all the running, jumping and crawling it seems clear that this is not in any meaningful sense an approximation of real war.

But there is one mission in the game that deserves to be in the pantheon of wartime storytelling, a level that chillingly, almost horrifically, reflects how modern technology has allowed both soldiers and civilians to detach from the reality of taking another human life. It is at once the most realistic scene and the mission that feels most like a video game, but only because for some modern soldiers, war really has come to resemble a video game.

It is called "Death From Above," and in it the player is aboard an AC-130 gunship high above a nighttime battlefield. The screen presents only the black-and-white infrared screen displaying the ghostly images of combatants below. The player's job is to shoot the enemy from on high, to watch the little silhouette images of their bodies fly apart while hearing only the whine of the plane's engines, the whir of machine guns and the exhortations of the fire commander: "We got a runner here! Nail those guys by the building! There's a guy by that car. Light 'em up!"

The most penetrating element of the mission is that it looks and sounds almost exactly like real-life videos that have been posted on YouTube of AC-130 missions in Afghanistan and elsewhere. One of those videos now carries an addendum in its description: "Note: This is not Call of Duty 4!"

As Vince Zampella, Infinity Ward's chief executive, put it: "We certainly based that mission on the real-life YouTube videos people put up because the Internet is really the only place you're going to see those images. You kind of get that feeling like you're playing God, but you realize, 'Hey those are human beings down there.' For these guys a mile over the battlefield looking at a screen, it's just like you're playing a game."

Of course, it's not like that for most soldiers. Sgt. David Lee of the New York Army National Guard knows the difference. A couple of weeks ago Sergeant Lee, 28, sat in uniform at a computer at the gaming parlor Neutral Ground in Midtown Manhattan, playing the multiplayer version of Call of Duty 4 on the Internet. He said he had spent a year on the ground in Iraq, had lost friends in action and had returned home to Manhattan in 2005.

"It's really not like real life at all," he said of the game. "If people are getting their impressions about war from a game, it's just wrong. In real life you realize that once you squeeze that trigger, you are responsible for that bullet until it lands. Here you're just clicking a mouse and running around like Rambo."

But Sergeant Lee added that in the real war zone, war games provided an invaluable outlet.

"That said, sometimes it feels really good to just be able to click the mouse or hit the buttons as a way to relieve stress and not worry about the consequences," he said. "They would sell Xboxes at the PX in Iraq, and we would play Halo 2 or whatever just as a way to escape the horrible reality of being in war. Sometimes we would ignore the simple things like going to sleep, and being able to just get into a game was a great release."

http://www.nytimes.com/2008/03/19/arts/television/19duty.html?_r=1&ref=arts&oref=slogin

Why do we cry during solo shows? An analysis

March 19th, 2008

Midway through a performance of writer-performer Nilaja Sun's **"No Child…"** last week at the Kirk Douglas Theatre in Culver City, I found myself misting up.

That's right: this crusty old critic, who prides himself on that dubious WASP attribute, stoicism, got a little … well … verklempt. Sun's solo play about her experiences as a teaching artist in a troubled New York high school was probing, hilarious, wise, insightful and above all very moving.
It got me to thinking about a number of things – why men never carry tissues, for one. But after daubing my eyes surreptitiously with my shirt cuff (it's easy, guys – pretend to cough, then you've got an excuse to bring your hands to your face), I pondered the deeper issues when the lights came up.
Some of the most affecting and powerful theater I've seen over the last decade has swept over me during one-person shows. The subjects themselves are as diverse as the solar system: an aging transvestite's high-wire narrative that counterbalances horror, bravery, denial and outrageous lying (Doug Wright's "I Am My Own Wife"); harrowing accounts of the plight of Iraqi women (Heather Raffo's "Nine Parts of Desire"); poet Emily Dickinson's lonely but rewarding life of the mind (Julie Harris in "The Belle of Amherst"); the late Spalding Gray's mesmerizing, laser-focused examinations of his private obsessions and demons, which came to assume added poignancy and meaning after his suicide. All of them rewarded me with moments of emotional intensity that will stay with me forever.

There are several reasons, I believe, to explain the dramatic power of the one-person performance.
First and most obvious is our almost instinctive connection with the techniques and traditions of the storyteller. Spinning a tale is the world's oldest theatrical form. It was the best way to keep boredom at bay around the campfire and pass on the particulars of a people's history in the eons before the Greeks thought of formalizing the process. Our susceptibility to the storyteller's powers and tricks – his incantatory skills, his ability to tease and prolong a tale's climax, to surprise us with twists and reverses, to make us feel we're sharing the journey with the tale's characters – is innate, as if imprinted on our DNA.
Another powerful weapon in the solo performer's arsenal is the direct address. All one-person shows break the fourth wall – the actor addresses the audience – so we're immediately pulled into their world in a manner that multi-character plays can't duplicate. This kind of shared knowledge is fundamentally different than soliloquy, which at its heart is a way of revealing inner motivation to advance the plot or provide added insight to character.
Often, we're more than just observers or visitors to the universe of the solo performer; we're intimates, even co-conspirators. The character is likely to unburden his most private thoughts, telling us things that not even his closest friends, family or spouse are privy to. After all, the one-person forum implies that

something exceptional is taking place, or about to, at the point that we're visiting. We're being invited in for a reason, and often it has to do with a seminal moment in the character's life. In "Full Gallop," we meet fashion mogul Diana Vreeland in the midst of her career's biggest crisis, yet her daring and ebullience are undimmed – if anything, she seems emboldened by adversity. In "I Am My Own Wife," a play that explores and exposes many levels of deception and misdirection, our presence seems to compel the play's slippery narrator/central character to eventually (after many false leads and narrative tangents) come clean and tell us the truth behind her amazing survival under the most daunting circumstances. In certain extraordinary instances, our presence compels the character to betray himself or herself – the ultimate intimacy.

The feeling of heightened inclusiveness that solo shows can create leads to a corresponding increase in our emotional investment. We've been given the privilege of entry into that person's world, and the price to be paid is a larger stake in the story's outcome. It's one thing for an actress playing an Iraqi woman who has lost all her children in an aerial bombardment to tell of her unending grief to another character; quite another when she directs those feelings at us. Such moments act as arrows aimed straight at our hearts. And in a darkened theater, with a gifted actor standing center stage and no ambiguity or distraction to soften the message, it's impossible to be unmoved.

You may feel manipulated afterwards – that's a valid point. You might find yourself disagreeing after the fact with the moral message or the tone of a one-person play. But I guarantee you'll be helpless against its emotional probity at the instant it's happening. I don't care what kind of stuff you think you're made of: bring a hankie!

http://artsblog.freedomblogging.com:80/2008/03/19/why-do-we-cry-during-solo-shows-an-analysis/

Mars, Earth And Moon From 'Unique Planetary Nursery'

A study of meteorites suggests that the Earth, the Moon and Mars share a common composition from 'growing up' in a unique planetary nursery in the inner solar system. (Credit: NASA)

ScienceDaily (Mar. 20, 2008) — A study of meteorites suggests that Mars, the Earth and the Moon share a common composition from 'growing up' in a unique planetary nursery in the inner solar system.

The finding could lead to a rethink of how the inner solar system formed.

In the journal Nature the international team of scientists, which includes Professor Alex Halliday from Oxford University's Department of Earth Sciences, report how they analysed 16 meteorites that fell to Earth from Mars. They found that the amounts of neodymium-142 these contain are subtly different from those of objects found in the asteroid belt. This isotopic fingerprint is proof that the chemistry of the inner solar system was different even for elements that are hard to vapourise.

Professor Halliday said: 'The Earth, Moon and Mars appear to have formed in a part of the inner solar system with a ratio of samarium to neodymium that is around 5 per cent more than could be found in the asteroid belt. It is this 'family resemblance' that we see today when we compare oceanic basalts from Earth with Moon rocks and Martian meteorites. Such differences may be the result of the erosion of planetary crusts during formation events, alternatively, this composition arose from the sorting of clouds of partially melted droplets or grains - known as 'chondrules'.'

Earth has a long geological history of recycling the materials that make up its crust and mantle, which could help explain why its composition is different from that of other planetary bodies – it could, for

example, have deeply buried reservoirs of certain elements. However Mars and the Moon are believed to have been nothing like as active during their lifespan: making it much more difficult for any theory involving material recycling to explain why their composition should differ from other planetary bodies and yet have such similarities with the composition of the Earth.

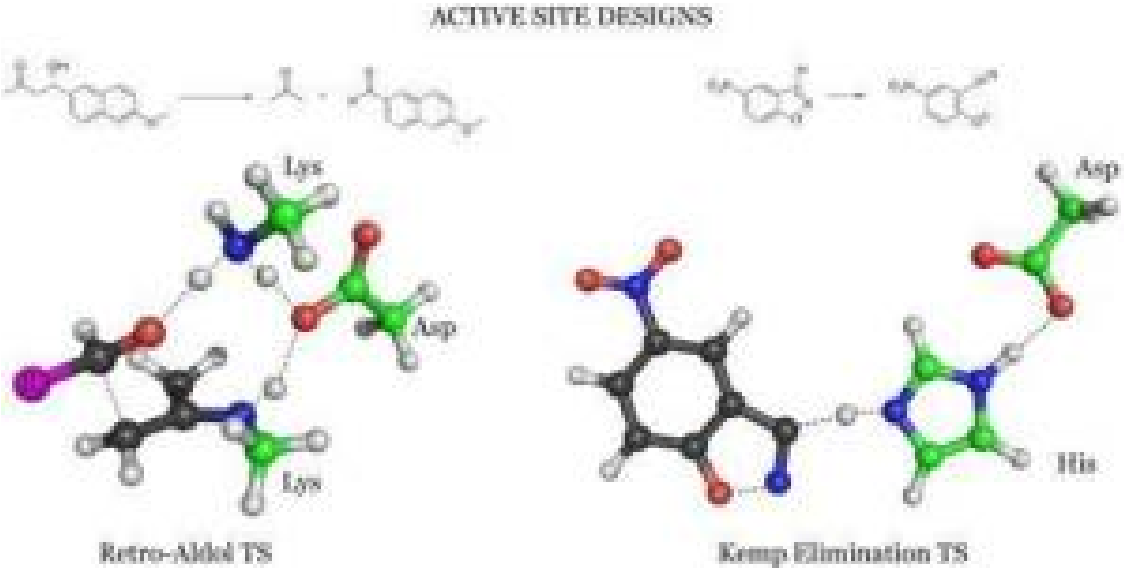
Professor Halliday said: 'What our results suggest is that the sorting of the elements that make up these planets may have happened at a much earlier stage than had been believed. It may even be that this sorting happened in the accretion disk out of which Mars and the early Earth first formed. What we can say is that the composition of these worlds is inconsistent with them simply forming out of large 'lumps' of stony meteorites, like those we see today in the asteroid belt.'

A report of the research, entitled 'Super-chondritic Sm/Nd in Mars, Earth and the Moon', is published in Nature on 20 March 2008. Co-author Alex Halliday is Professor of Geochemistry at Oxford University's Department of Earth Sciences and Head of the MPLS Division. The international team included scientists from the Universite Denis Diderot, France, the ETH Zurich, Switzerland and the Ecole Normale Superieure de Lyon, France.

Adapted from materials provided by University of Oxford.

http://www.sciencedaily.com:80/releases/2008/03/080319140319.htm

'Designer Enzymes' Created By Chemists Have Defense And Medical Uses



UCLA chemists design active sites of new man-made enzymes. (Credit: Copyright UC Regents)

ScienceDaily (Mar. 20, 2008) — Chemists from UCLA and the University of Washington have succeeded in creating "designer enzymes," a major milestone in computational chemistry and protein engineering.

The research, by a UCLA chemistry group led by professor Kendall Houk and a Washington group headed by biochemist David Baker, is reported March 19 in the advance online publication of the journal Nature. The Defense Advanced Research Projects Agency (DARPA) supported the study.

Designer enzymes will have applications for defense against biological warfare, by deactivating pathogenic biological agents, and for creating more effective medications, according to Houk.

"The design of new enzymes for reactions not normally catalyzed in nature is finally feasible," Houk said. "The goal of our research is to use computational methods to design the arrangement of groups inside a protein to cause any desired reaction to occur."

"Enzymes are such potent catalysts; we want to harness that catalytic ability," said research co-author Jason DeChancie, an advanced UCLA chemistry graduate student working with Houk's group. "We want to design enzymes for reactions that naturally occurring enzymes don't do. There are limits on the reactions that natural enzymes carry out, compared with what we can dream up that enzymes can potentially do."

Combining chemistry, mathematics and physics, the scientists report in the Nature paper that they have successfully created designer enzymes for a chemical reaction known as the Kemp elimination, a non-natural chemical transformation in which hydrogen is pulled off a carbon atom.

In a previous paper, published in the journal Science on March 7, the chemists reported another successful chemical reaction that uses designer enzymes to catalyze a retro-aldol reaction, which involves breaking a carbon-carbon bond. The aldol reaction is a key process in living organisms associated with the processing and synthesis of carbohydrates. This reaction is also widely used in the large-scale production of commodity chemicals and in the pharmaceutical industry, Houk said.

"Previous reports of designed enzymes have not been very successful, and some have been withdrawn," said Houk, UCLA's lead author of both papers. "That is hardly surprising, considering the challenge of designing in days or weeks what nature has perfected over billions of years of evolution. The rate

enhancements by our designer enzymes are modest and hardly competitive, so far, with those observed for their natural counterparts." "We hope with improvements in technology, that we can close the gap between designer enzymes and natural enzymes," DeChancie said.

"Most scientists thought this would be impossible, and we felt the same way after many failures," said Fernando Clemente, a former UCLA postdoctoral scholar and co-author of the Science paper. "But improvements in design and sophistication eventually led to success."

Clemente is now at Gaussian Inc., the company that created the software used in the Houk group's research.

The implementation of the aldol reaction in the active site of an enzyme has been an important challenge. The reaction involves at least six chemical transformations, requiring UCLA scientists to compute all six chemical steps with their corresponding transition states. The structures were then combined in such a way to allow all six steps to occur.

Both studies were funded by DARPA, the U.S. Defense Department's central research and development organization, with additional federal support from the National Science Foundation.Natural enzymes, which are relatively large protein molecules, are the powerful catalysts that control the reactions that sustain life. They play a central role in the chemical reactions involved in the transformation of food into the essential nutrients that provide energy, among many other critical functions.

Houk's team of 30 computational chemists uses quantum mechanical calculations to explore chemical reactions with supercomputers. Quantum mechanics is the fundamental theory that can predict all chemistry.

Houk and Baker's research groups have worked together for three years. Using algorithms and supercomputers, the UCLA chemists design the active site for the enzymes -- the area of the enzymes in which the chemical reactions take place -- and give a blueprint for the active site to their University of Washington colleagues. Baker and his group then use their computer programs to design a sequence of amino acids that fold to produce an active site like the one designed by Houk's group; Baker's group produces the enzymes.

Houk's group uses modern computational methods based on the physical laws of quantum mechanics to study in detail the mechanisms of chemical reactions. They have been involved in the DARPA-funded Protein Design Processes program, whose goal is to develop the technology that would make possible the design and creation of man-made working enzymes. The role of UCLA chemists has been the design of the active sites of the enzymes. By exploring multiple combinations of chemical groups, they can determine those that are most suitable to facilitate any given chemical transformation. Then, they determine the precise three-dimensional arrangement of these chemical groups, which is critical for the specificity and activity of the enzyme, with an accuracy of less than a hundredth of a nanometer.

Enzymes are the ultimate "green" catalysts by performing under ambient conditions in water, Houk said.

This technology will find tremendous applications, Houk said.

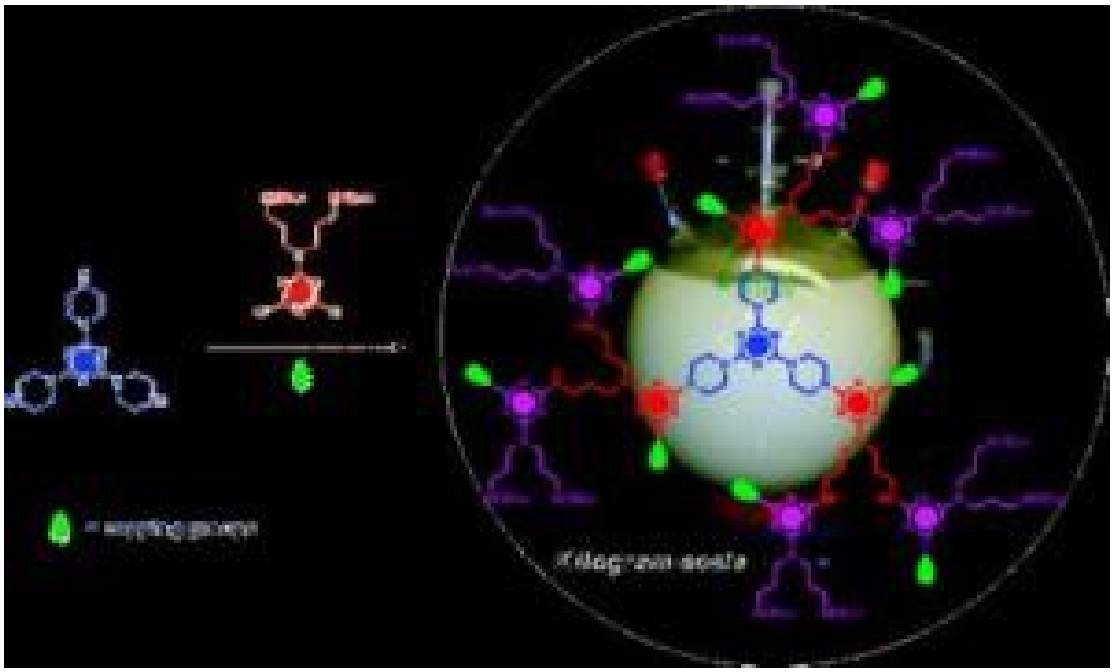
How far off are designer enzymes with important applications?

"I think we're there," DeChancie said. "These papers are showing the technology is now in place."

Adapted from materials provided by University of California - Los Angeles.

http://www.sciencedaily.com/releases/2008/03/080319160050.htm

New Industrial-scale Process For Making Big Molecules With A Big Future



Enormous molecules called dendrimers could serve a variety of functions, including improving drug delivery to materials. Scientists report a method to manufacture them on an industrial scale for the first time. (Credit: Courtesy of the American Chemical Society)

ScienceDaily (Mar. 20, 2008) — Scientists are reporting discovery of a new method that will enable manufacturers to produce industrial-size batches of dendrimers for the first time. Dendrimers are giant molecules with tree-like branches with a range of potentially valuable commercial and industrial applications.

Dendrimers can be produced in custom-designed shapes, sizes, structures and weights suitable for specific uses. Those potential applications range from drug delivery and gene transfer to new materials, coatings, sensors, and herbicides. But because they require multiple steps to make, dendrimers are difficult to produce on an industrial scale.

In their new study, Abdellatif Chouai and Eric E. Simanek describe a practical large-scale synthesis of dendrimers that sidestep this barrier. Their method yields a so-called "uncommitted intermediate," a dendrimer scaffolding that can be built upon in countless ways. This intermediate "can be elaborated into a wealth of diagnostic and therapeutic dendrimers -- some of which are currently being explored in our laboratory," the researchers add.

Journal reference: "Kilogram-Scale Synthesis of a Second-Generation Dendrimer Based on 1,3,5-Triazine Using Green and Industrially Compatible Methods with a Single Chromatographic Step". The Journal of Organic Chemistry. March 21, 2008. (http://dx.doi.org/10.1021/jo702462t)

Adapted from materials provided by American Chemical Society.

http://www.sciencedaily.com/releases/2008/03/080317114243.htm

New Portrait Of Earth Shows Land Cover As Never Before

A new global portrait taken from space details Earth's land cover with a resolution never before obtained. (Credit: ESA)

ScienceDaily (Mar. 19, 2008) — A new global portrait taken from space details Earth's land cover with a resolution never before obtained. ESA, in partnership with the UN Food and Agriculture Organisation, presented the preliminary version of the map to scientists recently at the 2nd GlobCover User Consultation workshop held in Rome, Italy.

Earth's land cover has been charted from space before, but this map, which will be made available to the public upon its completion in July, has a resolution 10 times sharper than any of its predecessors.

Scientists, who will use the data to plot worldwide land-cover trends, study natural and managed ecosystems and to model climate change extent and impacts, are hailing the product – generated under the ESA-initiated GlobCover project – as 'a milestone.'

"The GlobCover system is a great step forward in our capacities to automatically produce new global land cover products with a finer resolution and a more detailed thematic content than ever achieved in the past," Frédéric Achard of the European Commission's Joint Research Centre (JRC) said.

"This GlobCover product is much more than a map. It is an operational scientific and technical demonstration of the first automated land cover mapping on a global scale and may provide the detailed description of the land surface states needed for regional climate modelling," said Prof. Pierre Defourny, from the Université catholique de Louvain, who designed the land classification process.

"Land cover data is an essential requirement of the sustainable management of natural resources, environmental protection, food security, climate change and humanitarian programmes," John Latham of the Food and Agriculture Organisation (FAO) said.

"The GlobCover product will be the first freely available product at 300m resolution and is therefore a milestone product which will be fundamental to a broad level stakeholder community."

The map is based on 20 Terabytes of imagery – equivalent to the content of 20 million books – acquired from May 2005 to April 2006 by Envisat's Medium Resolution Imaging Spectrometer (MERIS) instrument.

All images then undergo a standardised processing technique developed and operated by Medias-France/Postel, together with Brockmann Consult, the Université catholique de Louvain and partners.

There are 22 different land cover types shown in the map, including croplands, wetlands, forests, artificial surfaces, water bodies and permanent snow and ice. For maximum user benefit, the map's thematic legend is compatible with the UN Land Cover Classification System (LCCS).

Adapted from materials provided by European Space Agency.

http://www.sciencedaily.com/releases/2008/03/080317123249.htm

Loss Of Egg Yolk Genes In Mammals And The Origin Of Lactation And Placentation

The emergence of alternative nourishment resources (lactation and placentation) during mammalian evolution set the stage for mammals' progressive loss of egg yolk nourishment (as a consequence of the loss of egg yolk genes). (Credit: Photo by Rasmus Kaessmann)

ScienceDaily (Mar. 19, 2008) — If you are reading this, you did not start your life by hatching from an egg. This is one of the many traits that you share with our mammalian relatives. A new article explores the genetic changes that led mammals to feed their young via the placenta and with milk, rather then via the egg, and finds that these changes occurred fairly gradually in our evolutionary history. The paper shows that milk-protein genes arose in a common ancestor of all existing mammalian lineages and preceded the loss of the genes that encoded egg proteins.

There are three living types of mammals: placental mammals (you, me, dogs, sheep, tigers, etc.), marsupial mammals (found in Australasia and South America, including kangaroos and possums), and monotremes (the duck-billed platypus and two species of Echidna). The reproductive strategies of these three groups are very different. Placental mammals have long pregnancies and complicated placentas that provide nourishment to the embryo, followed by a relatively short period of lactation.

Marsupials have a simpler form of placenta and much shorter pregnancies, followed by an extended period where the offspring is fed milk that changes in composition to meet the baby's altering nutritional needs. Monotremes--once a diverse group, but now restricted both in species number and distribution--have a much more reptilian beginning, as they lay eggs filled with yolk. While they do feed their young with milk, it is secreted onto a patch of skin rather then from a teat. How did these different strategies arise from our reptilian ancestors?

A new paper by David Brawand, Walter Wahli, and Henrik Kaessmann investigates the transition in offspring nutrition by comparing the genes of representatives of these three different mammalian lineages with those of the chicken--an egg-laying, milkless control. The authors found that there are similar genetic regions in all three mammalian lineages, suggesting that the genes for casein (a protein found in milk) arose in the mammalian common ancestor between 200 and 310 million years ago, prior to the evolution of the placenta.

Eggs contain a protein called vitellogenin as a major nutrient source. The authors looked for the genes associated with the production of vitellogenin, of which there are three in the chicken. They found that while monotremes still have one functional vitellogenin gene, in placental and marsupial mammals, all three have become pseudogenes (regions of the DNA that still closely resemble the functional gene, but which contain a few differences that have effectively turned the gene off). The gene-to-pseudogene transitions happened sequentially for the three genes, with the last one losing functionality 30-70 million years ago.

Therefore, mammals already had milk before they stopped laying eggs. Lactation reduced dependency on the egg as a source of nutrition for developing offspring, and the egg was abandoned completely in the marsupial and placental mammals in favor of the placenta. This meant that the genes associated with egg production gradually mutated, becoming pseudogenes, without affecting the fitness of the mammalian lineages.

Journal reference: Brawand D, Wahli W, Kaessmann H (2008) Loss of egg yolk genes in mammals and the origin of lactation and placentation. PLoS Biol 6(3): e63. doi:10.1371/journal.pbio.0060063

Adapted from materials provided by PLoS Biology, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/03/080318094610.htm

Hubble Finds First Organic Molecule On Extrasolar Planet

Artist's impression of the extrasolar planet HD 189733b, now known to have methane and water. Astronomers used the Hubble Space Telescope to detect methane -- the first organic molecule found on an extrasolar planet. Hubble also confirmed the presence of water vapor in the Jupiter-size planet's atmosphere, a discovery made in 2007 with the help of the Spitzer Space Telescope. They made the finding by studying how light from the host star filters through the planet's atmosphere. (Credit: ESA, NASA and G. Tinetti (University College London, UK & ESA))

ScienceDaily (Mar. 19, 2008) — The tell-tale signature of the molecule methane in the atmosphere of the Jupiter-sized extrasolar planet HD 189733b has been found with the Hubble Space Telescope. Under the right circumstances methane can play a key role in prebiotic chemistry -- the chemical reactions considered necessary to form life as we know it. Although methane has been detected on most of the planets in our Solar System, this is the first time any organic molecule has been detected on a world orbiting another star.

This discovery proves that Hubble and upcoming space missions, such as the NASA/ESA/CSA James Webb Space Telescope, can detect organic molecules on planets around other stars by using spectroscopy, which splits light into its components to reveal the "fingerprints" of various chemicals.

"This is a crucial stepping stone to eventually characterising prebiotic molecules on planets where life could exist", said Mark Swain of NASA's Jet Propulsion Laboratory (JPL), Pasadena, USA, who led the team that made the discovery. Swain is lead author of a paper in the 20 March issue of Nature.

The discovery comes after extensive observations made in May 2007 with Hubble's Near Infrared Camera and Multi-Object Spectrometer (NICMOS). It also confirms the existence of water molecules in the planet's atmosphere, a discovery made originally by NASA's Spitzer Space Telescope in 2007. "With this observation there is no question whether there is water or not -- water is present", said Swain.

The planet, HD 189733b, now known to have methane and water vapour is located 63 light-years away in the constellation Vulpecula, the little fox. HD 189733b, a "hot Jupiter"-type extrasolar planet, is so close to its parent star that it takes just over two days to complete an orbit. "Hot Jupiters" are the size of Jupiter but orbit closer to their stars than the tiny innermost planet Mercury in our Solar System. HD 189733b's atmosphere swelters at 900 degrees C, about the same temperature as the melting point of silver.

The observations were made as the planet HD 189733b passed in front of its parent star in what astronomers call a transit. As the light from the star passed briefly through the atmosphere along the edge of the planet, the gases in the atmosphere imprinted their unique signatures on the starlight from the star HD 189733. According to co-author Giovanna Tinetti from the University College London and the European Space Agency: "Water alone could not explain all the spectral features observed. The additional contribution of methane is necessary to fit the Hubble data".

Methane, composed of carbon and hydrogen, is one of the main components of natural gas, a petroleum product. On Earth, methane is produced by a variety of sources: natural sources such as termites, the oceans and wetland environments, but also from livestock and manmade sources like waste landfills and as a by-product of energy generation. Tinetti is however quick to rule out any biological origin of the methane found on HD 189733b. "The planet's atmosphere is far too hot for even the hardiest life to survive -- at least the kind of life we know from Earth. It's highly unlikely that cows could survive here!"

The astronomers were surprised to find that the planet has more methane than predicted by conventional models for "hot Jupiters". This type of hot planet should have much more carbon monoxide than methane but HD 189733b doesn't. Tinetti explains: "A sensible explanation is that the Hubble observations were more sensitive to the dark night side of this planet where the atmosphere is slightly colder and the photochemical mechanisms responsible for methane destruction are less efficient than on the day side".

Though the star-hugger planet is too hot for life as we know it, "this observation is proof that spectroscopy can eventually be done on a cooler and potentially habitable Earth-sized planet orbiting a dimmer red dwarf-type star", Swain said. The ultimate goal of studies like these is to identify prebiotic molecules in the atmospheres of planets in the "habitable zones" around other stars, where temperatures are right for water to remain liquid rather than freeze or evaporate away.

"These measurements are an important step to our ultimate goal of determining the conditions, such as temperature, pressure, winds, clouds, etc., and the chemistry on planets where life could exist. Infrared spectroscopy is really the key to these studies because it is best matched to detecting molecules", said Swain.

Adapted from materials provided by ESA/Hubble Information Centre.

http://www.sciencedaily.com/releases/2008/03/080319140759.htm

Mercury's Shifting, Rolling Past

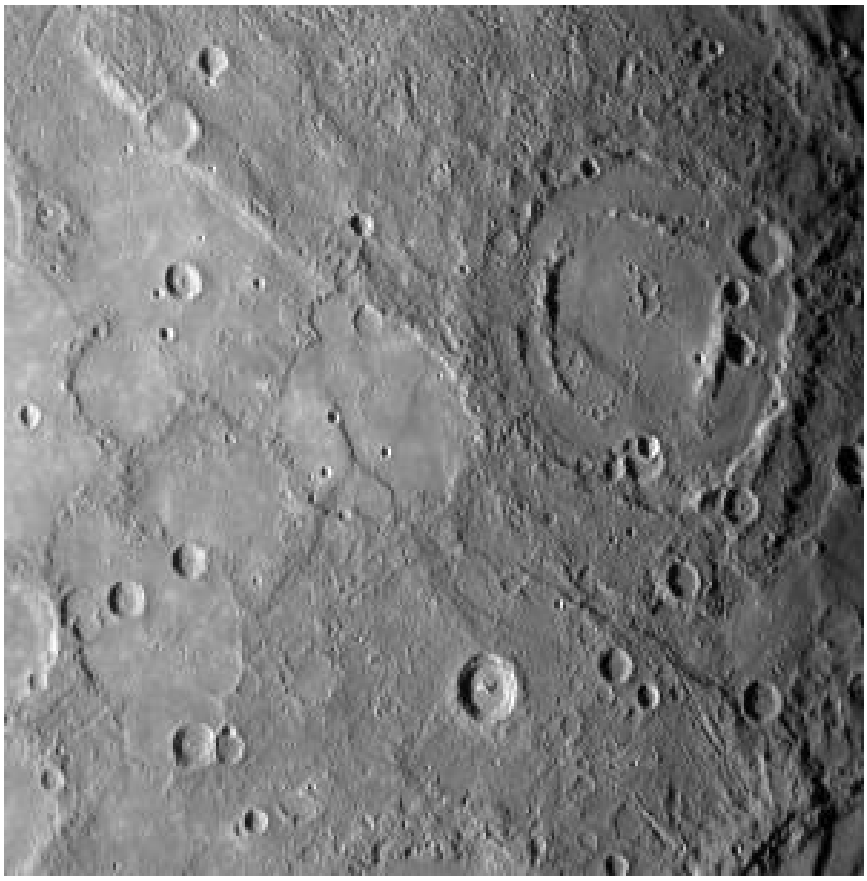


Image of Mercury taken January 14, 2008 by MESSENGER. Patterns of scalloped-edged cliffs or lobate scarps on Mercury's surface are thrust faults that are consistent with the planet shrinking and cooling with time. (Credit: NASA/Johns Hopkins University Applied Physics Laboratory/Carnegie Institution of Washington)

ScienceDaily (Mar. 19, 2008) — Patterns of scalloped-edged cliffs or lobate scarps on Mercury's surface are thrust faults that are consistent with the planet shrinking and cooling with time. However, compression occurred in the planet's early history and Mariner 10 images revealed decades ago that lobate scarps are among the youngest' features on Mercury. Why don't we find more evidence of older compressive features?

Scott D. King, professor of geosciences at Virginia Tech, reports in Nature Geoscience that mantle convection -- loss of heat from the mantle through the crust has also played a role in the formation of lobate scarps on Mercury.

The gravity and topographic data from the MESSENGER (Mercury Surface, Space Environment, Geochemistry, and Ranging) mission will test his hypothesis. In the meantime, King has created numerical simulations of the three-dimensional nature of convection within Mercury's silicate mantle. The computations were done using the Virginia Tech geoscience department's High-Performance Earth Simulation System, a high-speed, high-capacity 768-core Dell computing cluster.

Scientists have offered a number of explanations for global contraction on Mercury, such as cooling and core formation, tidal effects due to gravitation interactions with the Sun, impacts, and mantle convection.

"The idea that contraction due to cooling is the cause of these features has been around for a long time and makes a lot of sense," King said. "But the apparent pattern and the orientation of these features is

puzzling. I can't really rule out the idea that this is just an artifact of the one hemisphere we have seen and the one camera/sun angle that we have pictures from. But the orientation of these features seems to require something additional, which I think is mantle convection."

King noted that the upwellings from mantle convection on Mercury takes the form of long, linear rolls in distinctive clusters and directionality, rather than a random pattern associated with upthrusts from global compression acting alone.

"The pattern of convection I see in my mercurian convection models is different from Venus, Mars, and Earth because the mantle is so much thinner -- or the iron core is so much larger relatively speaking," King said. "On Venus, Earth, and Mars, the hot material coalesces into cylindrical plumes, not linear sheets. That could influence the tectonics at the surface and the convection within the iron core, which is most likely what is responsible for Mercury's magnetic field," he said.

"The timing and orientation of these features are controlled by convection and not global contraction," King said. "Because the model suggests that mantle convection is still active today, gravity and topography data from the Messenger mission may be able to confirm the model."

King adds that the scarps almost certainly stopped deforming several billion years ago. "The planet has cooled so much and the lithosphere is so thick that even if mantle convection still exists today, it will not modify the surface further."

He concludes, "I think that if we want to figure out how the Earth got to be the way it is, we need to understand how the other planets got to be the way they are too."

The article "Pattern of lobate scarps on Mercury's surface reproduced by a model of mantle convection," by King in the Letters section of Nature Geoscience appears in the Advance Online Publication at http://dx.doi.org/10.1038/ngeo152.

Messenger made its first early pass of Mercury in January. It will enter orbit around the inner planet in March 2011.

Adapted from materials provided by Virginia Tech, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/03/080317123246.htm

Rare White Killer Whale Spotted In Alaskan Waters

Scientists have sighted a creature of great rarity and even myth: a white whale. (Credit: NOAA)

ScienceDaily (Mar. 19, 2008) — Scientists aboard the NOAA research vessel Oscar Dyson in the North Pacific have sighted a creature of great rarity and even myth: a white whale.

The white killer whale was spotted with its pod about two miles off Kanaga Volcano, part of Alaska's Aleutian Islands, on February 23. At the time, Kodiak-based Oscar Dyson was on a research expedition for NOAA's Alaska Fisheries Science Center, assessing pollock fish stocks near Steller sea lion haulout sites.

The white whale is a fish-eating type of killer whale, as were all the killer whales photographed on the expedition. Fish-eating killer whales are the most frequently seen whales around the Aleutian Islands during the summer. The winter sightings represent important evidence that they may be common year-round.

Holly Fearnbach, a research biologist at NOAA's National Marine Mammal Laboratory in Seattle, was able to photograph the whale's white fin and back. "With hundreds of killer whales documented around the Aleutian Islands, this was equivalent to finding a needle in a haystack," she said.

"Despite the typical stormy weather that makes research operations very difficult in the winter, the scientific team on Oscar Dyson has been pulling in a huge amount of planned research data," said Alaska Fisheries Science Center director Doug DeMaster. "Extraordinary sightings like this white whale are icing on the cake."

Few white killer whales have ever been seen, according to Fearnbach, much less scientifically documented.

This whale is likely not a true albino because it still has signs of darker pigmented areas on its body. However, because of its prominent coloring, the white whale serves as an indicator for movements of killer whales in the North Pacific.

White killer whales have been sighted previously in the Aleutian Islands as well as in the Bering Sea and off the Russian coast. Scientists are working to confirm whether or not the whale sighted Feb. 23 is the same animal as any of those previous seen.

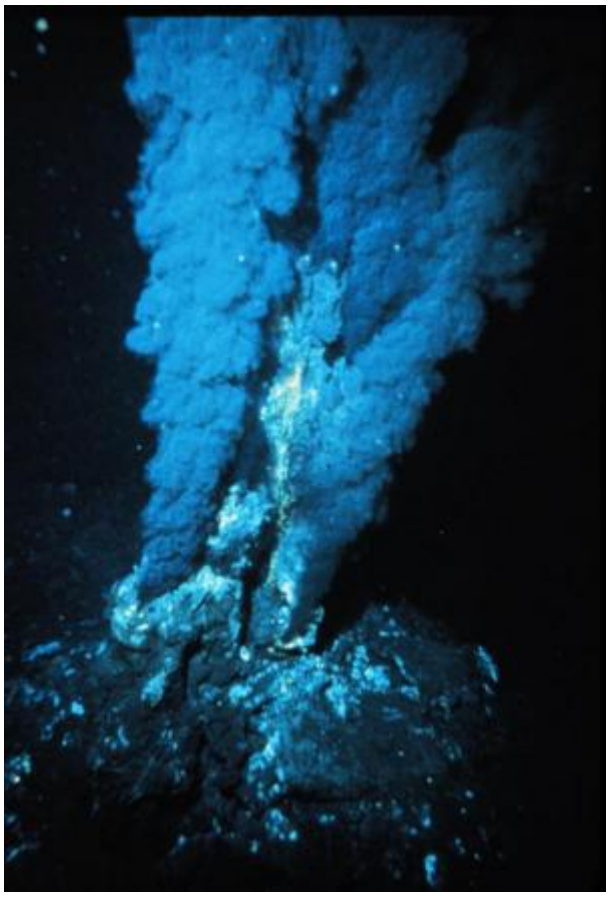
Besides fish and marine mammal researchers from the Alaska Fisheries Science Center, Oscar Dyson also carried a bird observer from the US Fish and Wildlife Service. All added to scientific knowledge about the marine ecosystem of the Aleutian Islands in winter.

The National Oceanic and Atmospheric Administration, an agency of the U.S. Commerce Department, is dedicated to enhancing economic security and national safety through the prediction and research of weather and climate-related events and information service delivery for transportation, and by providing environmental stewardship of our nation's coastal and marine resources. Through the emerging Global Earth Observation System of Systems (GEOSS), NOAA is working with its federal partners, more than 70 countries and the European Commission to develop a global monitoring network that is as integrated as the planet it observes, predicts and protects.

Adapted from materials provided by National Oceanic And Atmospheric Administration.

http://www.sciencedaily.com/releases/2008/03/080318203016.htm

Cutting-edge Computing Helps Discover Origin Of Life On Earth



Deep ocean hydrothermal vents have long been suggested as possible sources of biological molecules such as RNA and DNA but it was unclear how they could survive the high temperatures and pressures that occur round these vents. (Credit: OAR/National Undersea Research Program (NURP); NOAA)

ScienceDaily (Mar. 19, 2008) — The UK's national computing grid, along with their counterparts in the US (TeraGrid) and Europe have helped UCL (University College London) scientists shed light on how life on earth may have originated.

Deep ocean hydrothermal vents have long been suggested as possible sources of biological molecules such as RNA and DNA but it was unclear how they could survive the high temperatures and pressures that occur round these vents.

Professor Peter Coveney and colleagues at the UCL Centre for Computational Science have used computer simulation to provide insight into the structure and stability of DNA while inserted into layered minerals. Computer simulation techniques have rarely been used to understand the possible chemical pathways to the formation of early biomolecules until now.

Professor Coveney explains, "Computational grids are only now being made easy to use for scientists, enabling simulations of sufficient size to model these large biomolecule and mineral systems".

Previous experimental studies have shown that molecules such as DNA can be inserted into minerals called layered double hydroxides (LDHs) but no one has thus far been able to show at the level of atoms and molecules how the DNA interacts with the mineral, or how the DNA might look inside the mineral layers. These minerals would have been common in the earliest age of Earth 2500 million years ago.

The simulations reproduced the high temperatures and pressures that occur around hydrothermal vents. It was shown that the structure of DNA inserted into layered minerals becomes stabilized at these conditions and therefore protected from catalytic and thermal degradation.

"Grids of supercomputers are essential for this kind of study", says Professor Coveney, "The time taken to run these simulations is reduced from the years that a desktop computer would take, to hours by using the many thousands of processors made available across continents".

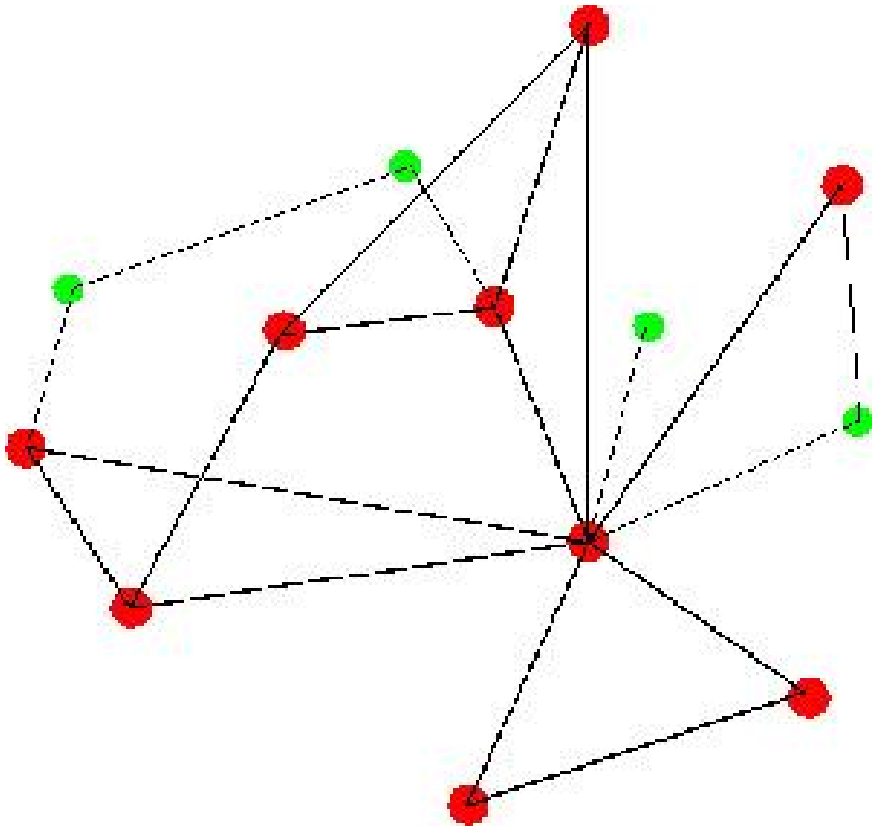
Professor Coveney's group has been researching into the routes to the origin of life for a number of years, studying the way that genetic information may have arisen and been replicated, as well as how small molecules may have formed, working together with colleagues at Nottingham and Durham Universities.

Journal reference: 'Computer Simulation Study of the Structural Stability and Materials Properties of DNA-Intercalated Layered Double Hydroxides' by Mary-Ann Thyveetil, Peter Coveney, H. Chris Greenwell and James Suter, is published online in the Journal of the American Chemical Society on Tuesday 18 March 2008.

Adapted from materials provided by National Grid Service, via AlphaGalileo.

http://www.sciencedaily.com/releases/2008/03/080318212430.htm

Algorithm Finds The Network -- For Genes Or The Internet



Weixiong Zhang has created a mathematical recipe - also known as an algorithm - that automatically discovers communities and their subtle structures in various networks, from the Internet to genetic lattices. (Credit: Image courtesy of Washington University in St. Louis)

ScienceDaily (Mar. 19, 2008) — Human diseases and social networks seem to have little in common. However, at the crux of these two lies a network, communities within the network, and farther even, substructures of the communities. In a recent paper in Physical Review E, Weixiong Zhang, Ph.D., Washington University associate professor of computer science and engineering and of genetics, along with his Ph.D. student, Jianhua Ruan, published an algorithm (a recipe of computer instructions) to automatically identify communities and their subtle structures in various networks.

Many complex systems can be represented as networks, Zhang said, including the genetic networks he studies, social networks and the Internet itself. The community structure of networks features a natural division in which the vertices in each subnetwork are highly involved with each other, though connected less strongly with the rest of the network. Communities are relatively independent of one another structurally, but researchers think that each community may correspond to a fundamental functional unit. A community in a genetic network usually contains genes with similar functions, just as a community on the World Wide Web often corresponds to Web pages on similar topics.

All Zhang and Ruan need are data. Their algorithm is more scalable than existing similar algorithms and can detect communities at a finer scale and with a higher accuracy. One impact of having such a computational biology tool is found in the genomics field. Using this tool, researchers may be better able to identify and understand communities of genes and their networks as well as how they cooperate in causing diseases, such as sepsis, virus infections, cancer and Alzheimer's disease.

Versatile math tool

Zhang and Ruan's algorithm is so versatile that it has been applied to identify the community structure of a network of co-expressed genes involved in bacterial sepsis.

"This is a tool not only for biological research, but also for sociological research," Zhang said. It can determine, for instance, how people interact in social networks and how scientists collaborate in scientific research.

In biological systems there are lots of communities with many proteins involved to form complexes. "We can use this tool to identify structures embedded in the data," Zhang said. "We've identified the substructures of three different RNA polymerase complexes from noisy data, for instance, which are crucial for gene transcription."

Zhang began his computer science career as a specialist in artificial intelligence, but in recent years he has focused more on computational biology. His goal is to use computational means to solve some basic biology problems and those related to human diseases. For example, his group studied a basic problem of the transcription mechanism of microRNAs, which are small, noncoding RNAs that regulate the development and stress responses of nearly all eukaryotic species that have been studied. Using machine learning techniques, Zhang and his collaborators showed that almost all intergenic microRNA genes in four model species, human, mouse, rice and mustard plant (Arabidopsis), are transcribed by RNA polymerase II, which transcribes protein-coding genes. The results were published in PLoS Computational Biology, 3(3):e37 (2007).

Multidisciplinary research that combines computational approaches with biological data is a hallmark of research themes in Zhang's group. As another example, in a paper published in Genome Biology, 7(6):R49 (2006), Zhang and his Ph.D. student, Guandong Wang, developed an algorithm called WordSpy that identifies cis-regulatory elements — short DNA sequences that are critical to the regulation of gene expression — from a large amount of genome sequences.

Stealth from the ancient Greeks

WordSpy was inspired by an old information-hiding technique called stegography, which can be traced back to ancient Greece. As such, their method can be used to analyze not only genomic sequences, but also natural languages. In fact, their method has been extended to segment words and phrases in Chinese.

Aside from studying networks, Zhang also has formed a broad network of collaborations with scientists across the WUSTL campus and outside of the university. The problems he studies are diverse, ranging from stress responses and virus infection in plants, such as rice, to human diseases, including Alzheimer's disease, herpes virus infection, sepsis, cardiac hypertrophy, lung cancer and lung transplantation. The computational tools his group has developed are helping him and his collaborators come to grips with how perturbation to gene expression can lead to complex traits and human diseases as well as how microRNAs regulate gene expression.

Zhang recently was awarded a grant from the Alzheimer's Association to develop computational systems biology methods for analyzing gene expression perturbation in diseased brains. He has been collaborating with scientists in the Washington University School of Medicine and Scripps Institute in La Jolla, Calif., to study roughly 30 postmortem brain samples of people who died from Alzheimer's disease.

"I'm interested in modeling gene expression perturbation in diseased brains and am looking for the genetic signature," Zhang said. "Due to the complexity of Alzheimer's disease, we are developing other tools. It's a polygenic disease, with a lot of genes at work. I'm sure we'll find that a network is involved."

Reference: Physical Review E 77:016104 (2008)

Adapted from materials provided by Washington University in St. Louis.

http://www.sciencedaily.com/releases/2008/03/080317123237.htm

Botox For Newborns

ScienceDaily (Mar. 19, 2008) — Botulinum toxin, also called Botox, is best known as one of the most commonly used molecules to reduce wrinkles. It is also known as one of the most poisonous naturally occurring substances.

Now, thanks to Dr. Sam Daniel, Associate Director of Research of the Otorhinolaryngology Division at the Montreal Children's Hospital of the McGill University Health Centre, this protein has become an effective method to save newborns suffering from CHARGE Syndrome from having to undergo devastating tracheotomies. Dr. Daniel describes the case of the first infant patient treated with the toxin in an article from the Archives of Otolaryngology dated March 17th.

CHARGE Syndrome is rare, but it can become life-threatening in its most severe form. The syndrome includes a variety of birth defects in different organs, such as the heart, eyes or ears, but it also affects the salivary glands. They are hyper-stimulated and secrete excessive fluids that are discarded into the lungs, causing asphyxia. This was the case for the patient that Dr. Daniel discusses in his article: at the age of two and a half months, little Franck (not his real name) was still unable to breathe without assistance and a tracheotomy seemed inevitable in order to relieve his respiratory system.

Seeing the despair of Franck's parents, Dr. Daniel proposed an experimental treatment as a last recourse: the injection of a minute dose of Botox into each of Franck's salivary glands. This had never been done before on such a young child, but no other option could prevent permanent intubation. Two weeks after the injections, Franck's extubation was a success. He now leads the normal life of a three-year-old boy at home with his parents.

Botulinum toxin is a very powerful neurotoxin, meaning that it blocks nerve activity. In Franck's case, it blocked the nerves that stimulated his salivary glands thereby reducing their secretions to a normal level. The infant then needed repeated injections every four to six months for one and a half years until his glands shrunk and stopped overproducing saliva.

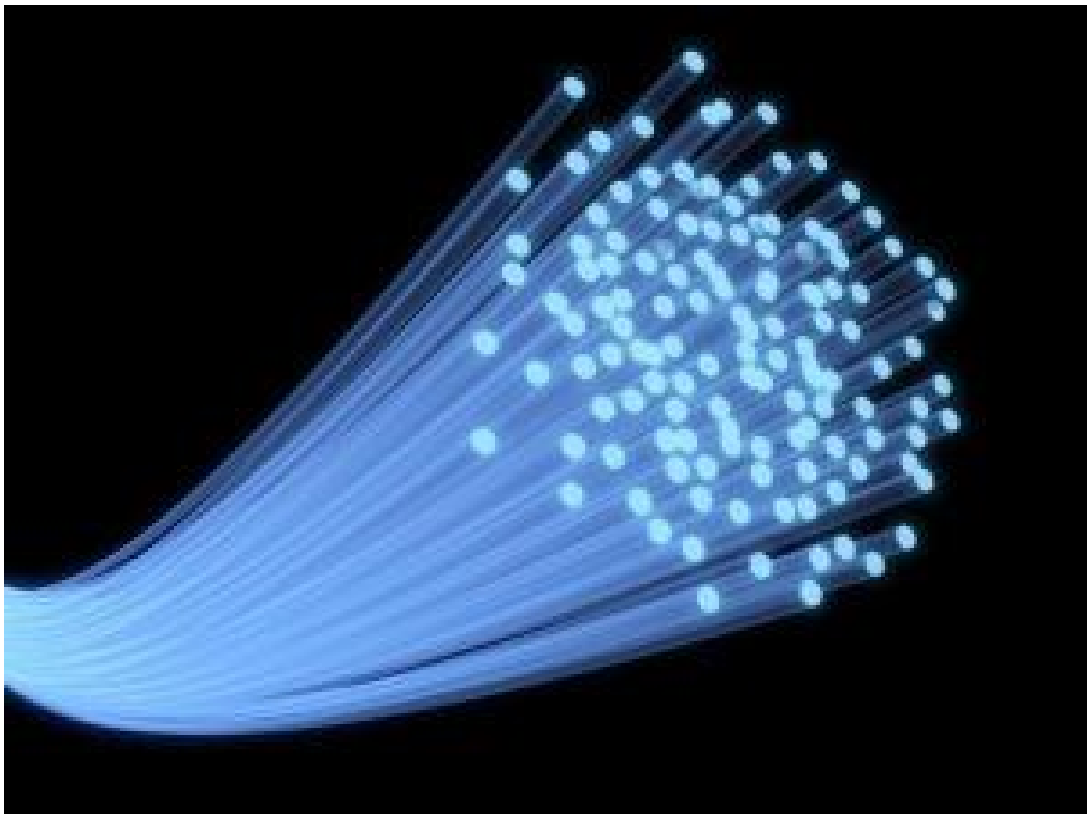
Since this first attempt 5 years ago, Dr. Daniel has performed over 1000 Botox injections in young children including 12 in newborns. "This treatment is extremely effective, and to date I have not encountered any major side effects despite the bad press Botox got recently. It also helps us considerably improve the lives of our patients," he explained.

Dr Sam Daniel is Associate Director of Research of the Otorhinolaryngology Division at the Montreal Children's Hospital of the McGill University Health Centre, and Associate professor at McGill University.

Adapted from materials provided by McGill University Health Centre.

http://www.sciencedaily.com/releases/2008/03/080317164348.htm

Loopy Photons Clarify 'Spookiness' Of Quantum Physics



In the experiment, the researchers send a pulse of light into both ends of a twisted loop of optical fiber. Pairs of photons of the same color traveling in either direction will, every so often, interact in a process known as "four-wave mixing," converting into two new, entangled photons. (Credit: iStockphoto/Sebastian Kaulitzki)

ScienceDaily (Mar. 19, 2008) — Researchers at the National Institute of Standards and Technology (NIST) and the Joint Quantum Institute (NIST/University of Maryland) have developed a new method for creating pairs of entangled photons, particles of light whose properties are interlinked in a very unusual way dictated by the rules of quantum physics. The researchers used the photons to test fundamental concepts in quantum theory.

In the experiment, the researchers send a pulse of light into both ends of a twisted loop of optical fiber. Pairs of photons of the same color traveling in either direction will, every so often, interact in a process known as "four-wave mixing," converting into two new, entangled photons, one that is redder and the other that is bluer than the originals.

Although the fiber's twist means that pairs emerging from one end are vertically polarized (having electric fields that vibrate up and down) while pairs from the other end are horizontally polarized (vibrating side to side), the setup makes it impossible to determine which path the newly created photon pairs took. Since the paths are indistinguishable, the weird rules of quantum physics say that the photon pairs actually will be in both states--horizontal and vertical polarization--at the same time. Until someone measures one, at which time both photons must chose one specific, and identical, state.

This "spooky action at a distance" is what caused Einstein to consider quantum mechanics to be incomplete, prompting debate for the past 73 years over the concepts of "locality" and "realism." Decades of experiments have demonstrated that measurements on pairs of entangled particles don't agree with the predictions made by "local realism," the concept that processes occurring at one place have no immediate effect on processes at another place (locality) and that the particles have definite, preexisting properties (called "hidden variables") even without being measured (realism).

Experiments so far have ruled out locality and realism as a combination. But could a theory assuming only one of them be correct" Nonlocal hidden variables (NLHV) theories would allow for the possibility of hidden variables but would concede nonlocality, the idea that a measurement on a particle at one location may have an immediate effect on a particle at a separate location.

Measuring the polarizations of the pairs of entangled particles in their setup, the researchers showed that the results did not agree with the predictions of certain NLHV theories but did agree with the predictions of quantum mechanics. In this way, they were able to rule out certain NLHV theories. Their results agree with other groups that have performed similar experiments.

* J. Fan, M.D. Eisaman and A. Migdall, Bright phase-stable broadband fiber-based source of polarization-entangled photon pairs. Physical Review A 76, 043836 (2007).

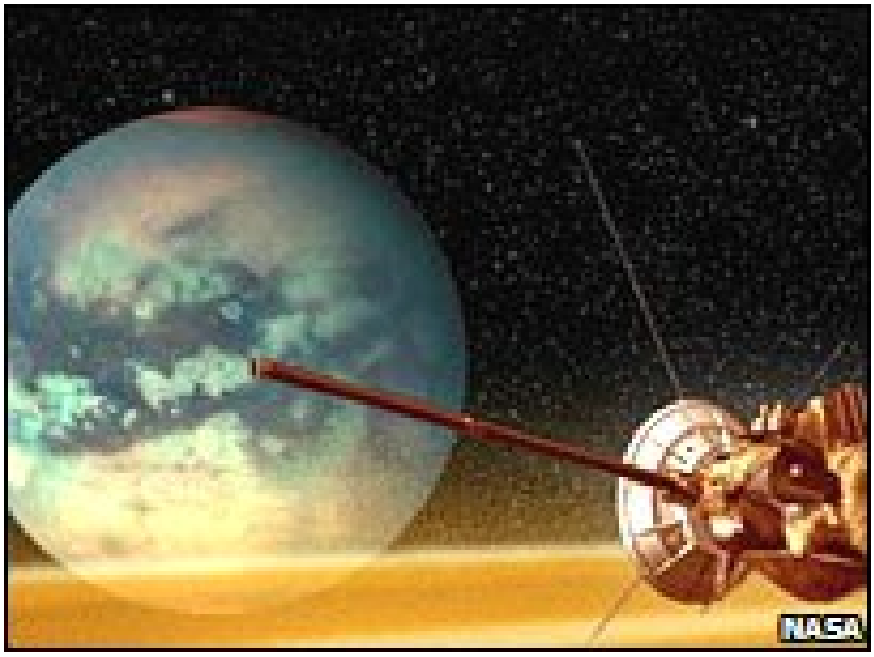
** M.D. Eisaman, E.A. Goldschmidt, J. Chen, J. Fan and A. Migdall. Experimental test of non-local realism using a fiber-based source of polarization-entangled photon pairs. Physical Review A., upcoming.

Adapted from materials provided by National Institute of Standards and Technology.

http://www.sciencedaily.com/releases/2008/03/080318174941.htm

Saturn moon may have hidden ocean

By Helen Briggs
Science reporter, BBC News



Saturn's moon Titan may have a deep, hidden ocean, according to data published in the journal Science.

Radar images from the Cassini-Huygens mission reinforce predictions that a reservoir of liquid water exists beneath the thick crust of ice.

If confirmed, it would mean that Titan has two of the key components for life - water and organic molecules.

Currently, three other Solar System objects are suspected of having deep oceans: Ganymede, Callisto and Europa.

The Cassini-Huygens mission is a cooperative project of the US space agency (Nasa), the European Space Agency (Esa) and the Italian Space Agency (Asi).

> **We've got to go back again with balloons and rovers and really understand this place**
> Prof John Zarnecki

When Cassini began to observe the largest of Saturn's moons in 2004, the surface was thought to be completely covered with an ocean of hydrocarbons.

But when the spacecraft turned its radar on the moon for the first time in 2004, and the Huygens probe parachuted to the surface a year later, a different picture emerged.

Much of the surface was found to be solid, with geological features such as dunes, channels and impact craters, punctuated by vast "lakes".

Cassini's latest fly-by of Titan is providing a new glimpse of these features, which to researchers' surprise, are not in the place they should be.

Coupled with models of how the moon spins, the data suggests that the observed seasonal variation in spin rate could only exist if a liquid ocean lay beneath the solid crust.

The researchers, led by Dr Ralph Lorenz of Johns Hopkins University Applied Physics Laboratory, US, say their predictions can be checked in the proposed extended Cassini mission or in future missions.

John Zarnecki, Professor of Space Science, at the UK's Open University, who was not part of the study, said the motivation to go back to Titan with a more sophisticated space probe was "overwhelming".

Evidence suggests that Titan has two of the key constituents for the formation of life - water and organic molecules, and possibly a third - a source of energy, he said.

Prof Zarnecki told BBC News: "We know there are organic molecules, the place is swarming in organics.

"Titan is 50% water-ice. If it is liquid, as this paper is implying some of it is, it looks as though we've got at least two of the things to initiate the chemistry that leads to life.

"It wouldn't be too far fetched to imagine certain spots on Titan where there would be a source of energy - maybe geothermal energy, as we have on Earth at the bottom of the oceans."

Titan is the second largest moon in the Solar System; only Jupiter's Ganymede satellite is bigger.

Past observations have shown that Titan in many ways resembles a very early Earth, particularly in the composition of its atmosphere. The major difference is the frigid temperatures out near Saturn.

Prof Zarnecki added: "We've got to go back again with balloons and rovers and really understand this place."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/science/nature/7307584.stm

Published: 2008/03/20 19:41:03 GMT

Genes show Latin America's past
Results from a genetic study of Latin America suggest most Latin Americans are descended from European men and Native American or African women.

Scientists say the study, said to be the largest of its kind, backs up historical theories about the Spanish Conquistadors of the 16th Century.

The research involved genetic analysis of over 300 individuals from across seven countries from Mexico to Chile.

Details of the study are published in the online journal PLoS Genetics.

The genetic research was conducted by universities across Latin America, the US and Europe.

'Genetic continuity'

Close genetic analysis of blood samples from across the region show, the researchers claim, that the majority of Latin Americans can trace their origins some 13 generations back to the time of the Conquistadors.

What is more, they say, the genes suggest most are a product of a match between a European male settler and a Native American or African woman.

This supports the historical argument that European colonisers killed off many of the native men and had sex with native women or with African slaves.

Professor Andres Ruiz-Linares of University College London, who led the study, says that it goes some way to rescuing the past of Latin America and what he calls the "living presence" of Native Americans throughout the region.

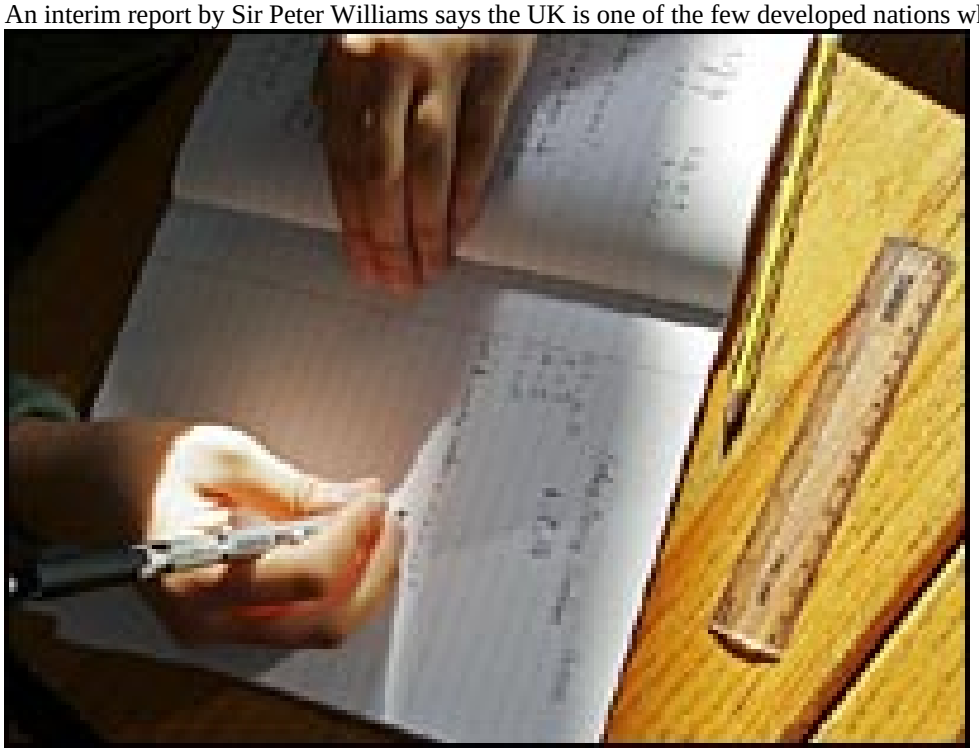
He says despite many past attempts to erase Native Americans from the history of the Latin America, the new research shows there is substantial genetic continuity between the pre- and post-Columbian populations.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/americas/7308102.stm

Published: 2008/03/21 04:38:04 GMT

More primary maths experts needed
Every primary school should have a maths specialist and parents should have a less negative attitude to the subject, a government review says.

An interim report by Sir Peter Williams says the UK is one of the few developed nations where it is



acceptable to say you are "useless at maths".

Such attitudes will not help children see maths as an essential and rewarding part of their daily lives, it says.

The study criticises the amount of maths training teachers receive.

Most teachers had the basic requirement in maths for teacher training - one GCSE in the subject.

The report said parents needed to have a "can-do" attitude to maths and to learn the modern techniques their children were using to help them and give them a love of maths.

"Social issues surrounding the subject affect learners at all levels, including the very young," it says.

> **Why is it that this is one of the few countries where it is acceptable, fashionable even, to declare that you are useless at maths?**
> Jim Knight, Schools Minister

"The United Kingdom remains one of the few advanced nations where it is socially acceptable to profess an inability to cope with mathematics.

"That is hardly conducive to a home environment in which mathematics is seen by children as an essential and rewarding part of their everyday lives."

That view was endorsed by schools minister Jim Knight: "Why is it that this is one of the few countries where it is acceptable, fashionable even, to declare that you are useless at maths?

"Maths is central to giving children the best start and the right skills for life.

"If children can't add up, and if maths isn't valued or seen as being important, how can we expect them in secondary school to understand science, or manage their own finances when they go to college."

Improved results

The report says children's achievement in maths has improved, particularly since the introduction of the National Numeracy Strategy in 1998.

"The percentage of 11-year-olds attaining level 4 and above at Key Stage 2 has risen from 59% to over 77%" (since then), it says.

"In its recently announced Children's Plan, the government has set out further ambitious goals to maintain the progress secured so far. Central to the achievement of these goals will be the quality of teaching in our schools and settings."

The report recommended better training for maths teachers and for trials of intensive tuition in groups of three for pupils who are struggling with maths.

Sir Peter was critical of the minimum maths requirement for teacher training (GCSE grade C) and of the general provision of continued professional development (extra training).

Key recommendations
Maths specialist in every primary school
Better continued training
More targeted help for struggling pupils

In recent years teachers have also had to sit a maths test to receive their professional qualification (Qualified Teacher Status), but Sir Peter pointed out that this could be taken as many times as required.

"On average a trainee teacher will receive only 15 to 30 days' further education in the subject during his or her course," he said.

"Worse, there is no register or tracking system to follow the professional career development of the primary teacher.

"This is in sharp contrast with the engineering, legal and medical professions, in all of which continuing professional development is an integral and essential part of all practitioners' lives."

Sir Peter, the chancellor of Leicester University, was appointed to review maths education in primary schools. His interim report is now out for consultation.

'Too gloomy'

Steve Sinnott, general secretary of the National Union of Teachers, said: "There is every argument for all primary schools to each have a trained specialist mathematics teacher.

"However, there will need to be significant extra funding for primary schools to pay for both training and the additional pay responsibility points for new specialists.

"As the report says, there is much good work on mathematics taking place in primary schools. Nevertheless it is too gloomy about teachers' qualifications.

"The report omits the fact that all trainee teachers have had to take skills tests in mathematics for the last few years as well as GCSE Maths".

Professor Michael Reiss, of the Royal Society, said: "We cannot hope to succeed in life as individuals or as a nation if we do not have a good grasp of maths.

"Despite some encouraging recent signs, there is still a pressing need to improve the quality of mathematics education for primary school children.

"This interim report is to be welcomed as a significant step in the right direction. By placing teachers at its heart it has the potential to inspire teachers and in turn their pupils."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/uk_news/education/7306632.stm

Published: 2008/03/20 13:22:01 GMT

New Natural Family Planning Method Appeals To Wide Range Of Women

CycleBeads have been developed by Georgetown University researchers to help women manage their fertility. (Credit: Institute for Reproductive Health, Georgetown University Medical Center)

ScienceDaily (Mar. 21, 2008) — A study appearing in the March 2008 issue of the journal Contraception reports that the Standard Days Method®, a natural family planning method developed by researchers from Georgetown University Medical Center's Institute for Reproductive Health, brings new women to family planning. More than half the women who selected the Standard Days Method had never previously used family planning and on average, contraceptive use increased by 8 percent in communities where the method was introduced.

"This is the first study that looks at provision of a simple, modern method of natural family planning in regular service delivery rather than in a clinical trial. This distinction is important because clinical trials usually provide more training and provider-user contact than in typical family planning services," said study co-author Rebecka I. Lundgren, MPH, Deputy Director of the Institute for Reproductive Health. "We found that the Standard Days Method reached a group of women whose needs were not being met by existing services. Programs embraced the method as an additional choice because it is easy to use and to teach, it actually works in the real world," she said.

In a 2002 study, the Georgetown researchers found the Standard Days Method to be more than 95 percent effective and easy to use. To facilitate the use of the method, the researchers developed a color-coded string of beads called CycleBeads®. As a visual tool, CycleBeads helps a woman track her cycle, know if she is on a day when pregnancy is likely or not, and ensure her cycle length is in the range to use the method effectively.

In the new study, the most common reason study participants gave for choosing the Standard Days Method was that it "does not have side affects nor affect women's health". Participants also noted the low costs of CycleBeads. Although natural family planning methods are frequently associated with religious beliefs, relatively few women gave this reason for selecting the method.

Education level, number of children, previous use of modern family planning methods, and whether living in an urban or rural area did not appear to affect a woman's decision to use the Standard Days Method. While the new study reported that the general characteristics of Standard Days Method users varied widely, it did find that 55 percent had never before used any family planning method and few were switching from another effective method.

"One of the most interesting things we found in this study is how interested in and supportive of this method men are," said Victoria Jennings, Ph.D., Institute Director and professor of obstetrics and gynecology at Georgetown University Medical Center.

"These studies were conducted in a wide variety of cultural settings, but in all of them, men found the method easy to use and most stated that they planned to continue using the Standard Days Method and would recommend it to others."

The study, which was funded by the U.S. Agency for International Development, followed 1,646 women who elected to use the Standard Days Method at 14 sites in 6 countries. Women who chose the method were interviewed at several points during the study and their partners were interviewed at the end of the study. Service delivery settings ranged from maternity hospitals to community health services and included non-traditional healthcare providers as an agricultural cooperative and a program involved in water and sanitation.

In addition to Ms. Lundgren, co-authors of the study are James N. Gribble, ScD, of the Population Reference Bureau; Claudia Velasquez, MPH, of Georgetown University Medical Center's Institute for Reproductive Health; and Erin E. Anastasi, MPH, of the London School of Hygiene and Tropical Medicine. Both Dr. Gribble and Ms. Anastasi were formerly with the Institute for Reproductive Health.

Adapted from materials provided by Georgetown University Medical Center.

http://www.sciencedaily.com:80/releases/2008/03/080318104225.htm

Satellites Can Help Arctic Grazers Survive Killer Winter Storms

Reindeer graze on the Norwegian island of Spitsbergen in this 1992 photo. Many reindeer on Spitsbergen have starved to death because of rain-on-snow events, in the same way as musk oxen on Banks Island died by the thousands in 2003. (Credit: Jaakko Putkonen)

ScienceDaily (Mar. 21, 2008) — Rain falling on snow sounds like a relatively harmless weather event, but when it happens in the far north it can mean lingering death for reindeer, musk oxen and other animals that normally graze on the Arctic tundra.

That was the case in October 2003 on Canada's Banks Island, at the edge of the Beaufort Sea inside the Arctic Circle. Rain fell for several days on top of a 6-inch snow cover, and the rain seeped through the snow to the soil surface. The temperature then plunged and the water became a thick layer of ice that lasted the winter and prevented browsing animals from reaching their food supply of lichens and mosses at the soil's surface. Some 20,000 musk oxen starved to death.

"Starvation happened over a period of many months and no one knew until they went up to do the population count the next spring," said Thomas Grenfell, a University of Washington research professor of atmospheric sciences who has studied the Banks Island event.

Grenfell and Jaakko Putkonen, a UW research associate professor of Earth and space sciences, have found evidence of the 2003 rain-on-snow occurrence in passive satellite microwave imagery, which they believe could provide a signature to help detect such events anywhere. They detail their work in a paper to be published March 25 in Water Resources Research, a journal of the American Geophysical Union.

Their methods could provide native people, whose livelihood depends on hoofed animals such as musk oxen, reindeer and caribou with a realistic chance of getting food to the herds to prevent mass starvation.

"We are talking about Banks Island, but this applies to the whole Arctic -- Alaska, northern Canada, Siberia, Scandinavia -- wherever there is permafrost," Putkonen said.

Grenfell has conducted more than 40 field experiments in polar regions and has become quite familiar with precipitation characteristics there. Much of the previous work he did was with researchers who were interested in the nature of the snowpack, but he found that the presence of water interfered with interpreting satellite microwave readings.

But for the new research, the signal from water was key. Grenfell and Putkonen looked for patterns in satellite microwave data that correlated with rain-on-snow events. They examined data from 10 different satellite microwave channels, each providing slightly different information on the condition of the snowpack.

"The subtleties in the microwave levels mean there can be high error margins on this information, but the Banks Island event stood out like a sore thumb in the data," Grenfell said.

The researchers hope to examine other satellite microwave records in search of evidence of rain-on-snow events during the last 30 years that are known from anecdotal information.

The 2003 rain-on-snow event affected the northern part of the 43,000-square-mile Banks Island. The musk oxen population of 70,000 was cut by nearly 30 percent, but a caribou herd on the southern part of the island was unaffected. The closest weather station, about 60 miles from the musk oxen range, didn't record any rainfall at the time of the event that resulted in the massive die off, so few people recognized that the oxen were in distress.

Currently there is no way to know exactly where or how often these potentially devastating rain-on-snow events occur, the researchers say, but using satellite data to locate them could make up for a scarcity of weather stations in the sparsely populated Arctic.

Rain-on-snow events historically have occurred mostly in coastal areas. However, in earlier research Putkonen found that models predict that climate change will push winter rainfall much farther into northern continents and large islands.

While food shortages can trigger a large die off, there also can be severe consequences from milder events that force animals to exert more energy to get food. That reduces body weight and limits reproduction, which in turn can cause long-term damage to herds.

"Because the Arctic stays well below freezing for eight to 10 months of the year, the ice layer can stay around for months. If a rain-on-snow event happens in the fall, these animals can go the whole winter without access to food," Putkonen said. "The native people in the north depend on these animals for food and for many other things."

Adapted from materials provided by University of Washington.

http://www.sciencedaily.com/releases/2008/03/080318121552.htm

Rethinking Early Evolution: Earth's Earliest Animal Ecosystem Was Complex And Included Sexual Reproduction

Funisia dorothea seen branching in a fossil excavated in South Australia. (Credit: Droser lab, UC Riverside)

ScienceDaily (Mar. 20, 2008) — Two paleontologists studying ancient fossils they excavated in the South Australian outback argue that Earth's ecosystem has been complex for hundreds of millions of years -- at least since around 565 million years ago, which is included in a period in Earth's history called the Neoproterozoic era.

Until now, the dominant paradigm in the field of paleobiology has been that the earliest multicellular animals were simple, and that strategies organisms use today to survive, reproduce and grow in numbers have arisen over time due to several factors. These factors include evolutionary and ecological pressures that both predators and competition for food and other resources have imposed on the ecosystem.

But in describing the ecology and reproductive strategies of Funisia dorothea, a tubular organism preserved as a fossil, the researchers found that the organism had multiple means of growing and propagating -- similar to strategies used by most invertebrate organisms for propagation today.

Funisia dorothea grew in abundance, covering the seafloor, during the Neoproterozoic, a 100 million-year period ending around 540 million years ago in Earth's history, during which no predators were around. Mary Droser, one of the paleontologists involved in the study and a professor of Earth sciences at UC Riverside, first discovered the rope-resembling organism in 2005 near Ediacara, South Australia (the site of the excavations), and gave it its name (Funisia after "rope" in Latin; dorothea after Dorothy, Droser's mother).

"How Funisia appears in the fossils clearly shows that ecosystems were complex very early in the history of animals on Earth -- that is, before organisms developed skeletons and before the advent of widespread

predation," said Droser, who was joined in the research by James G. Gehling of the South Australia Museum.

Droser and Gehling observed that Funisia appears as 30 cm-long tubes in the fossils. They also observed that the tubes commonly occur in closely-packed groups of five to fifteen individuals, displaying a pattern of propagation that often accompanies animal sexual reproduction.

"In general, individuals of an organism grow close to each other, in part, to ensure reproductive success," said Droser, the first author of the research paper and the chair of the Department of Earth Sciences. "In Funisia, we are very likely seeing sexual reproduction in Earth's early ecosystem -- possibly the very first instance of sexual reproduction in animals on our planet."

According to Droser and Gehling, the clusters of similarly sized individuals of Funisia are strongly suggestive of "spats," huge numbers of offspring an organism gives birth to at once. Besides producing spats, the individual tubular organisms reproduced by budding, and grew by adding bits to their tips.

"Among living organisms, spat production results almost always from sexual reproduction and only very rarely from asexual reproduction," Droser said.

Rachel Wood, a paleontologist at the University of Edinburgh, United Kingdom, who was not involved in the research, said the finding shows that fundamental ecological strategies were already established in the earliest known animal communities, some 570 million years ago.

"The fact that Funisia shows close-packed growth on the sea floor allows us to infer that this organism also reproduced sexually, producing a limited number of larval spatfalls," she said. "This is how many primitive animals, such as sponges and corals, reproduce and grow today. So although we do not know the affinities of many of these oldest animals, we do know that their communities were structured in very similar ways to those that exist today."

Scientists believe that a clear picture of the early ecosystem on our planet can inform us how early life evolved, what it looked like, and how organisms respond to environmental and other changes.

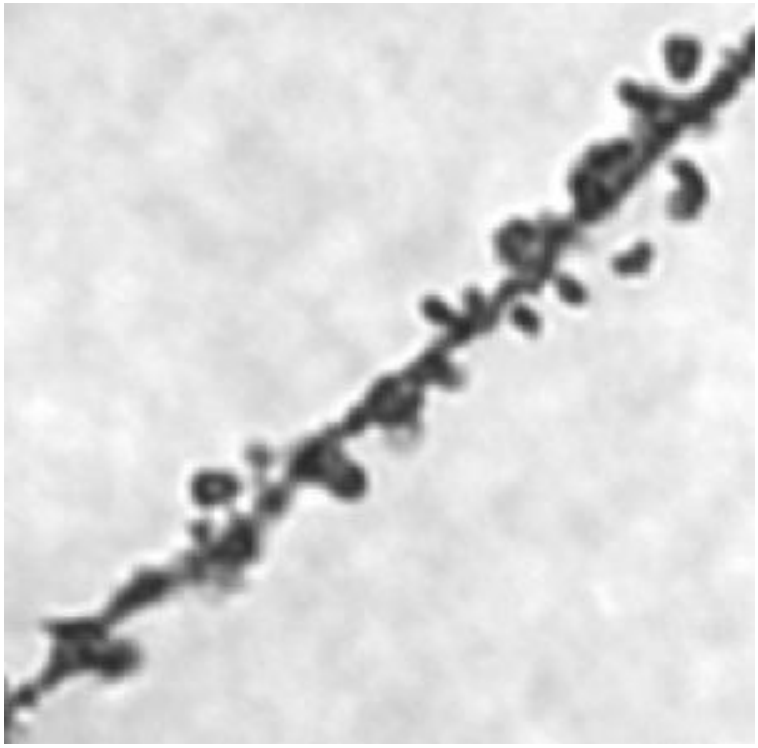
"The nature of the early ecosystem also clues us on what to look for on other planets in our search for extraterrestrial life," Droser said.

Study results appear in the March 21 issue of Science. The research was largely funded by the National Science Foundation. NASA provided additional support.

Adapted from materials provided by University of California - Riverside.

http://www.sciencedaily.com/releases/2008/03/080320150025.htm

Keeping The Brain Sharp: Stopping A Receptor Called 'Nogo' Boosts Synapses In Brain



Changing dendritic spines on a neuron -- evidence of brain rewiring. (Credit: Image courtesy of University of Rochester Medical Center)

ScienceDaily (Mar. 20, 2008) — New findings about a protein called the nogo receptor are offering fresh ways to think about keeping the brain sharp. Scientists have found that reducing the nogo receptor in the brain results in stronger brain signaling in mice, effectively boosting signal strength between the synapses, the connections between nerve cells in the brain. The ability to enhance such connections is central to the brain's ability to rewire, a process that happens constantly as we learn and remember.

The work ties together several research threads that touch upon the health benefits of exercise. While those benefits are broadly recognized, how the gains accrue at a molecular level has been largely unknown. The new research gives scientists a way to produce changes in the brain that mirror those brought about by exercise, by reducing the effect of the nogo receptor.

The find comes as a surprise, because for much of the last decade, the nogo receptor has been a prime target of researchers trying to coax nerves in the spinal cord to grow again. They named the protein after its ability to stop neurons from growing. Its action in the brain has not been a hot topic of study.

The find by neuroscientists at the University of Rochester Medical Center casts the nogo receptor in a new light. Instead of serving as a target for efforts at regrowing spinal nerve fibers -- indeed, the Rochester team showed last year that the molecule doesn't control that process -- the molecule suddenly has much broader implications for learning and memory.

"One of the central questions in neuroscience is -- what is the molecular and cellular basis of learning?" said Roman Giger, Ph.D., associate professor in the Department of Biomedical Genetics, who led the study. "The nogo receptor seems to play a role."

The receptor is a promiscuous molecule that hooks up with several other molecules which prevent the growth of neurons in the spinal cord. For most of this decade, scientists have worked to target the

molecule, thinking that if they could block it, they could possibly regenerate nerves, repairing spinal cord damage in a way that is impossible today.

But that road has proved difficult. Last year in the same journal, the Rochester team led by Giger showed that while the nogo receptor does play a role in preventing spinal nerves from growing, it does not control the process outright. While nogo receptor activation can transiently stunt the growth of neurons, it is not required for chronic outgrowth inhibition of injured nerve cells.

Giger's team has found that in some areas of the brain, such as the hippocampus, the nogo receptor is at least 10 times more prevalent than in the spinal cord.

In the brain, Giger's team found that the nogo receptor wields broad influence over a process known as neuroplasticity, which describes how our brain cells change and adapt constantly to meet our needs. It can be thought of simply as the brain's ability to rewire itself on the fly to meet the demands of an organism. The process explains why people are able to recover many of their abilities even after a traumatic brain injury or a stroke: Other brain cells pick up the work for the ones that have died.

Giger's team found that the nogo receptor plays an important role in changing the brain in two ways.

First, the molecule plays a completely unexpected role manipulating the strength of signals between brain cells in the synapses. A team led by Peter Shrager, Ph.D., professor of Neurobiology and Anatomy, made sophisticated measurements of the strengths of the signals as they passed from cell to cell in mice. They found that mutant mice with fewer nogo receptors than normal had stronger brain signaling, what scientists call "long-term potentiation.

The molecule also affected tiny structures known as dendritic spines, crucial connections that are extensions of the neuron and help cells "talk" to other cells. Mice with lots of the nogo receptor had a different mix of dendritic spines than normal mice. In the hippocampus, the mutant mice had fewer mushroom-shaped dendritic spines and more stubby and thin spines than the other mice. Scientists don't yet know the ramifications of the change, but they say it's firm evidence that the nogo receptor has effects on the anatomic structure of the brain. Creation and removal of dendritic spines is an important form of brain rewiring.

The team attributes much of the effects of the nogo receptor to its ability to strongly bind to a growth factor known as FGF2 (fibroblast growth factor 2), which in the brain and other parts of the central nervous system nourishes neurons, allowing them to branch out and grow new sprouts. When the nogo receptor is present in abundance, it binds to FGF2 molecules, and as a result neurons no longer branch and sprout as they otherwise would.

Altogether, the findings show that the nogo receptor has a broad impact on processes in the brain that underlie learning and memory, said Giger.

"It's known that changes in synaptic strength can lead to rewiring of the nervous system in such a way that we can compensate for mild to moderate injuries," said Giger, who is a scientist in the Center for Neural Development and Disease. "Enhancing synaptic plasticity can partially counter the effects of an injury like stroke, or traumatic brain injury. Really, the process happens routinely in many stroke patients -- it's what makes rehabilitation after stroke possible."

Much of the same type of rewiring also happens as a result of exercise. Scientists have shown that exercise improves the brain's neuroplasticity, boosting the brain's ability to sprout new structures and send crisp signals, which in turn helps people recover from injuries to the central nervous system. And recently, researchers at the Karolinska Institute in Stockholm showed that exercise reduces the abundance of the nogo receptor in the brain. Giger's work provides a molecular framework that brings the disparate findings together.

The findings could also explain something that has puzzled scientists, said Giger. Mice with damaged spinal cords that have been treated with compounds designed to knock out the nogo receptor seem to improve a bit, even though scientists have never been able to demonstrate nerve regrowth in those mice. It may be that their improvement instead is coming through the signal-boosting effect in the synapses.

While it's tempting to think that knocking down the nogo receptor is a simple process that would help people under all circumstances by boosting their brain power, Giger points out that the molecule is not only found at synapses but also along axons, where scientists believe it plays an important role limiting the sprouting of nerve fibers. Any effort to reduce the nogo receptor will have to be studied thoroughly to watch for other effects.

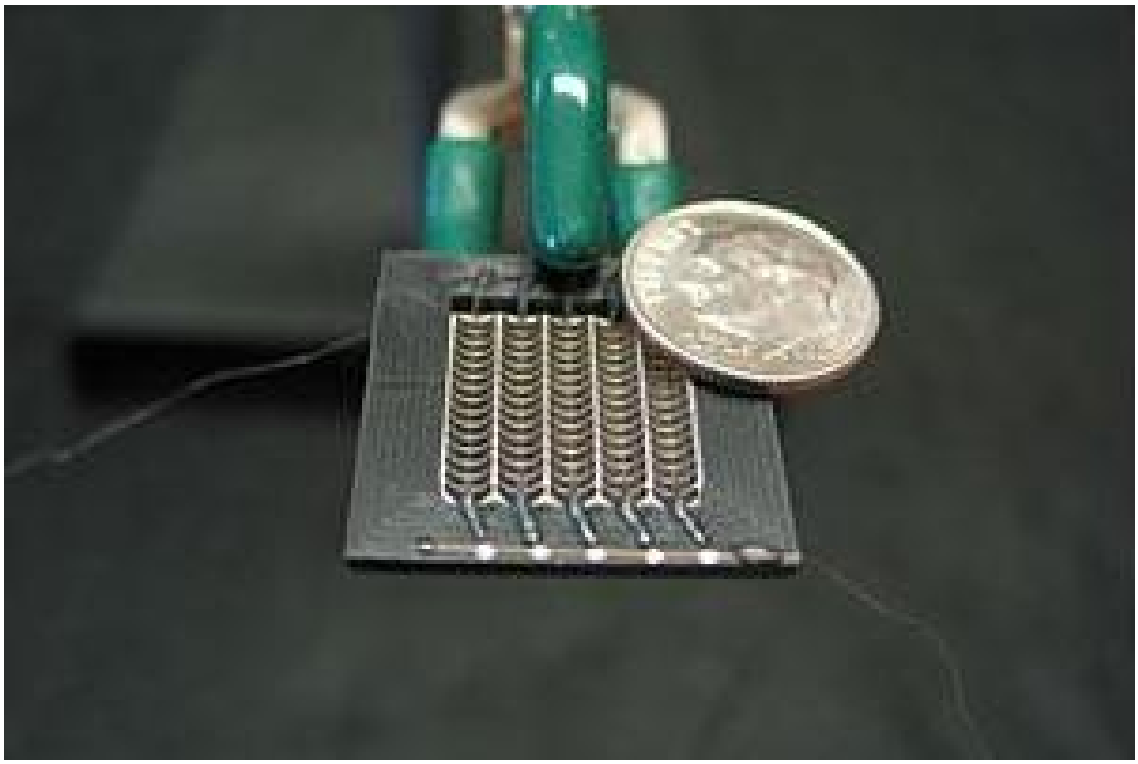
The findings are in the March 12 issue of the Journal of Neuroscience. While Giger headed the project, much of the research was done in equal part by the two first authors, Research Assistant Professor Hakjoo Lee, Ph.D., and graduate student Stephen Raiker. Other authors include former graduate student Karthik Venkatesh, Ph.D., now at the University of Michigan; former Professor Hermes Yeh, Ph.D., now at Dartmouth; technician Rebecca Geary; graduate student Laurie Robak; and Yu Zhang, Ph.D., now a research assistant professor in the Department of Neurosurgery.

The work was funded by the National Institute of Neurological Disorders and Stroke, the New York State Spinal Cord Injury Research Program, and the Dr. Miriam and Sheldon G. Adelson Research Medical Foundation's Adelson Program in Neural Repair and Rehabilitation.

Adapted from materials provided by University of Rochester Medical Center.

http://www.sciencedaily.com/releases/2008/03/080318104212.htm

Silent Tiny Cooling Systems Made For Laptop Computers, Other Devices



Researchers have developed a new micro-fan only slightly larger than a dime. The new fan can generate winds on the same scale as a laptop computer fan, but uses far less energy and should require far less maintenance. (Credit: Dan Schlitz and Vishal Singhal, Thorrn Micro Technologies)

ScienceDaily (Mar. 20, 2008) — Engineers harnessing the same physical property that drives silent household air purifiers have created a miniaturized device that is now ready for testing as a silent, ultra-thin, low-power and low maintenance cooling system for laptop computers and other electronic devices.

The compact, solid-state fan, developed with support from NSF's Small Business Innovation Research program, is the most powerful and energy efficient fan of its size. It produces three times the flow rate of a typical small mechanical fan and is one-fourth the size.

Dan Schlitz and Vishal Singhal of Thorrn Micro Technologies, Inc., of Marietta, Ga. will present their RSD5 solid-state fan at the 24th Annual Semiconductor Thermal Measurement, Modeling and Management Symposium (Semi-Therm) in San Jose, Calif., on March 17, 2008. The device is the culmination of six years of research that began while the researchers were NSF-supported graduate students at Purdue University.

"The RSD5 is one of the most significant advancements in electronics cooling since heat pipes. It could change the cooling paradigm for mobile electronics," said Singhal.

The RSD5 incorporates a series of live wires that generate a micro-scale plasma (an ion-rich gas that has free electrons that conduct electricity). The wires lie within un-charged conducting plates that are contoured into half-cylindrical shape to partially envelop the wires.

Within the intense electric field that results, ions push neutral air molecules from the wire to the plate, generating a wind. The phenomenon is called corona wind.

"The technology is a breakthrough in the design and development of semiconductors as it brings an elegant and cost effective solution to the heating problems that have plagued the industry," said Juan Figueroa, the NSF SBIR program officer who oversaw the research.

With the breakthrough of the contoured surface, the researchers were able to control the micro-scale discharge to produce maximum airflow without risk of sparks or electrical arcing. As a result, the new device yields a breeze as swift as 2.4 meters per second, as compared to airflows of 0.7 to 1.7 meters per second from larger, mechanical fans.

The contoured platform is a part of the device heat sink, a trick that enabled Schlitz and Singhal to both eliminate some of the device's bulk and increase the effectiveness of the airflow.

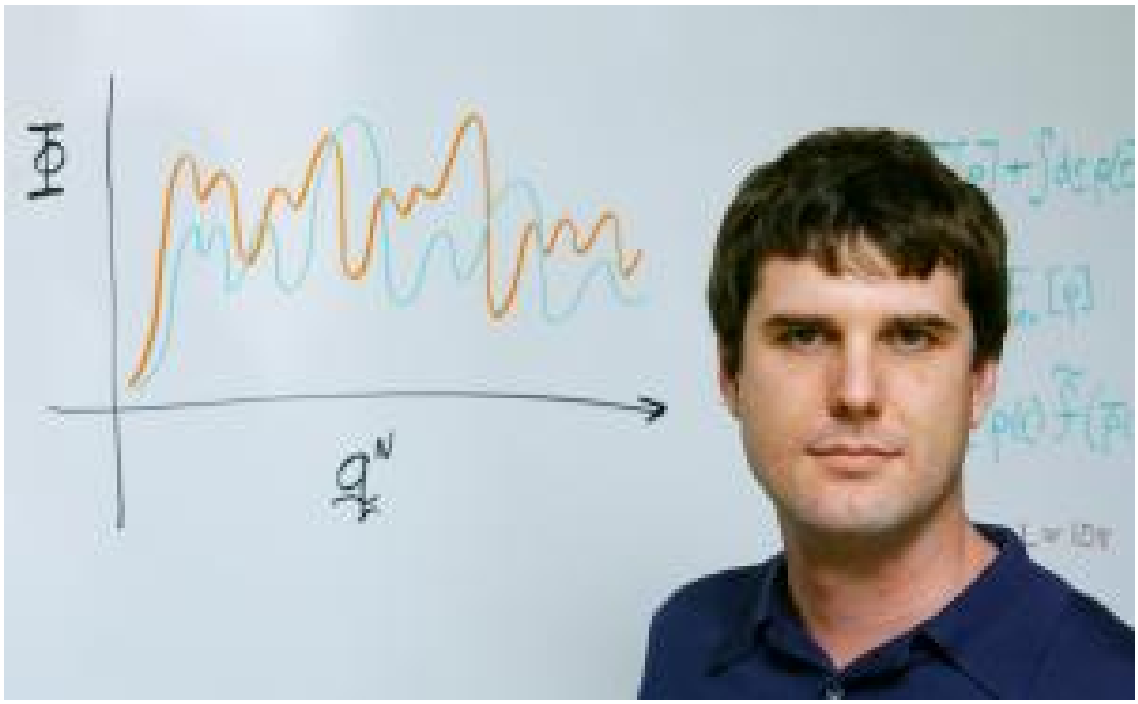
"The technology has the power to cool a 25-watt chip with a device smaller than 1 cubic-cm and can someday be integrated into silicon to make self-cooling chips," said Schlitz.

This device is also more dust-tolerant than predecessors. While dust attraction is ideal for living-room-scale fans that that provide both air flow and filtration, debris can be a devastating obstacle when the goal is to cool an electrical component.

Adapted from materials provided by National Science Foundation.

http://www.sciencedaily.com/releases/2008/03/080318110327.htm

Chemical Engineers Discover New Way To Control Particle Motion



Dr. Thomas Truskett. (Credit: Image courtesy of University of Texas at Austin)

ScienceDaily (Mar. 20, 2008) — Chemical engineers at The University of Texas at Austin have discovered a new way to control the motion of fluid particles through tiny channels, potentially aiding the development of micro- and nano-scale technologies such as drug delivery devices, chemical and biological sensors, and components for miniaturized biological "lab-on-a-chip" applications.

The researchers learned that particle motion is strongly linked to how the particles arrange themselves in a channel.

“Particle arrangements are determined by the interactions of the particles with their boundaries. Thus, we were able to use these interactions as a means for controlling how readily the fluid will self-mix, diffuse, and flow,” said Dr. Thomas Truskett, associate professor of chemical engineering at the university.

The research by Ph.D. students Gaurav Goel, William Krekelberg and Truskett at the university along with Dr. Jeffrey Errington of the State University of New York at Buffalo, appears in the March 21 issue of the journal Physical Review Letters.

Civic planners and schoolteachers have long appreciated that the motion of cars on highways or children through hallways proceeds smoothly if lanes of traffic are formed. Truskett's research team found that a similar principle applies for the motion of fluid particles in narrow channels. Specifically, their computer simulations reveal that fluid particles move past one another more easily if they first form "layers" aligned with the boundaries of the channels.

The team has also introduced a way to systematically determine which types of channel boundaries will promote or frustrate the formation of the layers necessary for faster particle transport.

If layering leads to faster particle dynamics, it is natural to ask why bulk fluids adopt a more disordered structure with no layering, said Truskett.

"The reason: thermodynamics determines the structure of a fluid, not dynamics - and thermodynamics favors a disordered state for bulk fluids because it lowers the system's free energy," he said.

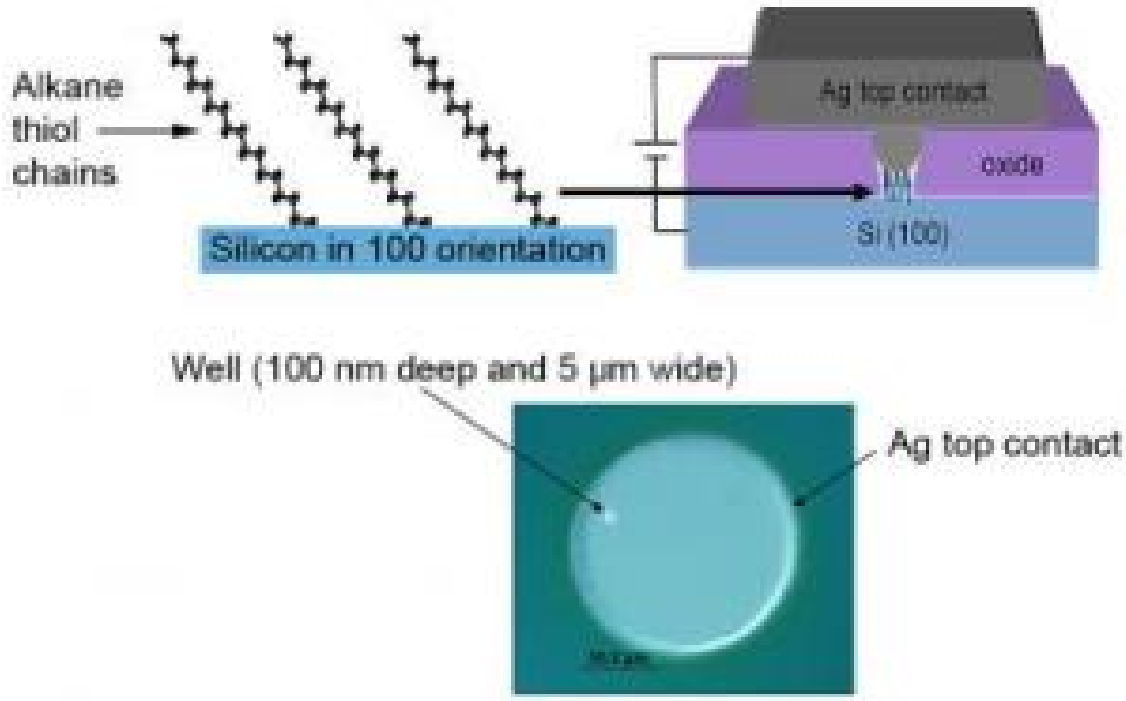
The Truskett team determined that confining a fluid to small length scales allowed them to tune the thermodynamically-favored state to coincide with one that has layering and fast particle dynamics.

Truskett's latest research is funded by grants from the David and Lucile Packard Foundation, the Alfred P. Sloan Foundation, and the National Science Foundation. The Texas Advanced Computing Center and the University at Buffalo Center for Computational Research provided computational resources for this study.

Adapted from materials provided by University of Texas at Austin.

http://www.sciencedaily.com/releases/2008/03/080317150237.htm

Bridge From Conventional To Molecular Electronics Possible



Side and top views of the NIST molecular resistor. Above are schematics showing a cross-section of the full device and a close-up view of the molecular monolayer attached to the CMOS-compatible silicon substrate. Below is a photomicrograph looking down on an assembled resistor indicating the location of the well. (Credit: NIST)

ScienceDaily (Mar. 20, 2008) — Researchers at the National Institute of Standards and Technology (NIST) have set the stage for building the "evolutionary link" between the microelectronics of today built from semiconductor compounds and future generations of devices made largely from complex organic molecules. In an upcoming paper in the Journal of the American Chemical Society,* a NIST team demonstrates that a single layer of organic molecules can be assembled on the same sort of substrate used in conventional microchips.

The ability to use a silicon crystal substrate that is compatible with the industry-standard CMOS (complementary metal oxide semiconductor) manufacturing technology paves the way for hybrid CMOS-molecular device circuitry--the necessary precursor to a "beyond CMOS" totally molecular technology--to be fabricated in the near future.

Scientists classify crystal structures by the particular plane or "face" cutting through the crystal that is exposed. Most research to date on silicon substrates for molecular electronic devices has been done with a crystal orientation that is convenient for organic molecules but incompatible with CMOS technologies. For their electronic device, the NIST team first demonstrated that a good quality monolayer of organic molecules could be assembled on the silicon orientation common to industrial CMOS fabrication, verifying this with extensive spectroscopic analysis.

They then went on to build a simple but working molecular electronic device--a resistor--using the same techniques. A single layer of simple chains of carbon atoms tethered on their ends with sulfur atoms were deposited in tiny 100-nanometer deep wells on the silicon substrate and capped with a layer of silver to form the top electrical contact. The use of silver is a departure from other molecular electronic studies where gold or aluminum has been used. Unlike the latter two elements, silver does not displace the monolayer or impede its ability to function.

The NIST team fabricated two molecular electronic devices, each with a different length of carbon chain populating the monolayer. Both devices successfully resisted electrical flow with the one possessing longer chains having the greater resistance as expected. A control device lacking the monolayer showed less resistance, proving that the other two units did function as nonlinear resistors.

The next step, the team reports, is to fabricate a CMOS-molecular hybrid circuit to show that molecular electronic components can work in harmony with current microelectronics technologies.

This work was funded in part by the NIST Office of Microelectronics Programs and the Defense Advanced Research Projects Agency (DARPA) MoleApps Program.

* N. Gergel-Hackett, C.D. Zangmeister, C.A. Hacker, L.J. Richter and C.A. Richter. Demonstration of molecular assembly on Si (100) for CMOS-compatible molecular-based electronic devices. Journal of the American Chemical Society, Vol. 130, No. 13 (April 2, 2008), pp 4259-4261. Published online March 7, 2008.

Adapted from materials provided by National Institute of Standards and Technology.

http://www.sciencedaily.com/releases/2008/03/080318182724.htm

Arctic Pollution's Surprising History: Explorers Saw Particulate Haze In Late 1800s

Hazy sunrise on the frozen tundra of Baffin Island, Canada. (Credit: iStockphoto/Ryerson Clark)

ScienceDaily (Mar. 21, 2008) — Scientists know that air pollution particles from mid-latitude cities migrate to the Arctic and form an ugly haze, but a new University of Utah study finds surprising evidence that polar explorers saw the same phenomenon as early as 1870.

"The reaction from some colleagues -- when we first mentioned that people had seen haze in the late 1800s -- was that it was crazy," says Tim Garrett, assistant professor of meteorology and senior author of the study. "Who would have thought the Arctic could be so polluted back then? Our instinctive reaction is to believe the world was a cleaner place 130 years ago."

By searching through historic records written by early Arctic explorers, Garrett and his collaborator Lisa Verzella, former undergraduate student at the University of Utah, were able to find evidence of an aerosol "dry haze" that settled onto the ice to form a layer of grayish dust containing metallic particles. The haze and dust were likely the byproducts of smelting and coal combustion generated during the Industrial Revolution.

"We searched through open literature, including a report in the second issue of the journal Science in 1883 by the famous Swedish geologist Adolf Erik Nordenskiold, who was the first to describe the haze," says Garrett. "We also looked through books describing Arctic expeditions that had to be translated from Norwegian and French."

The historic accounts show that more than 130 years ago, the Industrial Revolution was "already darkening the snow and skies of the far North," Garrett says.

History of Arctic Pollution

Garrett and Verzella say the first report of Arctic haze pollution usually is credited to a U.S. Air Force meteorologist J. Murray Mitchell, who in 1957 described "the high incidence of haze at flight altitudes"

during weather reconnaissance missions from Alaska over the Arctic Ocean during the late 1940s and 1950s.

Mitchell was credited in the 1970s by Glenn Shaw from the University of Alaska, Fairbanks, and his collaborators Kenneth Rahn and Randolf Borys, from the University of Rhode Island, who were the first to discover the haze contained high levels of heavy metals, including vanadium, suggestive of heavy oil combustion.

In a later study, Rahn and Shaw said: "Arctic haze is the end product of massive transport of air pollution from various mid-latitude sources to the northern polar regions, on a scale that could never have been imagined, even by the most pessimistic observer."Since humans had been generating aerosol pollution long before 1950 -- namely, since sometime after the advent of the Industrial Revolution in the late 1700s -- it made sense to Garrett that pollution generated from earlier times also might have made it to northern latitudes from Europe, Asia and North America.

"I thought that pollution had to be observed in the Arctic prior to 1950, so I decided to find out if that was true," says Garrett. So he hired Verzella to search historic records to determine if there was written evidence of early Arctic pollution.Verzella found a number of published reports from the late 1800s to early 1900s that mention a whitish haze in the sky, or a gray or black dust on the ice. But Nordenskiold "was the first to explicitly draw attention to the haze phenomenon" during his 1883 expedition to Greenland, the researchers concluded.

Even during an earlier expedition in 1870, Nordenskiold observed "a fine dust, gray in color, and, when wet, black or dark brown, is distributed over the inland ice in a layer which I should estimate at from 0.1 to 1 millimeter."He found that the dust contained "metallic iron, which could be drawn out by the magnet, and which, under the blowpipe, gave a reaction of cobalt and nickel." He believed it to be a "cosmic dust" possibly from meteors. However, the concentration of metallic iron, nickel and cobalt made it much more likely that the origin was industrial pollution generated at mid-latitudes.

Last year, other researchers found that the dust is present in ice core samples. "Recent Greenland ice cores show a rapid rise in anthropogenic soot and sulfate that began in the late 1800s, but with peak sulfate levels in the 1970s, and peak soot between 1906 and 1910," Garrett and Verzella say in their study. A higher composition of sulfate suggests oil combustion, while higher soot suggests coal combustion, consistent with the main sources of pollution generated in the 20th versus 19th centuries.

Early Arctic Warming

In a 2006 study, Garrett concluded that particulate pollution from mid-latitudes aggravates global warming in the Arctic. Did it do the same back in the 1800s?

"It is reasonable that the effect of particulate pollution on Arctic climate may have been greater 130 years ago than it is now, because during the Industrial Revolution, technologies were dirtier than they are now," says Garrett. "Of course, today carbon dioxide emissions are greater and have accumulated over the last century, so the warming effect due to carbon dioxide is much greater today than 100 years ago."

In fact, after fossil-fuel combustion became more efficient in the mid-1900s, the levels of particulate pollution in the Arctic dropped dramatically from levels earlier in the century. However, Garrett believes that we might be seeing another increase due to higher emissions from developing industrial countries such as China.The study will be published in the March 2008 issue of the Bulletin of the American Meteorological Society.

Adapted from materials provided by University of Utah.

http://www.sciencedaily.com:80/releases/2008/03/080319085406.htm

Rice Breeding: Highly Specific Gene Silencing Successful In Rice

ScienceDaily (Mar. 21, 2008) — Imagine you are a rice breeder and one day within a large field you discover a plant that has just the characteristics you have been looking for. You happily take your special plant to the laboratory where you find out that the spontaneous, beneficial event was due to inactivation of a single gene. This is a great observation; however, there are many different strains grown in different parts of the world, well adapted to the particular region they grow in. How can you now transfer the inactivated gene to other strains of rice?

Conventionally, you would have to go through years and years of breeding, until you have successfully transferred that single gene, without affecting all the other genes that are responsible for the target strains being so well adapted to their local environment. Would it not be great, if one could do this faster?

Using inactivated genes for rice breeding might sound far-fetched, but is not unusual. For example, the main change enabling the green revolution in rice resulted from loss of a gene that normally makes rice grow tall (and hence prone to toppling over if a plant makes many heavy rice grains). Thus, transferring inactivated genes is something rice breeders are indeed very much interested in.

Researchers at the Max Planck Institute (MPI) for Developmental Biology in Tübingen, Germany in collaboration with the International Rice Research Institute in the Philippines, have now generated a tool that should greatly speed up this particular aspect of rice breeding: A team led by Norman Warthmann (MPI) successfully demonstrated highly specific gene silencing using so-called artificial miRNAs in rice (Oryza sativa).

MicroRNAs are 20-22 bp long RNA molecules. In animals as well as in plants they have important functions in regulating gene activity. In plants, they cause highly specific degradation of sequence-matched messenger RNAs, which encode enzymes, regulatory factors or other proteins. The end effect is that the corresponding gene is silenced. With artificial miRNAs (amiRNAs), this natural silencing pathway can be harnessed to inactivate genes of interest to the breeder, with unprecedented specificity.

Detlef Weigel's research group at the Max Planck Institute in Tübingen had initially pioneered this technique in the model plant Arabidopsis thaliana. The plethora of potential applications in agriculture now motivated them to try the method in rice. One of the rice genes they targeted is called Eui1. When Eui1 is inactive, flowers tend to be fertilized by pollen from other plants, rather than being self-fertilized. While this trait, which essentially means male sterility, would be harmful to a wild rice plant, breeders use this genetic trick for hybrid seed production.

Originally identified as a spontaneous mutant in a japonica rice variety, the eui1 mutation was introduced into indica varieties by several years of breeding. With an artificial miRNA targeting the Eui1 messenger RNA, the researchers at the International Rice Research Institute obtained within weeks plants with the desired property in two different rice varieties, including the agronomically important indica variety IR64, the most commonly grown strain in South-East Asia. Similarly, the researchers also report successful silencing of two other genes, Pds and SPl11.

Besides allowing the quick transfer of reduced gene function between different varieties, artificial miRNAs also accelerate the initial identification of important genes and the discovery of functions of genes that have not been studied before. Potential applications in rice breeding are manifold and they don't stop at rice genes. By targeting pathogen-derived genes, for example, it should be possible to enhance virus and insect resistance. In addition, because they act dominantly, they are also perfectly suited for hybrid breeding.

MiRNAs have been found in all plant species examined so far. It should hence be possible to adapt the technique of gene silencing by artificial miRNAs to other crops and it may provide an important new avenue to enhance agronomic performance and nutritional value. Computer software to design the required oligonucleotide sequences and detailed protocols to produce amiRNAs are provided free of charge. Similarly, the artificial miRNA vector is provided free of charge to colleagues.

Journal reference: Warthmann N, Chen H, Ossowski S, Weigel D, Hervé P (2008) Highly Specific Gene Silencing by Artificial miRNAs in Rice. PLoS One 3(3): e1829. doi:10.1371/journal.pone.000182

Co-authors on the study include: Norman Warthmann, Stephan Ossowski, Detlef Weigel (Max Planck Institute for Developmental Biology, Tübingen, Germany) and Hao Chen, Philippe Hervé (International Rice Research Institute, Los Baños, Philippines).

Adapted from materials provided by Public Library of Science, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/03/080319093106.htm

New Family Of Superconductors Discovered

Dr. John Tse and colleagues in Germany have identified a new family of superconductors -- research that could eventually lead to the design of better superconducting materials for a wide variety of industrial uses. (Credit: Image courtesy of University of Saskatchewan)

ScienceDaily (Mar. 21, 2008) — University of Saskatchewan Canada Research Chair John Tse and colleagues in Germany have identified a new family of superconductors – research that could eventually lead to the design of better superconducting materials for a wide variety of industrial uses.

In an article published in the journal Science, the team has produced the first experimental proof that superconductivity can occur in hydrogen compounds known as molecular hydrides.

“We can show that if you put hydrogen in a molecular compound and apply high pressure, you can get superconductivity,” said Tse. “Validation of this hypothesis and understanding of the mechanism are initial steps for design of better super-conducting materials.”

Superconductors conduct electricity without creating friction or heat loss. An electric current can therefore flow in a loop of superconducting wire indefinitely with no power source. Examples of existing superconducting materials include magnets used in MRI machines and the magnets that enable high-speed trains to float above the track without friction or energy loss as heat.

Team member Mikhail Eremets of the Max Plank Institute in Germany did the laboratory work in detecting superconductivity in the hydrogen compound silane, while Tse and his graduate student Yansun Yao provided the theoretical basis for understanding the mechanism involved and identified the key chemical structures.

Most commercial superconducting materials have to operate at very low temperatures which requires expensive super-cooling equipment.

"Our research in this area is aimed at improving the critical temperature for superconductivity so that new superconductors can be operated at higher temperatures, perhaps without a refrigerant," said Tse.

It has long been hypothesized that hydrogen, the simplest of the elements, may be able to conduct electricity without creating friction or heat loss (superconductive behavior) if it's compressed into a very dense solid form. Though many researchers have tried using pure hydrogen, they have not been able to achieve the necessary hydrogen density to produce superconductivity.

Instead of using pure hydrogen, the Germany-Canada team, following an earlier suggestion by Prof. Neil Ashcroft at Cornell University, compressed hydrogen-rich molecules (hydrides). They were able to reach the necessary density for superconductivity at much lower pressure than with pure hydrogen – an achievement that will shed greater understanding on the fundamental nature of superconductivity.

The U of S work, funded by NSERC and the Canada Research Chairs program, involved extensive calculations – some taking as long as a month – at the WestGrid computing facility and with the Canada Foundation for Innovation-funded high-performance computing facility at the U of S.

In related research, Tse's team is using the Canadian Light Source synchrotron to study high pressure structures of other hydrides systems on potential superconductivity and making use of them to store hydrogen for fuel cells.

Adapted from materials provided by University of Saskatchewan.

http://www.sciencedaily.com/releases/2008/03/080318223250.htm

Killer Stairs? Taking The Elevator Could Be Worse For Your Body

Killer stairs? Taking the elevator could be worse for your body. Researchers found that a reduction in daily physical activity is an actual cause of many of the risk factors for chronic diseases, including diabetes and cardiovascular disease. (Credit: iStockphoto/Kieran Mithani)

ScienceDaily (Mar. 21, 2008) — For years, scientists have been proclaiming the benefits of exercise. Studies showing that regular exercise benefits human health have exploded in number, examining many health problems ranging from cancer and diabetes to arthritis and pre-mature death.

Now, a University of Missouri researcher has found direct evidence to support the claim of the Centers for Disease Control that a reduction in daily physical activity is an actual cause of many of the risk factors for chronic diseases, including diabetes and cardiovascular disease. The research team also found that it only takes about two weeks of reduced activity for individuals to start noticing the effects.

"A low level of daily physical activity not only doesn't help your current health status, it could be the reason you got sick in the first place," said Frank Booth, professor of biomedical sciences in the MU College of Veterinary Medicine. "Our study looked at what happened when a group of individuals reduced their daily physical activity. Our findings indicated that if there is a lack of normal physical activity, a person greatly increases the chances of developing a chronic disease. Previously, we thought that not exercising just wasn't healthy, but we didn't think that a lack of activity could cause disease. That assumption was wrong."

Booth and researchers at the University of Copenhagen conducted two different studies in Copenhagen. In the first study, participants were asked to reduce the amount of steps they took per day from 6,000 to 1,400 for three weeks. Instead of walking or taking the stairs, participants were instructed to use motorized transportation, such as a car or elevator, in every situation possible.

The second study asked participants who were more active, averaging 10,000 steps per day, to reduce their activity to 1,400 steps per day for two weeks. The number of steps the average American adult takes per day is 7,473, although Americans who are inactive typically take about 2,100 steps each day.

At the end of each study, participants were administered a glucose tolerance test or a fat tolerance test, or both. These tests measure how fast the body is able to clear glucose or fat from the blood stream. The researchers found that after two weeks of no exercise and very little activity, participants had much higher levels of glucose and fat and took a much longer time to clear the substances from their blood streams than before. The longer it takes the body to clear the blood stream of the substances, the higher the likelihood that a person will develop diabetes or other chronic diseases.

"We used to think that it is healthy to be physically active, but this study shows that it is dangerous to be inactive for just a couple of weeks," said Bente Klarlund Pedersen, co-author and lead investigator of the study and professor of internal medicine and director of Centre of Inflammation and Metabolism at the University of Copenhagen. "After 14 days of reduced stepping, subjects experienced accumulation of the dangerous abdominal fat, while also developing elevated blood-lipids, a sign of -pre-diabetes and cardiovascular disease. If you choose the passive mode of transport and abstain from exercise, than your risk of chronic disease is likely to increase markedly."

"When the doctor says to go and exercise, they are not just telling patients to do that to improve their health; increasing daily stepping could actually reverse a cause of chronic disease," Booth said. "When extra fats and sugars (glucose) don't clear the bloodstream, they go where we don't want them and cause problems for our bodies' typical metabolic functions."

The researchers also found that the total skeletal and muscle mass in the body decreased when activity decreased. Booth says that longer studies are needed to help answer more questions about the detrimental effects of long-term physical inactivity.

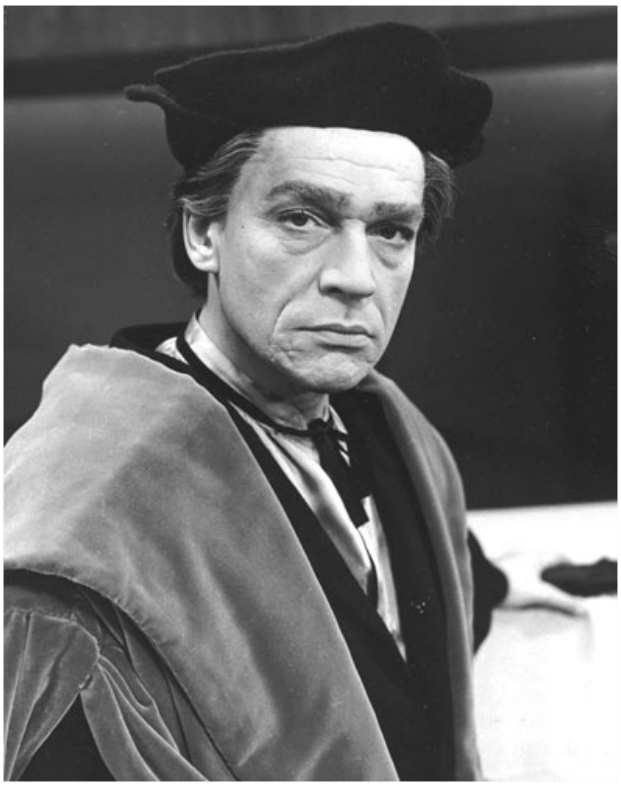
The study is being published in the Journal of the American Medical Association (JAMA) the week of March 18.

Adapted from materials provided by University of Missouri-Columbia.

http://www.sciencedaily.com/releases/2008/03/080318182741.htm

A British Dynasty for All Seasons

By CHARLES McGRATH



Among the many things for which he will be remembered, Paul Scofield, who died on Wednesday at 86, helped to usher in a whole era of classy, lushly produced costume films set in the Tudor period. He made the 16th century seem glamorous.

Mr. Scofield actually preferred stage to screen and appeared in relatively few movies for an actor of his age and stature — some 30 or so, compared, say, to well over a hundred made by his colleague John Gielgud. And he is known mostly for just one, "A Man for All Seasons," based on the Robert Bolt play, in which he was the title character, Sir Thomas More, the scrupulous, upright Roman Catholic chancellor of Henry VIII, who went to his death rather than acknowledge the king's claim to be the supreme head of the Church of England.

"A Man for All Seasons," which came out in 1966, is a movie of a sort they don't make anymore: smart, literate and, by today's standards, a little earnest. Schools organized field trips so that students could be bused to see it, and it earned a huge popular following as well. It won Academy Awards for best director and best picture, and Mr. Scofield picked up the Oscar for best actor. There were also Oscars for best adapted screenplay, best costumes and best cinematography.

"A Man for All Seasons" was so evocative and so good-looking — and such a draw at the box office — that it spawned dozens of imitations. For a while you could hardly go to the movies or turn on highbrow television without seeing people in doublets, hose and ruffs, writing with quills. You would have thought the appeal would be worn out by now, but decades later our fascination with Henry and his wives, if not with More, oddly persists. We know some of this stuff better than our own history.

The first of the high-profile Tudor knockoffs was "Anne of the Thousand Days" (1969), like "A Man for All Seasons" based on a play — by Maxwell Anderson in this case. It starred Richard Burton, in one of his better movie performances, as Henry VIII, and Geneviève Bujold, then practically unknown outside French Canada, as Anne Boleyn. More, grumpy and scowling, has barely a walk-on part here. This is a movie about the king and his love life, and it has Anne first spurning his advances and then pining for him when it's too late.

The historian Antonia Fraser has complained that it's a cross between "The Taming of the Shrew" and "Gone With the Wind." "Anne of the Thousand Days" is hugely entertaining nonetheless, and it adds a crucial insight to the Tudor genre: that dramatic confrontations between the king and More, Cardinal Wolsey, Thomas Cromwell and the rest are all well and good, but for sustained interest you can't beat scenes in the royal bedchamber.

Next in the dynasty was the BBC series "The Six Wives of Henry VIII" — a six-parter, naturally, with one episode for each wife — which appeared on CBS in 1971 and was rebroadcast the following year as part of the inaugural season of "Masterpiece Theater." Another "Masterpiece" mini-series that season was "Elizabeth R," starring a fierce and eventually half-bald Glenda Jackson, which could be said to have set

into motion an entire Tudor subindustry: films and series about Boleyn's daughter, among them the two Cate Blanchett "Elizabeth" movies and Helen Mirren's 2005 portrayal of the queen who was the namesake of the one she earned an Academy Award for playing a couple of years later, in "The Queen."

Meanwhile, Henry, Anne, Wolsey, More et al. are back in the Showtime series "The Tudors," whose second season begins March 30. And still playing in a few movie theaters is "The Other Boleyn Girl" — about a supposed rivalry between Anne and her sister, Mary — written by Peter Morgan, who also wrote "The Queen." The creator and writer of "The Tudors" is Michael Hirst, who earlier wrote both of the Blanchett biopics. (Keeping track of all this is a little like keeping track of the royal lineage.)

It makes sense that the Tudors would be popular entertainment in England, where they are after all a crucial part of national history, and where schoolchildren are still taught a little mnemonic to keep straight the fate of Henry's various spouses: "Divorced, beheaded, died, divorced, beheaded, survived." But what accounts for their apparent hold on the American imagination?

The sets and costumes, those low bodices and creamy bosoms, certainly don't hurt. And in the case of More, his insistence on justice and the individual conscience as opposed to the whims of a tyrant obviously struck a chord here.

Henry appeals for a different reason, perhaps. His largeness, his excess, his lusts, his multiple marriages, make him seem — well, one of us; someone not about to let some niggling lawyers stand in the way of what he wants.

Of all the Henrys, the current one, Jonathan Rhys Meyers, the star of the Showtime series, is the most curious. Unlike the original, who in his mid-40s, not long after he began courting Anne Boleyn, injured his leg in a fall from a horse and quickly grew stout from indolence — four and a half feet around by some measurements — this Henry is a gym rat, buff and energetic. On the other hand, you'd never know on Showtime that Henry was thought a great humanist, a poet and musician and brilliant diplomat. He's more like a brooding, sulky rock star. (It was surely not a blot on his résumé that Mr. Rhys Meyers once played Elvis on a CBS mini-series.)

Henry's real intellectual antagonist in "The Tudors" is the scheming, worldly wise Wolsey, played by Sam Neill. More is hardly a match at all, played by Jeremy Northam, who is no Scofield, except perhaps in being taller than everyone else at court. He is blandly good-looking, without Mr. Scofield's granitelike visage and magisterial voice, and his part is underwritten.

This court, unlike that of "A Man for All Seasons," thrives not on debate but on the more combustible fuel of power and sex, which may not have been entirely alien to the historical More, whom early Protestant enemies considered far less saintly than Robert Bolt did. The real More wore a hair shirt to curb his own lust and, it is sometimes said, took excessive delight in torturing heretics.

In essential respects he was a person much more of his own season than of ours, but in any case he is a tragic reminder of another reason the Tudor period so fascinates us. It's a scary example of what happens when religion and politics appeal to and exploit each other.

http://www.nytimes.com/2008/03/22/movies/22tudo.html?_r=1&th&emc=th&oref=slogin

Fleeting Pleasures of Life in Vibrant Woodcut Prints

By KEN JOHNSON

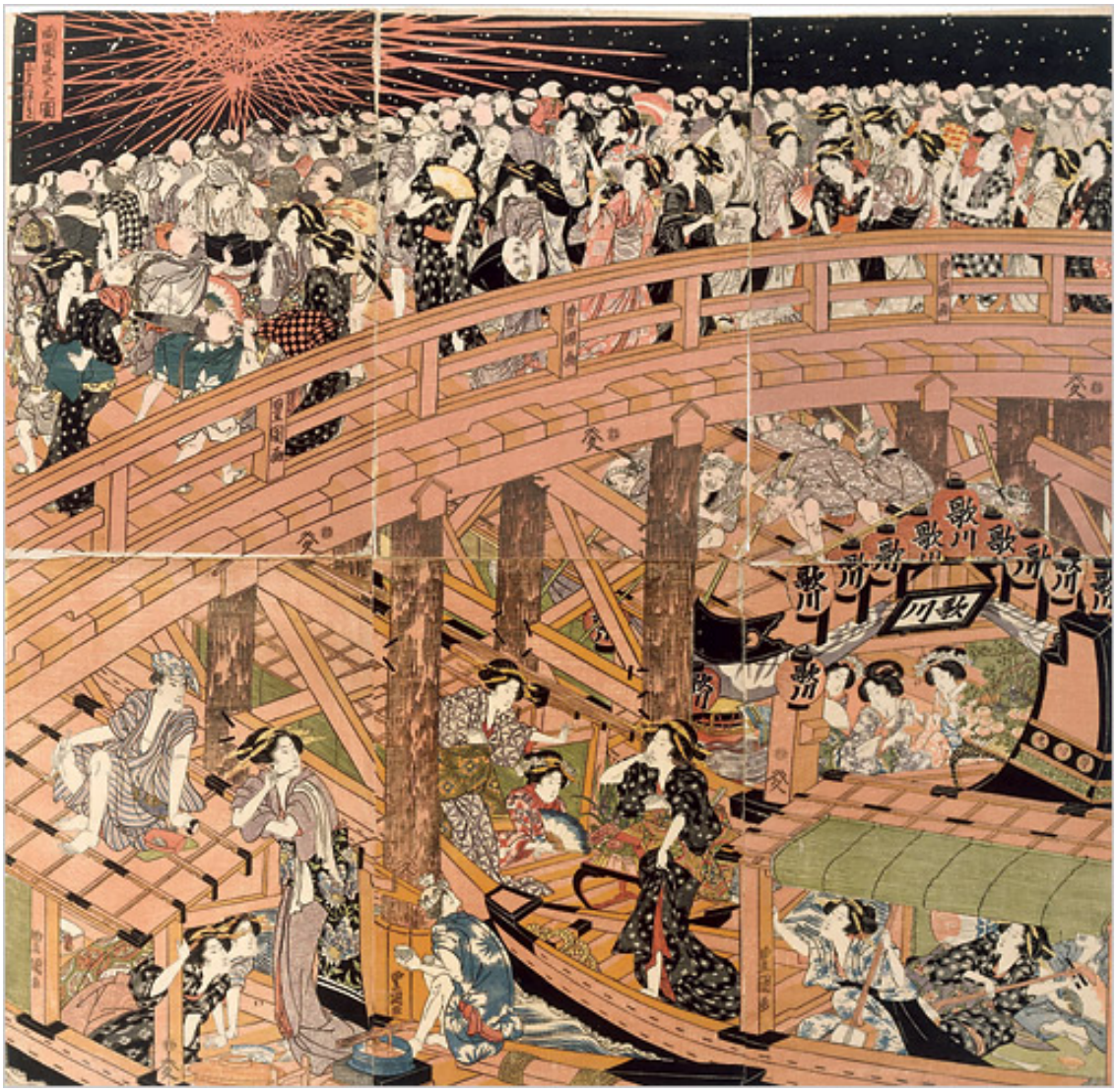
The cult of celebrity and the commercialization of art are not unique to the West. In 19th-century Japan kabuki actors and high-priced geishas were idolized by commoners, and the sale of colorful woodcut prints portraying them became a big, competitive business.

In 1842, fearing an erosion of national moral fiber, the government reacted to the mania for kabuki and for ukiyo-e, the paintings and prints that depicted the fleeting pleasures of life in the entertainment sectors of major cities. Laws were created to limit the extravagance of kabuki theater and to prohibit yakusha-e (actor prints) and bijin-ga (pictures of beautiful women). It was as if the United States had clamped down on Hollywood movies, paparazzi and the tabloids.

Looking at Japanese prints today, you might not realize what a rough-and-tumble commercial world they came out of. Their formal elegance, poetic beauty and technical refinement suggest a more serene, creative environment. So "Utagawa: Masters of the Japanese Print, 1770-1900," an exhibition of many splendid prints at the Brooklyn Museum, offers a useful and informative corrective.

Organized by Laura Mueller, a doctoral candidate in Japanese art history and a curatorial intern at the Chazen Museum of Art at the University of Wisconsin, Madison, the show presents 73 woodblock prints from the Van Vleck collection, a renowned repository of more than 4,000 Japanese prints owned by the Chazen. With 22 more prints from the Brooklyn Museum's collection, the exhibition tells the story of a group of artists that dominated the ukiyo-e print business for much of the 19th century.

It is not a masterpiece show, though there are some terrific works in it. Utagawa Toyokuni's "Fireworks at Ryogoku Bridge" (1825) is spectacular. On a two-and-a-half-foot square made by conjoining six prints, it depicts yachts loaded with languid geishas passing under a great wooden bridge, on which a crowd has gathered to observe fireworks bursting against the night sky. With its scores of lively people, precisely delineated details and blocky diagonals thrusting every which way, it is a marvel of formal compaction.



Also extraordinary is Toyohara Kunichika's dramatic wide-angle picture from 1894 of an actor dressed in a sumptuously patterned costume surrounded by vividly colored flames. With a fierce expression on his face, he poses with extended arms; holding a sword in one hand, he prepares to commit seppuku, or ritual suicide.

The exhibition's sole example of the popular erotica called shunga warrants a close look too. Produced in 1851 by Utagawa Kunisada, "An Illustrated Account of Coupled Genji" consists of three lavishly printed volumes, with double-page spreads showing men and women in luxurious robes engaging in sexual intercourse with delightful urgency. There are many more compelling works in the show, including land- and seascapes by Utagawa Hiroshige, one of the most famous of all ukiyo-e artists. But there are comparatively nondescript works, too. Prints from the 1770s by Utagawa Toyoharu are historically significant because he founded the Utagawa school and because of his innovative use of Western-style deep perspective. But his blandly illustrative works lack the bold, sensuous qualities of prints by his immediate followers Utagawa Toyohiro and Utagawa Toyokuni.

Judging by the exhibition catalog, which has color reproductions of 213 prints, many quite beautiful, a larger and aesthetically superior exhibition could have been assembled from the Van Vleck collection. But Ms. Mueller's intent was something other than a "greatest hits" show. She wanted to tell the history of the Utagawa school and, in so doing, convey something of the complexity of the Japanese printmaking business in general.

So to get the most out of the show you need to read the exhibition labels, the text panels and, most important, the catalog's scholarly essays. You will discover, for example, why there were so many artists named Utagawa: it was the Japanese custom for successful apprentices to take the names of their revered masters. You will also learn how Utagawa Toyoharu's first two students gravitated toward separate areas of specialization: Toyokuni into kabuki actor prints and Toyohiro into landscapes. Subsequent generations of artists further diversified — into warrior prints, mythic parodies and other genres — and they sometimes collaborated. Prints in the show, for example, show how Hiroshige and Kunisada combined transcendentally beautiful landscapes and gorgeously attired women. The reading material provides insight into the complex relationships among artists, craftsmen who cut the wooden blocks, printmakers who pulled the prints, and patrons and publishers who provided financing. Through the artists' strategic efforts, the name Utagawa became a brand so powerful that today more than half of all surviving ukioy-e prints are from the Utagawa school. Much of what makes this exhibition enriching may be missed by skipping the catalog. That's all right, because the show is rewarding enough visually. But those who do the reading may emerge with an idea worth thinking about in regard to art today: that an environment of impurity and complexity — moral, economic and otherwise — might be just what a flourishing artistic culture needs.

"Utagawa: Masters of the Japanese Print, 1770-1900" is on view through June 15 at the Brooklyn Museum, 200 Eastern Parkway, at Prospect Park; (718) 638-5000, brooklynmuseum.org.

http://www.nytimes.com/2008/03/22/arts/design/22prin.html?th&emc=th

'DRUNK ENOUGH TO SAY I LOVE YOU?'
They Don't Call It a Special Relationship for Nothing

By BEN BRANTLEY

Imagine that someone hands you a pamphlet attacking the United States with full-blown rage and loathing. Your first inclination is to toss it. It's the usual screed, spewing standard-issue accusations about American megalomania, imperialism and destructiveness.

But there's something about the typeface, the quality of the paper and the very arrangement of the words that hypnotizes you. You find yourself grinning, not at what it says — whether you agree with it or not, the content is old news — but at the way it says it.That's how I felt watching "Drunk Enough to Say I Love You?," the brief and bilious new play by Caryl Churchill that opened Sunday night in a superlative production at the Public Theater. On paper this 45-minute allegory about the seduction of Britain by the United States — presented as gay men locked in a seriously sick love affair — reads as a minor work from a major playwright, little more than a political poison-pen letter.

But with Ms. Churchill, one of the most inventive and incisive dramatists of her generation, even rabid venting takes the form of a brave, canny exploration of theatrical language that comes to startling life on the stage. Her natural talent can't help asserting itself, so that even when she's uncontrollably angry, she's beautiful. The creative team with which this show has been blessed — starting with the director James Macdonald and his two-member cast, Scott Cohen and Samuel West — knows how to milk every stylish effect and nuance from a script that demands such insightful care. I shudder to think how "Drunk Enough," first staged in 2006 at the Royal Court Theater in London, might play in even marginally less skilled hands.

As it is, the latest effort from the author of "Top Girls" and "Mad Forest" pulses in every detail with an assured stagecraft that holds you in attentive captivity. That includes a set (by Eugene Lee) and lighting (by Peter Mumford) that summon the sense of two men on top of a world that is slowly spinning off its axis into endless night.

This accomplishment is all the more impressive given that, reduced to its crudest terms, "Drunk Enough" is nothing more than a couple of white guys sitting on a couch, talking in fragments for three-quarters of an hour. They are named Sam (Mr. Cohen), who in case you haven't guessed is the American, and Guy (Mr. West), the Briton. (Lest these generic-symbolic names aren't enough clue as to Ms. Churchill's state of mind, the cast is further described — in a slip of paper inserted into the programs — as "Sam, a country" and "Guy, a man.")

Guy, it seems, has left his home and family for Sam. As embodied by Mr. West, a rising British actor, Guy is a polite, reticent fellow, slightly softer and older than his new lover and totally intoxicated by Sam's aggressive, dominating ways. Guy loves it when Sam talks dirty to him and slowly learns to speak what becomes their shared language of love.

By dirty, I don't mean four-letter words, which are sparse in "Drunk Enough." For Guy and Sam, conversational foreplay is made up of shards of sentences that convey the expansiveness and strength of, first, American culture and, as the play goes on, the United States' ever-further-reaching foreign policy since at least the war in Vietnam.

Proper names of people (Allende, Hussein, Chávez, Lumumba) and countries (Vietnam, Chile, Iran, Afghanistan, El Salvador, ad infinitum) figure prominently in this talk, with shifting degrees of approval and contempt as Sam's attitude toward them changes. (Only Israel remains above reproach.)

Sam — whose wired, manic persona punctures any ideas of his being only a stand-in for George W. Bush — is also given to repeating gerunds that define what he wants to do to these foreign folks, either directly or by subterfuge, from bombing to torturing and poisoning. Guy falls into the incantatory groove of such speech: tentatively at first, then with increasing excitement, followed by guilt and self-disgust.

Will Guy leave Sam? Will Sam break down if he is left alone? Against the odds, Mr. West and Mr. Cohen make us care about such soap-opera-ish questions, even as we recoil from what is obviously an unsavory case of codependency.

They give human flesh to characters who could easily be papier-mâché figureheads. They invite you to think about politics as a personal equation and personal affairs as a political one, so the play's metaphor, which could be too blunt by half, cuts on two sides.

The way Mr. West is alternately pulled into and jerked out of Mr. Cohen's adrenaline-pumping rhythms; the decline of both men into increasing paranoia and defensiveness, with all the attendant physical seediness; the sorry shift from hyped-up togetherness to listless loneliness: anyone who's been in a long, souring relationship will recognize these patterns.

That single sofa, by the way, is and is not the pedestrian piece of furniture it seems. Nor is the darkness that surrounds it empty, since simple objects like cigarettes and cups of coffee materialize from it into the men's hands. The sofa moves, scene by scene, higher and higher, farther and farther away from solid ground until Guy and Sam would appear to be overlooking the cosmos in the isolation of madness.

The second of the play's seven scenes ends with this exchange:

SAM: being powerful and being on the side of good is

GUY: God must have so much fun

SAM: win win win

GUY: love you more than I can

Of course that was in their early days, when love was young and fully in thrall to its delusions.

DRUNK ENOUGH TO SAY I LOVE YOU?

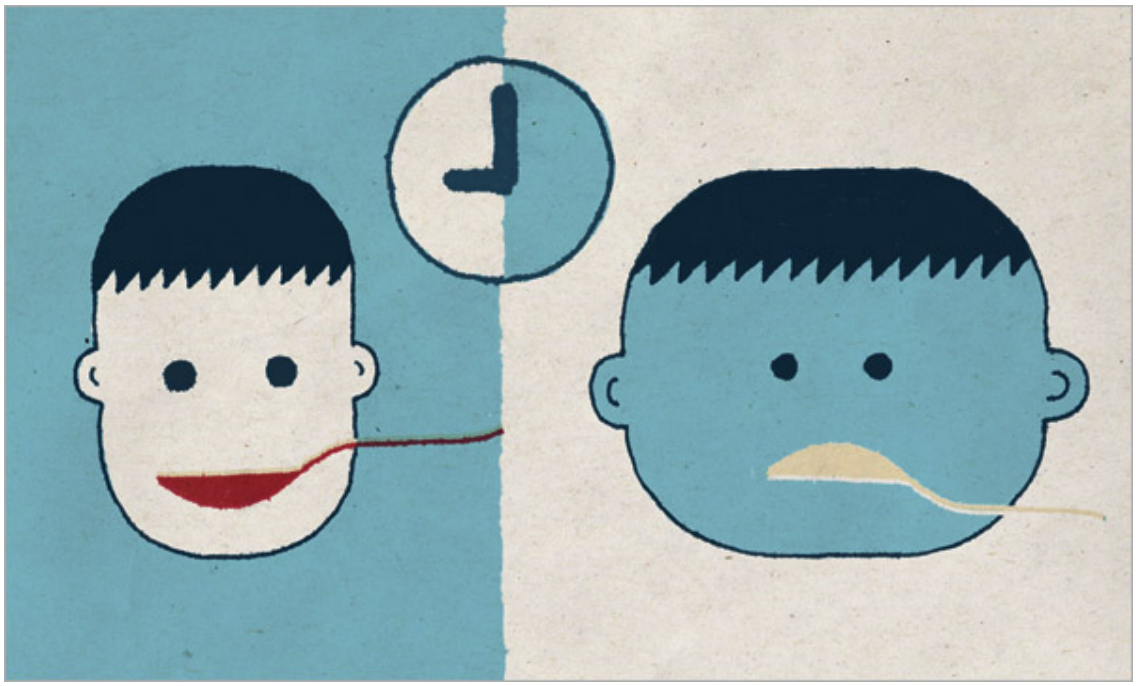
By Caryl Churchill; directed by James Macdonald; sets by Eugene Lee; costumes by Susan Hilferty; lighting by Peter Mumford; sound by Daniel Erdberg; music by Matthew Herbert; associate artistic director, Mandy Hackett; associate producer, Jenny Gersten. Presented by the Royal Court Theater and the Public Theater, Oskar Eustis, artistic director; Mara Manus, executive director. At the Public Theater, 425 Lafayette Street, at Astor Place, East Village; (212) 967-7555. Through April 6. Running time: 45 minutes.

WITH: Scott Cohen (Sam) and Samuel West (Guy).

http://theater2.nytimes.com/2008/03/17/theater/reviews/17drunk.html?th&emc=th

Skipping Cereal and Eggs, and Packing on Pounds

By NICHOLAS BAKALAR



Researchers have found evidence that Mom was right: breakfast may really be the most important meal of all. A new study reports that the more often adolescents eat breakfast, the less likely they are to be overweight.

The researchers examined the eating and exercise habits of 1,007 boys and 1,215 girls, with an average age of 15 at the start of the five-year study — a racially and economically diverse sample from public schools in the Minneapolis-St. Paul area.

The authors found a direct relationship between eating breakfast and body mass index; the more often an adolescent had breakfast, the lower the B.M.I. And whether they looked at the data at a given point or analyzed changes over time, that relationship persisted.

Why eating breakfast should lead to fewer unwanted pounds is unclear, but the study found that breakfast eaters consumed greater amounts of carbohydrates and fiber, got fewer calories from fat and exercised more. Consumption of fiber-rich foods may improve glucose and insulin levels, making people feel satisfied and less likely to eat more later in the day.

“Food consumption at breakfast does seem to influence activity,” said Donna Spruijt-Metz, an assistant professor of preventive medicine at the University of Southern California, who was not involved in the study. “Maybe kids eating breakfast get less refined foods and more that contain fiber. The influence of that on metabolism and behavior is something we’re still trying to sort out in my lab.”

For the study, which appears in the March issue of Pediatrics, the researchers recorded food intake using a well-established food frequency questionnaire and added specific questions about how often the teenagers ate breakfast.

They also included questions to determine the behavioral and social forces that might affect eating. For example, they asked whether the teenagers were concerned about their weight, whether they skipped meals to lose weight, whether they had ever been teased about their weight and how often they had dieted during the last year. They were also asked how much exercise they were getting.

About half the teenagers ate breakfast intermittently, but girls were more likely to skip breakfast consistently and boys more likely to eat it every day. Girls who consistently ate breakfast had an overall diet higher in cholesterol, fiber and total calories than those who skipped the meal; the boys who were consistent consumed more calories, more carbohydrates and fiber, and less saturated fat than their breakfast-skipping peers.

At the start of the study, consistent breakfast eaters had an average body mass index of 21.7, intermittent eaters 22.5, and those who never had breakfast 23.4. Over the next five years, B.M.I. increased in exactly the same pattern. The relationship persisted even after controlling for age, sex, race, socioeconomic status, smoking and concerns about diet and weight.

The authors acknowledge that the study depends on self-reports of weight and eating habits, which are not always reliable, and that even though they controlled for many variables, the study was observational, showing only an association between breakfast eating habits and body mass, not a causal relationship.

Still, Mark A. Pereira, a co-author of the study and an associate professor of epidemiology at the University of Minnesota, said that eating a healthy breakfast would "promote healthy eating throughout the day and might help to prevent situations where you're grabbing fast food or vending machine food."

Dr. Pereira added that parents could begin to set a good example by sitting down to breakfast themselves. "The whole family structure is involved here," he said.

http://www.nytimes.com/2008/03/25/health/nutrition/25brea.html?_r=1&nl=8hlth&emc=hltha1&oref=slogin

Perceptions: Feminists More Open-Minded on Weight

By ERIC NAGOURNEY

If beauty is in the eye of the beholder, then try to be beheld by a feminist.

A new study finds that women who describe themselves as feminists are more forgiving than other women when assessing the attractiveness of women who are either very underweight or very heavy.

Writing in the journal Body Image, researchers said the findings added evidence to the argument that women who considered themselves feminists might be less likely to be taken in by the notion that the most important thing for women is to be thin. That belief, especially in younger women, can lead the way to an eating disorder.

"Feminism," the authors write, "does appear to afford women a more inclusive perception of who is physically attractive."

For the study, the researchers, led by Viren Swami of the University of Westminster in London, showed a set of photographs to 129 women who said they were feminists and 132 who said they were not. The photographs were of 10 women, faces concealed and wearing tight gray clothing, who ranged in body mass index from emaciated to obese.

The study participants were asked to identify the thinnest and heaviest women they considered "physically attractive." They were also asked to say which woman they thought was most attractive.

Feminists and nonfeminists tended to agree on which woman was the most attractive. But that woman was described by the researchers as somewhat underweight, suggesting that even feminists cannot fully avoid societal pressures to be thin.

http://www.nytimes.com/2008/03/25/health/research/25perc.html?nl=8hlth&emc=hltha2

Public Health Risk Seen as Parents Reject Vaccines

By JENNIFER STEINHAUER

SAN DIEGO — In a highly unusual outbreak of measles here last month, 12 children fell ill; nine of them had not been inoculated against the virus because their parents objected, and the other three were too young to receive vaccines.

The parents who objected to their children being inoculated are among a small but growing number of vaccine skeptics in California and other states who take advantage of exemptions to laws requiring vaccinations for school-age children.

The exemptions have been growing since the early 1990s at a rate that many epidemiologists, public health officials and physicians find disturbing.

Children who are not vaccinated are unnecessarily susceptible to serious illnesses, they say, but also present a danger to children who have had their shots — the measles vaccine, for instance, is only 95 percent effective — and to those children too young to receive certain vaccines.

Measles, almost wholly eradicated in the United States through vaccines, can cause pneumonia and brain swelling, which in rare cases can lead to death. The measles outbreak here alarmed public health officials, sickened babies and sent one child to the hospital.

Every state allows medical exemptions, and most permit exemptions based on religious practices. But an increasing number of the vaccine skeptics belong to a different group — those who object to the inoculations because of their personal beliefs, often related to an unproven notion that vaccines are linked to autism and other disorders.

Twenty states, including California, Ohio and Texas, allow some kind of personal exemption, according to a tally by the Johns Hopkins University.

“I refuse to sacrifice my children for the greater good,” said Sybil Carlson, whose 6-year-old son goes to school with several of the children hit by the measles outbreak here. The boy is immunized against some

diseases but not measles, Ms. Carlson said, while his 3-year-old brother has had just one shot, protecting him against meningitis.

"When I began to read about vaccines and how they work," she said, "I saw medical studies, not given to use by the mainstream media, connecting them with neurological disorders, asthma and immunology."

Ms. Carlson said she understood what was at stake. "I cannot deny that my child can put someone else at risk," she said.

In 1991, less than 1 percent of children in the states with personal-belief exemptions went without vaccines based on the exemption; by 2004, the most recent year for which data are available, the percentage had increased to 2.54 percent, said Saad B. Omer, an assistant scientist at the Johns Hopkins Bloomberg School of Public Health.

While nationwide over 90 percent of children old enough to receive vaccines get them, the number of exemptions worries many health officials and experts. They say that vaccines have saved countless lives, and that personal-belief exemptions are potentially dangerous and bad public policy because they are not based on sound science.

"If you have clusters of exemptions, you increase the risk of exposing everyone in the community," said Dr. Omer, who has extensively studied disease outbreaks and vaccines.

It is the absence, or close to it, of some illnesses in the United States that keep some parents from opting for the shots. Worldwide, 242,000 children a year die from measles, but it used to be near one million. The deaths have dropped because of vaccination, a 68 percent decrease from 2000 to 2006.

"The very success of immunizations has turned out to be an Achilles' heel," said Dr. Mark Sawyer, a pediatrician and infectious disease specialist at Rady Children's Hospital in San Diego. "Most of these parents have never seen measles, and don't realize it could be a bad disease so they turn their concerns to unfounded risks. They do not perceive risk of the disease but perceive risk of the vaccine."

Dr. Sawyer and the vast majority of pediatricians believe strongly that vaccinations are the cornerstone of sound public health. Many doctors view the so-called exempters as parasites, of a sort, benefiting from the otherwise inoculated majority.

Most children get immunized to measles from a combined measles, mumps and rubella vaccine, a live virus.

While the picture of an unvaccinated child was once that of the offspring of poor and uneducated parents, "exempters" are often well educated and financially stable, and hold a host of like-minded child-rearing beliefs.

Vaccine skeptics provide differing explanations for their belief that vaccines may cause various illnesses and disorders, including autism.

Recent news that a federal vaccine court agreed to pay the family of an autistic child in Georgia who had an underlying mitochondrial disorder has led some skeptics to speculate that vaccines may worsen such conditions. Again, researchers say there is no evidence to support this thesis.

Alexandra Stewart, director of the Epidemiology of U.S. Immunization Law project at George Washington University, said many of these parents are influenced by misinformation obtained from Web sites that oppose vaccination.

"The autism debate has convinced these parents to refuse vaccines to the detriment of their own children as well as the community," Ms. Stewart said.

While many parents meet deep resistance and even hostility from pediatricians when they choose to delay, space or reject vaccines, they are often able to find doctors who support their choice.

“I do think vaccines help with the public health and helping prevent the occasional fatality,” said Dr. Bob Sears, the son of the well-known child-care author by the same name, who practices pediatrics in San Clemente. Roughly 20 percent of his patients do not vaccinate, Dr. Sears said, and another 20 percent partially vaccinate.

“I don’t think it is such a critical public health issue that we should force parents into it,” Dr. Sears said. “I don’t lecture the parents or try to change their mind; if they flat out tell me they understand the risks I feel that I should be very respectful of their decision.”

Some parents of unvaccinated children go to great lengths to expose their children to childhood diseases to help them build natural immunities.

In the wake of last month’s outbreak, Linda Palmer considered sending her son to a measles party to contract the virus. Several years ago, the boy, now 12, contracted chicken pox when Ms. Palmer had him attend a gathering of children with that virus.

“It is a very common thing in the natural-health oriented world,” Ms. Palmer said of the parties.

She ultimately decided against the measles party for fear of having her son ostracized if he became ill.

In the late 1960s and 1970s, measles outbreaks in Alaska and California triggered strong enforcement of vaccine mandates by states, and exemption laws followed.

While the laws vary from state to state, most allow children to attend school if their parents agree to keep them home during any outbreak of illnesses prevented by vaccines. The easier it is to get an exemption — some states require barely any paperwork — the more people opt for them, according to Dr. Omer’s research, supported by other vaccine experts.

There are differences within states, too. There tend to be geographic clusters of “exempters” in certain counties or even neighborhoods or schools. According to a 2006 article in The Journal of The American Medical Association, exemption rates of 15 percent to 18 percent have been found in Ashland, Ore., and Vashon, Wash. In California, where the statewide rate is about 1.5 percent, some counties were as high as 10 percent to 19 percent of kindergartners.

In the San Diego measles outbreak, four of the cases, including the first one, came from a single charter school, and 17 children stayed home during the outbreak to avoid contracting the illness.

There is substantial evidence that communities with pools of unvaccinated clusters risk infecting a broad community that includes people who have been inoculated.

For instance, in a 2006 mumps outbreak in Iowa that infected 219 people, the majority of those sickened had been vaccinated. In a 2005 measles outbreak in Indiana, there were 34 cases, including six people who had been vaccinated.

Here in California, six pertussis outbreaks infected 24 people in 2007; only 2 of 24 were documented as having been appropriately immunized.A surveillance program in the mid ’90s in Canada of infants and preschoolers found that cases of Hib fell to between 8 and 10 cases a year from 550 a year after a vaccine program was begun, and roughly half of those cases were among children whose vaccine failed.

Gardiner Harris contributed reporting from Washington.

http://www.nytimes.com/2008/03/21/us/21vaccine.html?_r=1&nl=8hlth&emc=hltha6&oref=login

From Forgotten Luggage, Stories of Mental Illness

By ABIGAIL ZUGER, M.D.

The Lives They Left Behind
Suitcases From a State Hospital Attic. By Darby Penney and Dr. Peter Stastny. Bellevue Literary Press. 205 pages. $25.

A trunk in a dusty attic holds a sleeveless peach-colored silk dress belted in creamy lace, a cane topped with a carved duck's head, kid gloves, a riding habit, a few red leather date books and an eight-page typed essay analyzing Napoleon Bonaparte's love life.

Trunks like it usually inspire dress-up games, memory exercises and writing class assignments, not works of medical history — although that discipline could often sorely use some human interest. This particular trunk is an exception: it belonged to a delicately featured Frenchwoman who walked into Bellevue Hospital in Manhattan one day in 1932 to engage the doctors in a dialogue on paranormal communication, and was committed to psychiatric wards for much of the rest of her life.

She wound up a long-term resident of Willard State Hospital, a gigantic institution in upstate New York that opened its doors to the incurable mentally ill in 1869 and closed in 1995, sending its last thousand or so patients out to smaller facilities. Left behind in an upstairs storeroom were hundreds of pieces of patients' luggage.

Curators poking through were transfixed by the power and pathos of the contents, their ordinariness a sad contrast to the tangled aberrancy of the owners' lives. After a decade of cataloging and research, a small subset of the material became the subject of an exhibition, and now a book.

One set of 18 pieces of luggage held the complete wardrobe and household goods of a successful midcareer nurse who became convinced her co-workers were conspiring against her. She reluctantly assented to temporary hospitalization at Willard and never left; increasingly incapacitated by paranoia and old age, she died there in her 80s.

One suitcase of small items (including a bronze model of the Washington Monument) belonged to an upstate carpenter whose obsession with Margaret Truman and repeated efforts to contact her for marriage earned him attention from the Secret Service, even within the walls of Willard. The government lost

interest when he developed delusions of being Jesus Christ, although his family in Ukraine continued to write to his doctors for decades.

One dilapidated satchel of religious materials belonged to a German-born Dominican nun whose life slowly crumbled into a confusion her order wanted no part of. In the hospital, she was lewd and flirtatious, proposed marriage to a variety of men, spoke of giving birth to a dachshund and of her breakfast eggs hatching to chickens in her stomach. In her old age she announced she was 11 and happily waited to be sent home.

These patients stayed at Willard through the treatment vogues of the last century. Shock therapy was practiced, and the first psychotropic medications were given with enthusiasm. The hospital itself was a giant version of a therapeutic community, incorporating a working farm and workshops.

None of it appeared to make much difference to these inmates. As they aged, some of the worst psychoses burned out of their own accord, but few patients were in any condition to be repatriated to the real world. The book's photographs are transfixing: vibrant young adults newly admitted to the hospital in the grips of wild confusion turn into slack-jawed, dull-eyed (but sometimes quite rational) old men and women.

The photographs, in fact, speak far louder and more clearly than the authors' strident prose, for what could have been a uniquely affecting work proves to be almost unreadable.

Stories about the experience of illness are in vogue these days. Some seek to humanize medical science, while others (like those in the movie "Sicko" from Michael Moore) aim to change health policy with the brute force of anecdote.

The authors, Darby Penney and Dr. Peter Stastny, are in the second camp. Both are prominent patients'-rights advocates: Dr. Stastny is described on one advocacy Web site as a "dissident psychiatrist" and Ms. Penney as a "long-time activist." Their platform is clearly stated in the book's first pages: much mental illness is "understandable reaction to stress," orthodox psychiatry often "stands in the way of healing" and even the most "distressed" patients will fare better outside institutions.

All may be legitimate subjects for debate, but basing a complex argument on fragmented and archaic case histories is problematic both for science and for style. A coherent scientific argument demands complete, current data, not reinterpreted glimpses of the past. Meanwhile, all the eerie, evocative power of the

contents of the trunks is sucked right back up by these haranguing narrators, whose awkward prose thumps and screeches like a politician declaiming through a faulty microphone.

Readers with the stamina to tune them out will be rewarded with an unusual view onto the locked back wards of psychiatry, where that always controversial border between health and illness remains far more mobile and porous than most of us like to think.

The Frenchwoman in whose trunk Edwardian elegance mingled with modern scholarship was transferred among several psychiatric hospitals for her first few years in the system. Still deep in the grips of her obsession with the supernatural, she arrived at Willard State in 1939 at age 43. For decades, she would speak only to demand her release. She developed permanent Parkinsonian symptoms from the drugs she was given. She was discharged to a rooming house in a nearby community in her 80s ("There is no evidence of gross psychiatric symptomatology," her last physician wrote) and died at 90. She never reclaimed her trunk.

http://www.nytimes.com/2008/03/25/health/views/25book.html?nl=8hlth&emc=hltha8

Tower's royal lions 'from Africa'

Cannot play media. Sorry you need to have JavaScript enabled on your browser.

Tower of London's Barbary lions Two lion skulls found during excavations at the Tower of London originated in north-west Africa, genetic research suggests.

The big cats, which were kept by royals during medieval times, have the same genetic make-up as the north African Barbary lion, a DNA study shows.

Experts believe the animals were gifts to English monarchs in the 13th and 14th centuries.

At the time, the Barbary lion roamed across much of Africa.

The two well-preserved lion skulls were recovered during excavations of the moat at the Tower of London in 1937. They have been radiocarbon dated to AD 1280-1385 and AD 1420-1480.

Researchers at the University of Oxford extracted DNA from the skulls, and found that it matched that of the north African Barbary lion.

Barbary lion
The Barbary Lion is a subspecies of lion that is now extinct in the wild
There are about 40 in captivity in Europe, with less than a hundred in zoos around the world
The Barbary lion formerly lived in North Africa from Morocco to Egypt

Comparison with the skulls of Asiatic and north African Barbary lions kept in museums in the UK and Europe gave further evidence of the link.

Dr Richard Sabin, Curator of Mammals at London's Natural History Museum, said the results were the first genetic evidence to clearly confirm that lions found during excavations at the Tower of London originated in north Africa.

He said: "Although we have one of the best mammal collections in the world here at the Natural History Museum, few physical remains survive of the Royal Menagerie.

"Direct animal trade between Europe and sub-Saharan Africa was not developed until the 18th Century, so our results provide new insights into the patterns of historic animal trafficking."

In historical times, the lion was found across Africa, the Middle East and India.

Dr Nobuyuki Yamaguchi of the Wildlife Conservation Unit at the University of Oxford said the growth of civilisations along the Egyptian Nile and Sinai Peninsula almost 4,000 years ago stopped gene flow, thereby isolating lion populations. The lion survived in the wild in western north Africa until about 100 years ago.

Dr Yamaguchi said: "Western north Africa was the nearest region to Europe to sustain lion populations until the early twentieth century, making it an obvious and practical source for mediaeval merchants.

"Apart from a tiny population in north-west India, lions had been practically exterminated outside sub-Saharan Africa by the turn of the 20th Century."

The Royal Menagerie was a collection of lions, leopards, bears and other exotic animals that were probably gifts to English monarchs.

It was established in the 12th and 13th Centuries by King John, in Woodstock near Oxford, and was later moved to the Tower of London. It was finally closed in 1835, on the orders of the Duke of Wellington.

The remaining animals were moved to the Zoological Society's Gardens in Regent's Park, now known as London Zoo.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/1/hi/sci/tech/7311134.stm

Published: 2008/03/25 02:28:30 GMT

Anger problems 'left untreated'
People who cannot control their anger have nowhere to turn leading to family breakdown, sickness and mental health problems, a charity has warned.

The Mental Health Foundation says anger is often dealt with only after someone has committed an aggressive crime.

Almost a third of 2,000 people polled said they had a friend or family member who struggled to contain their anger.

The charity is calling for more research and education into anger and earlier intervention in problem cases.

Relationships

Chronic and intense anger has been linked to heart disease, cancer, stroke, colds and flu as well as depression, self-harm and substance misuse, the charity's Boiling Point report said.

> **It is the elephant in the room in mental health**
> Dr Andrew McCulloch, Mental Health Foundation

And anger is more likely to have a negative effect on relationships than any other emotion.

The foundation said courts may refer someone for anger management training but services need to intervene sooner.

GPs say they have few options for helping patients who come to with anger problems.

A YouGov survey of 2,000 people found 12% of people say they have trouble controlling their anger.

One in four says they worry about how angry they sometimes feel and 64% think people in general are getting angrier.

Powerful emotion

But most people would not know where to seek help.

Mental Health Foundation chief executive Dr Andrew McCulloch said: "In a society where people can get help for depression and anxiety, panic, phobia, eating disorders and a range of other psychological and emotional problems, it seems extraordinary that we are left to fend for ourselves when it comes to an emotion as powerful as anger.

"We need to be able to recognise when anger is damaging our lives, ask for help and receive it.

"It is the elephant in the room in mental health."

The report concludes that many methods used in mental health services such as talking therapies can also help people cope with anger.

Government mental health tsar Professor Louis Appleby said people would rarely be referred to mental health services for anger alone as it is not a mental disorder.

But he said: "Anger sometimes can be a symptom of anxiety or depression and these are conditions which can be treated.

"The main treatment for mild anxiety and depression is psychological therapies, which the government has committed to expanding over the next three years."

Royal College of GPs mental health spokesman Carolyn Chew-Graham agreed there was very little treatment available for patients who consult their GP with an anger problem.

"Patients with anger management problems do not fit the criteria for referral to a primary care mental health team which tend to focus on people with mental health problems such as anxiety and depression, Dr Chew-Graham said.

"GPs can refer people to the voluntary sector, but many do not feel confident to do this, either because they don't actually know what's available or they are not sure the service is suitable or quality checked."

A spokesman for Relate, the relationship counselling organisation, said anger management techniques can be harmful where there is already abuse within a relationship and the more powerful person can use the techniques to manipulate their partner.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7304505.stm

Published: 2008/03/25 01:04:12 GMT

Wheeze 'link' to baby milk powder
Prolonged exposure to baby milk powder increases the risk of breathing problems, including wheezing and breathlessness, a study has found.

It looked at 170 Thai factory workers who made the powder, but the team from University of Birmingham says the risk could also apply to nannies.

Mothers and babies are safe, because they have relatively little exposure.

But the study, published in the European Respiratory Journal, says at-risk workers should be monitored.

> **Nannies, and bakers, both groups who are exposed to milk powder during their working life, may also benefit from respiratory tests.**
> Dr Maritta Jaakkola, University of Birmingham

It is already known that consuming milk powder can lead to the development of an allergy if a child has an intolerance to cow's milk but the potential risks of inhaling milk powder have never before been studied.

In this research, a team from the Institute of Occupational and Environmental Medicine at the University of Birmingham and Thailand's Mahidol University looked at just under 170 workers in a Thai baby milk factory.

The factory had high hygiene standards, and concentrations of milk powder dust were relatively low.

The majority - 130 - were directly involved in manufacturing and packaging baby milk. Another 22 were responsible for adding vitamins to the milk and 15 were quality controllers.

The researchers compared these workers' health with that of 76 office workers using a questionnaire and lung function tests.

Baking link

Twice as many people who worked with milk powder had symptoms, with 24% experiencing wheezing and 33% having breathlessness compared to 12% and 16% of the office workers.

> **This research highlights the dangers of occupational asthma and the need for employers to recognise potential triggers in the workplace**
> Leanne Male, Asthma UK

The difference remained even when the researchers took other factors, such as smoking, into account.

Lung function tests also showed a significant reduction in how strongly milk powder workers were able to breathe out.

Those working with the powder were also found to be twice as likely to have had asthma.

The researchers, led by Dr Maritta Jaakkola, say the results suggest the workers are hyper-sensitive to the powder, rather than simply irritated by it.

Dr Jaakkola said: "The effects of inhaled milk powder are relevant for occupational settings, so workers with such exposure should be protected as much as possible using exposure control measures, such as wearing latex gloves.

"They should also have regular check-ups of their respiratory health.

"Nannies, and bakers, both groups who are exposed to milk powder during their working life, may also benefit from respiratory tests."

But Leanne Male, assistant director of research at Asthma UK said the levels of powder a person would need to be exposed to in order to suffer breathing problems would have to be high, and reassured mothers they would not be affected.

Ms Male said the risk was highest for people who manufactured the powder.

She added: "This research highlights the dangers of occupational asthma and the need for employers to recognise potential triggers in the workplace."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7304976.stm

Published: 2008/03/25 01:24:15 GMT

Cod oil 'cuts arthritis drug use'
A daily dose of cod liver oil can cut painkiller use in patients with rheumatoid arthritis, a study suggests.

Taking 10g of cod liver oil a day reduced the need for non-steroidal anti-inflammatory drugs (NSAIDs) by 30%, Dundee University researchers say.

Concerns about side-effects of NSAIDs has prompted research into alternative.

Rheumatologists said the study, in Rheumatology journal, funded by Seven Seas, was small but showed fish oil could benefit some patients.

Patients in the trial were either given cod liver oil or placebo and after 12 weeks asked to gradually reduce their use of NSAIDs, such as ibuprofen.

Anything that can help to reduce NSAID use is going to be safer for patients
Dr Andrew Bamji, British Society for Rheumatology

Almost 60 patients completed the nine-month trial which found 39% taking cod liver oil reduced their daily dose of NSAIDs compared with 10% taking a placebo.

The reduction in drug use was not associated with any worsening of pain or the disease, the researchers reported.

The research team at the University of Dundee, aided by colleagues at the University of Edinburgh, have now completed three studies which have all shown patients are able to cut down their NSAID use when taking cod liver oil.

It is thought fatty acids in the fish oil have anti-inflammatory properties.

Side-effects

Some side-effects of NSAIDs, such as an increased risk of stomach bleeding have been known for a long time.

But more recently, concerns have been raised about an apparent increased risk of heart attacks and strokes in those taking the drugs.

Study leader Professor Jill Belch said the study offered hope to many rheumatoid arthritis patients who wanted to reduce the amount of pain medication they take.

"Every change in medication should be discussed with a GP but I would advise people to give cod liver oil a try for 12 weeks alongside their NSAIDs and then try to cut it down if they can manage it but if they don't manage it, that's fine.

"If you can get off NSAIDs it will be much safer."

National Rheumatoid Arthritis Society chief executive Ailsa Bosworth said: "People with rheumatoid arthritis still rely heavily on NSAIDs, even though the safety of these drugs is under scrutiny.

"We look forward to more research in this area."

British Society for Rheumatology president Dr Andrew Bamji said it was a small study so difficult to draw firm conclusions.

But he added: "Anything that can help to reduce NSAID use is going to be safer for patients.

"It does look as if the results are positive and that is quite interesting.

"I would say to patients by all means take cod liver oil and when you feel ready start to reduce your NSAID dose."

But he stressed that patients must discuss plans with their doctor because it was important that physicians were aware of all medications and supplements the patient was taking.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7307298.stm

Published: 2008/03/25 01:35:44 GMT

See Ben Stein's Movie

EXPELLEDTHEMOVIE.COM

Ben Stein

Historically, if a front in the culture wars didn't originate on a college campus, its battles eventually reached the ivory tower one way or another.

A central component of those disputes has always been the origin of life. Intelligent design — the idea that the "irreducible complexity" of living things can't be explained without some notion of a creator — continues to fuel struggles on the local level to control K-12 school boards. Now proponents of the controversial idea — dismissed as pseudoscience by a wide consensus of scientists — have graduated to college, and they wield a powerful new weapon: Ben Stein.

The author, actor and lawyer, a former speechwriter for Presidents Nixon and Ford, perfected his monotone delivery in "Ferris Bueller's Day Off" when he memorably induced a state of catatonia by lecturing his students about voodoo economics. ("Anyone? ... Anyone?") He used the deadpan style to similar effect in the quiz show "Win Ben Stein's Money," which pitted contestants against the host for a portion of his own paycheck. Now the conservative commentator is more interested in waking America up, with a documentary that seeks to challenge the "progressive orthodoxy of government-issued science in its winter of discontent."

The movie, "Expelled: No Intelligence Allowed," is already generating press in advance of its April 18 release. With a widely recognizable host, an explosive topic and a self-consciously conspiratorial tone, the slickly produced documentary at least has the ingredients for success on a Michael Moore scale. While popular conceptions of academe as a haven for aloof, godless eggheads isn't uncommon, some scholars are especially worried that the movie could make an end run around science and take a misleading message to the public. The producers retort that intelligent design, prohibited in the classroom, has rightly reappeared in the cineplex.

Or, like Moore's "Fahrenheit 9/11," the film could reinforce the existing beliefs of both those attracted and repelled by it. "I'd be surprised if it had much of an effect, just from what I've heard about it. Without having seen it, it doesn't sound like it's really that serious. So it may have some popular effect, but there it's probably going to be people who are already converted to that point of view," said Larry Arnhart, a professor of political science at Northern Illinois University who studies biopolitical theory.

Stein presents the issue as having two sides. One is taught in biology class; the other is banned. "Basically, we've got one possibility out of two possibilities that's taught, and it's Darwinism and it's

taught to the exclusion of any other idea," said Mark Mathis, a TV news reporter turned speaker who is credited in the film as an associate producer.

Last week, bloggers pounced on a different kind of exclusion at a screening of the movie in the Mall of America. "I went to attend a screening of the creationist propaganda movie, *Expelled*, a few minutes ago. Well, I **tried** … but I was **Expelled**!" wrote University of Minnesota Morris biologist P.Z. Myers on Pharyngula, his popular blog devoted to debunking attacks on evolution. "It was kind of weird — I was standing in line, hadn't even gotten to the point where I had to sign in and show ID, and a policeman pulled me out of line and told me I could not go in. I asked why, of course, and he said that a producer of the film had specifically instructed him that I was not to be allowed to attend. The officer also told me that if I tried to go in, I would be arrested."

The post's punchline: The producers didn't bar Myers' companion, Richard Dawkins, one of the more prominent critics of religious belief. Like subjects of the Borat movie, both biologists were interviewed for the documentary under the auspices of a neutral film called "Crossroads." (The producers said it was an honest title change, but the present Web site address was registered two months before the interviews took place.)

Mathis later confirmed in an e-mail that he had barred Myers from the screening. "Yes, I turned Mr. Myers away. He was not an invited guest of Premise Media. This was a private screening of an unfinished film. I could have let him in, just as I invited Michael Shermer to a screening in Nashville. Shermer is in the film as well. But, in light of Myers' untruthful blogging about 'Expelled' I decided it was better to have him wait until April 18 and pay to see the film. Others, notable others, were permitted to see the film. At a private screening it's my call.

"Unlike the Darwinist establishment, we expell no one."

"Expelled" begins, according to a preview on the documentary's Web site, with a montage sequence that introduces Stein's quest to investigate scientists who have lost tenure bids or their jobs for supporting intelligent design or questioning evolution's ability to fully explain the origins of human life. As a lone professor repeatedly scrawls "Do Not Question Darwinism" on a classroom blackboard, Stein pits the victims of evolutionary dogma against Dawkins and other atheists. As Martin Luther King Jr. addresses a crowd on screen, Stein suggests that suppressing intelligent design contradicts America's ideals of free expression. Flashes of Nazi death camps accompany the assertion of evolution's "dangerous" implications.

The message is clear: Our universities — plus the media, the courts and the educational establishment that support them — are suppressing vital questions about humanity's origins, all to prop up an explanation that begins with, as Stein characterizes it, "mud animated by lightning."

Stein ends the introduction with a monologue:

"Feel free to watch this film if you must, and I hope you do. But you've got to know that doing so could land you in a heap of trouble. Some of you are going to lose your friends for watching this film. Some of you may even lose your jobs. In fact, if you're a scientist with any hope of a future, I suggest you leave right now.... Anyone else with a stake in this debate should probably leave right now as well. But if you do leave, will anyone be left to fight this battle?

"Anyone? ... Anyone?"

Debating Darwin

Without question, a number of scientists who question evolution have faced hostile colleagues, lost tenure or worse, although the specific circumstances surrounding each case have left them open to interpretation. For example, Iowa State University claimed the views of Guillermo Gonzalez were not a significant factor in denying him tenure — he did not receive any major research grants, for example, and some say he did not live up to his initial promise as a postdoctoral student — while groups supporting the professor cite disclosed e-mails among faculty criticizing his outspoken support of intelligent design. The documentary covers that case as well as the Smithsonian Institution's alleged actions against biologist Richard von Sternberg.

"It's hard to judge some of these cases that involve tenure because there's always the problem of people wanting to keep the tenure deliberations confidential, so it's always hard to judge the evidence of whether there was some unfair bias or not," Arnhart said.

One case the documentary doesn't cover is that of Richard Colling, a professor at Olivet Nazarene University whose book about reconciling belief in God and evolution led the Christian institution to bar him from teaching general biology.

Supporters of teaching intelligent design frame the issue as one of academic freedom, and "Expelled" is no exception. "These scientists, number one, should have the freedom to examine the evidence in ways that they feel is appropriate, and number two, most importantly, if a scientist disagrees with the establishment view, that scientist shouldn't be excommunicated, and that's what's going on today," Mathis said.

But common conceptions of academic freedom only protect material relevant to a discipline. Nearly unanimously, scientists say that intelligent design isn't a theory at all. Unlike the theory of relativity or of gravity, intelligent design cannot produce testable hypotheses or be refined over successive experimentation. (The National Center for Science Education has created a Web site to debunk the documentary's arguments.)

Proponents of intelligent design use "almost entirely a strategy of negative argumentation; that is, they criticize ... what they think are major gaps in the evidence or the reasoning then demand that the proponents of evolutionary theory defend themselves against this criticism," Arnhart said. "But they don't have much of a positive theory of their own, so they really depend upon getting into this rhetorical battle where they put their opponents on the defensive.... That's why some then on the evolutionary theory side say, well, this isn't science if you don't have an alternative theory."

Still, Arnhart and others have argued that scientists shouldn't be as reluctant to discuss the issue in their classrooms, if only to bring it out into the open and expose the arguments to scrutiny.

"I cannot imagine teaching high school evolution sections by muzzling the students from mentioning creationism in many stripes, all based upon religion," said William B. Provine, the Andrew H. and James S. Tisch Distinguished University Professor in evolutionary biology at Cornell University, in an e-mail. "Thus I recommend to students to raise the issues they consider important in their science classes. The teacher does not teach ID. They do and other students do respond to student comments. If you wish to have a revolution in the teaching of evolution in high schools, this is the way to do it legally, and improve the quality of the class."

Professors have no such restrictions on what they can teach, and a similar approach could presumably be applied in college classes.

"I've had the experience of teaching students where we've talked about evolutionary theory and these kinds of debates ... and I ask them, What happens in your biology classes when this comes up? And their answer is, We keep our mouths shut," Arnhart recounted. "That is, they are told we will not permit you to discuss this. This is not a permissible debate in this science class."

— Andy Guess

The original story and user comments can be viewed online at
http://insidehighered.com/news/2008/03/24/expelled.

Yet Another Life for Maggie the Cat

By BEN BRANTLEY

Those eternal adversaries, irresistible force and immovable object, clash with gusto in the first act of the otherwise flabby revival of Tennessee Williams's "Cat on a Hot Tin Roof," which opened Thursday night at the Broadhurst Theater.

The irresistible part of the equation is embodied most persuasively by Anika Noni Rose as that determined Southern seductress Maggie the Cat. Taking on the immovable duties is Terrence Howard, in his Broadway debut, as Brick, Maggie's self-anesthetized husband.

Watching Maggie test her will of fire against Brick's Scotch-glazed shield of ice sends off such lively sparks that for the show's first 40 minutes or so you wonder if this might not be the most entertaining "Cat" since Elizabeth Ashley had her way with Keir Dullea more than three decades ago. But as any of Williams's disappointed characters could tell you, life is full of pretty hopes that fade before your eyes.

It's starting to feel as if "Cat," first staged in 1955, has become as frequent a visitor to Broadway as "Rigoletto" is to the Metropolitan Opera. The previous revival, starring Ashley Judd, Jason Patric and Ned Beatty, closed only four years ago. But this melodrama of Southern-fried mendacity, Williams's personal favorite, is blessed with temptingly juicy roles that larger-than-life actors can't wait to squeeze.

So there was reason to be excited when this latest incarnation, directed by Debbie Allen, was announced. And not, at least for me, because of the novelty of an all-black cast. (By transporting the play from the 1950s and the age of Jim Crow to a later, unspecified decade, Ms. Allen wisely pushes past the issue of race.)

What sounded promising was the matching of performers and roles. James Earl Jones, of the earth-shaking baritone and overpowering stature, as the tyrannical, filthy-rich Big Daddy; Phylicia Rashad, who won a Tony as the long-suffering matriarch in the recent revival of "A Raisin in the Sun," as his long-suffering wife: it was as if these parts were their birthrights.

Most tantalizing of all was the idea of Mr. Howard as their alcoholic son, Brick. Mr. Howard brought an eye-opening freshness to the perennial screen archetype of the sensitive but manly brooder in his Oscar-nominated turn as a small-time pimp in "Hustle & Flow." The big question, it seemed, was whether Ms. Rose, hitherto known as an able supporting actress ("Caroline, or Change" and the film version of "Dreamgirls"), would be able to hold her own in such daunting company.

As it turns out, Ms. Rose more than holds her own. She pretty much runs the show whenever she's onstage, and when she's not, the show misses her management. Mr. Howard and Mr. Jones have moments that suggest what they might have made (and possibly still could make) of their roles. And Ms. Rashad presents a creditable, if arguably misconceived, Big Mama. But this time it's Maggie who rules the Pollitt family's dusty old house of lies.

Ms. Rose's Maggie is less ornately stylized than earlier versions (including Ms. Ashley's and Kathleen Turner's, as well as Elizabeth Taylor's in the 1958 film), and she more or less ignores Williams's baroque descriptions of the character's changes in timber and tempo. But what Ms. Rose grasps, with riveting firmness and clarity, is Maggie's hard-driving sense of purpose.

Maggie, as you may recall, has an exceptionally clear through line for a Williams character. She has to make her husband, long absent from her bed, have sex with her again. This is because: 1) she really loves him; 2) a woman has her needs; 3) if she doesn't conceive a child, it's possible that the estate of the terminally ill Big Daddy will go to his other son, Gooper (Giancarlo Esposito), who has an annoyingly fertile and conniving wife (Lisa Arrindell Anderson).

It's the hot-and-bothered aspect of Maggie that originally made "Cat" a succès de scandale. But it was her unyielding will to survive that most interested Williams.

Though Ms. Rose wears a slinky slip as beguilingly as Ms. Taylor did, it's her take-charge energy and unembarrassed directness that make this Maggie such a stimulating presence. When she exclaims, "Maggie the cat is alive!," you can only nod in admiring agreement.

The play's first act has always been Maggie's, an aria of insistence and supplication directed at Brick, who, having broken his leg, is a captive audience. But what a perfect audience Mr. Howard's Brick is here, doing his best (and understandably failing) to tune out a wife who keeps prodding open wounds — like his suspicious closeness to his best friend, Skipper.

Brick is often played in the first act with robotic disaffection. Mr. Howard is more visibly amused, disgusted and drunk than any Brick I've seen. You're always aware that the click into numbness he aspires to has yet to arrive, lending a livelier than usual dynamic to his avoidance of Maggie.

The problem is that by the second act, when Big Daddy and Brick confront the truth together, Mr. Howard is wearing his character's pain all too palpably, mopping his eyes and tearfully bleating his lines. This turns Brick into a wounded little boy instead of the willfully numbed creature he must be to challenge Big Daddy into anger.

As a consequence Mr. Jones is forced to play his character as a blustery but affectionate fellow whose vulgarity masks a good heart, not so different from the lovable codger he recently portrayed in "On Golden Pond." Ms. Rashad, in turn, seems to grow in supportive strength and mother-knows-best wisdom. The production acquires a haze of sentimentality that makes it soft when it should be sharp.

The same might be said of Ms. Allen's direction. There's plenty of life in her staging, which keeps an army of Pollitts and servants, assembled for Big Daddy's birthday, running around Ray Klausen's

standard-issue Southern-mansion set. There is even, for reasons beyond my ken, a saxophone player (Gerald Hayes) who struts across the stage before each act.

The resulting atmosphere is festive, for sure, and the show is never boring. But too often it's without focus. Ms. Allen tries to resolve the problem by having her principal characters awkwardly spotlighted for their defining soliloquies. (William H. Grant III did the oddly abrupt lighting.) But she needs to rein in her cast.

Mr. Esposito, Ms. Anderson and even on occasion Mr. Jones resort to broad exaggeration more appropriate to a sitcom. And Mr. Howard is allowed to punctuate Brick's speeches with slackening silences of interior exploration on which the audience is not invited to accompany him.

I will admit that I have yet to see a perfectly balanced "Cat on a Hot Tin Roof." What I recall of Anthony Page's version in 2003 is Mr. Beatty's magnificent Big Daddy.

But Williams wrote that with "Cat" he was "trying to catch the true quality of experience in a group of people, that cloudy, flickering, evanescent — fiercely charged! — interplay of live human beings in the thundercloud of a common crisis." The only fiercely charged element at the Broadhurst is Ms. Rose's Maggie. This "Cat" cries out for more lightning.

CAT ON A HOT TIN ROOF

By Tennessee Williams; directed by Debbie Allen; sets by Ray Klausen; costumes by Jane Greenwood; lighting by William H. Grant III; sound by John H. Shivers; hair design by Charles G. LaPointe; production supervisor, Theatresmith Inc.; production stage manager, Gwendolyn M. Gilliam; general manager, NLA/Devin Keudell; original music by Andrew (Tex) Allen; associate producers, Beatrice L. Rangel and Terrie Williams. Presented by Front Row Productions and Stephen C. Byrd with Alia M. Jones, in association with Clarence J. Chandran, Norm Nixon, Michael Fuchs, Anthony Lacavera, Edward J. Jones, Sheanna Pang, Jovan Vitagliano and Al Wilson. At the Broadhurst Theater, 235 West 44th Street, Manhattan; (212) 239-6200. Through June 22. Running time: 2 hours 45 minutes.

WITH: Terrence Howard (Brick), Phylicia Rashad (Big Mama), Anika Noni Rose (Maggie), James Earl Jones (Big Daddy), Lisa Arrindell Anderson (Mae), Lou Myers (Reverend Tooker), Count Stovall (Dr. Baugh), Giancarlo Esposito (Gooper) and Gerald Hayes (saxophone player).

http://theater2.nytimes.com/2008/03/07/theater/reviews/07roof.html?ex=1221883200&en=ff380b792bb33b62&ei=5087&WT.mc_id=TH-D-I-NYT-MOD-MOD-M038-ROS-0308-HDR&WT.mc_ev=click&mkt=TH-D-I-NYT-MOD-MOD-M038-ROS-0308-HDR

Big Ideas in Deceptively Small Packages

By A. O. SCOTT

For nearly four decades New Directors/New Films has been the straightforward, serviceable name of a generous program presented every spring by the Film Society of Lincoln Center and the Museum of Modern Art. I'm not suggesting that they change or rebrand it, but after watching the first half of this year's lineup, movies of modest means and evident ambition, I prefer to think of the festival as Serious Directors/Small Films.

Not that humor, even whimsy, is entirely missing. A kind of free-associative, good-humored surrealism informs "The Toe Tactic," a feature by Emily Hubley that combines her squiggly, playful animation (most widely seen in "Hedwig and the Angry Inch") with an oblique story about the serendipities of urban life. And a similar spirit — coy, tender, slightly melancholic — infuses "Jellyfish," a collaboration between the Israeli fiction writer Etgar Keret and Shira Geffen, his wife.

These films employ bold narrative strategies and are not shy about showing off their visual ingenuity, but they also have a charming, slightly fussy, jewel-box quality. Their lovingly displayed collections of curious details, odd coincidences and quirks of behavior are signs of integrity, and also assertions of individuality. The argument these movies implicitly make — on behalf of their eccentric, vulnerable characters and also against bigger, coarser, more ordinary kinds of cinema — is for the supreme value of idiosyncrasy.

It may be paradoxical to note that "The Toe Tactic" and "Jellyfish" share a commitment to idiosyncrasy. But part of the value of New Directors/New Films is that it offers a regular survey of the styles that first- and second-time filmmakers around the world are pursuing. Originality in any art form is accomplished by working through, as well as against, available models, inspirations and traditions. The friendly, sincere absurdism favored by Mr. Keret, Ms. Geffen and Ms. Hubley, which takes some of its cues from a movie like Miranda July's "Me, You and Everyone We Know," seems to be an especially fruitful style at the moment.

And so is the unadorned realism in Lance Hammer's "Ballast" and in Courtney Hunt's "Frozen River," a film that opens the series on Wednesday night. (The program runs through April 6.) But even as these two films concentrate on unhappy families in neglected corners of small-town America — the Mississippi Delta in "Ballast," a far northern corner of New York State in "Frozen River" — their methods are interestingly different.

"Frozen River" sits more comfortably in what has become a prevalent American genre of regionalist gloom, and at times Ms. Hunt appears to be working her way down a checklist of conventions. Financial difficulty, ethnic tension, marital strife, children in danger — these elements seem to prop up the story rather than to issue organically from it. But the feature is well told and capably acted, especially by Melissa Leo ("The Three Burials of Melquiades Estrada" and the television show "Homicide: Life on the Street"), playing a woman who smuggles illegal immigrants across the Canadian border in the trunk of her car.

In "Ballast" Mr. Hammer draws on similar themes and situations: poverty, grief, the temptations of crime and violence. But his film is less dependent on familiar narrative beats or on the virtuosity of its actors, who are almost all nonprofessionals. Micheal J. Smith Sr., playing Lawrence, a storekeeper nearly undone by the suicide of his twin brother, is a quiet, slow-moving presence whose silence suggests a volatile but ultimately unknowable inner life. Lawrence's dealings with his brother's estranged wife and son could have been the basis of a pat melodrama of family reconciliation, but Mr. Hammer turns it into something much more mysterious, and also more real.

Lee Isaac Chung's "Munyurangabo," filmed in Rwanda, could have also easily veered into obviousness and noble sentiment. It follows two young men from Kigali, the capital, into the countryside on a journey whose purpose becomes clear only gradually. The cast, like that of "Ballast," is nonprofessional, and the actors' occasional awkwardness both draws you into the drama of the film's situations and preserves an analytical distance. "Munyurangabo" is a film about what it feels like to live in a country that has recently gone through the horror of genocide. But it is equally about how people struggle to think straight in the wake of the unthinkable. History and politics are never far from the minds of serious filmmakers, but there are notable attempts in New Directors to avoid polemics or sermons to the choir. Haiti's present poverty and colonial past underlie the vivid, dreamlike imagery in Michelange Quay's "Eat for This Is My Body," a fascinating Buñuelian puzzle of a film that forsakes narrative and argument altogether.

Perhaps the most overtly political film I saw was Alex Rivera's "Sleep Dealer," which was also the most exuberantly entertaining, a dystopian fable of globalization disguised as a science-fiction adventure. Showing some of the manic inventiveness of Richard Kelly's "Southland Tales," but with a hundred times more intellectual clarity and storytelling discipline, Mr. Rivera — a brilliant young director — takes his audience into a future of "aqua-terrorism" and cyberlabor that I wish I could dismiss as implausible.

Some aspects of Godfrey Cheshire's "Moving Midway" may also seem unlikely. Who, apart from Werner Herzog, would think of loading an old North Carolina plantation house onto a truck and moving it away from encroaching strip malls and sprawling developments? Mr. Cheshire's cousin, as it happens. But the relocation of the house is only one piece of this extraordinarily rich documentary, which takes up the agonies and ironies of Southern history with remarkable wit, empathy and learning.

Mr. Cheshire, a New York film critic for many years, brings his intelligence and knowledge of the medium to bear on a primordial subject: What does it mean to think of a place as home? The same question, more or less, is posed by Azazel Jacobs, who shot his fictional feature, "Momma's Man," in the Manhattan loft where he grew up.

Not only that: Mr. Jacobs cast his parents, Ken, an avant-garde filmmaker, and Flo, an artist, as the parents of his protagonist, their only son, Mikey (played by Matt Boren). Mikey, who lives in California with his wife and baby, comes to New York for a visit and finds himself suddenly unable to leave the nest. His regression is frightening, funny and sad, and "Momma's Man" is one of the most unsettling and lyrical depictions of what has lately become an inescapable topic in American movies: the refusal or inability of grown men to act their age. Not that all the indecisive young men on New Directors' screens are American. There is the morose Stamatis in Constantina Voulgaris's "Valse Sentimentale," from Greece, and the fickle Imri in Lior Shamriz's "Japan Japan," from Israel. And there are French girls awkwardly swimming toward maturity in Céline Sciamma's lovely "Water Lilies."

But if most of the characters audiences will encounter are, like most of the filmmakers, relatively youthful, there are also more seasoned voices, including Mr. Cheshire's sharp-witted mother, Mr. Jacobs's unflappable father and Xiaolu Guo's observant parents, whose trip from China to Europe is chronicled in their daughter's affectionate documentary "We Went to Wonderland." Ms. Guo's film is 76 minutes of ordinary doings and diary entries, shot in black and white, starring two decidedly, even proudly, ordinary people. In its unassuming way, though, "We Went to Wonderland" spans decades and continents and suggests endless complexity beneath its simple surface. Like a lot of the other selections at New Directors this year, it may be a small movie, but it's also bigger than it looks.

New Directors/New Films runs through April 6 at the Walter Reade Theater, 165 West 65th Street, Lincoln Center, and at the Museum of Modern Art; filmlinc.com. Tickets: (212) 721-6500.

http://www.nytimes.com/2008/03/26/movies/26new.html?_r=1&th&emc=th&oref=slogin

Encouraging Interfaith Experiences

What sorts of campus structures, architectural, administrative and otherwise, might encourage meaningful interactions across religious lines?

At a summit in Washington sponsored by Hillel: The Foundation for Jewish Campus Life, a discussion Tuesday of spiritual exploration and multifaith understanding — and the roles and responsibilities of the academy in that regard — explored different answers to variations of that question. "It seems to me that in our setting, our environment, people come into the Kay Spiritual Life Center knowing it's going to be a profoundly interfaith experience," The Rev. Joseph Eldridge, a United Methodist minister and the university chaplain at American University, said relative to American's multifaith facility. "It's implicit. It's embedded in the DNA of the place."

Panelists participating in Tuesday morning's discussion described beautiful buildings that house Muslim prayer rooms and Hillel staff offices under one roof, and administrative hierarchies that gather (paid or unpaid) advisers for various religious traditions under a single (paid) supervisor charged with coordinating and supporting religious life and interreligious connections more generally. Said Susan Laemmle, dean of religious life at the University of Southern California: "I'm a rabbi, but I am not the campus rabbi." A former director of USC's Hillel Jewish Center, Laemmle now fills a campus-wide coordinating role, with other religious and lay leaders directing Hillel activities.

Peter L. Laurence, the founder and executive director of Education as Transformation, Inc., a consulting and educational organization based at Wellesley College, said that at Wellesley, a number of religious advisers report to a dean. "They as a team exemplify collaborations across religious lines," Laurence said.

Meanwhile, at the student level, a student multifaith council meets regularly at Wellesley. Specific religious celebrations, like Sukkot, a Jewish festival, and Diwali, a Hindu one, are open to students from across the campus.

And, architecturally speaking, Wellesley's historic chapel is under renovation. The lower level, Laurence said, has been gutted and transformed into a multifaith center. "This is another attempt to use facilities to bring students together across religious lines," Laurence said.

"A lot of campuses have that challenge: They've got that magnificent old chapel. What do you do?"

Summit attendees also envisioned what future Hillel student centers could look like. "I think that Judaism of the future and some aspects of Christianity will be reflected in their buildings," Sharon Margolin Ungerleider, a member of Hillel's Board of Directors and the founder of a Hillel affiliate at the University of Oregon, said in an interview. She said Jewish campus leaders in Portland are imagining what a Hillel facility they'd like to build there would look like. One of the possibilities that's emerging is the incorporation of an interfaith component — something she anticipates will be considered as other Hillel centers are built or renovated in coming years. "We're building a Hillel building that will reach into this century and the next. What kind of world are we building into? What kind of spiritual building are we building into?"

For all the talk of structures, however, some in Tuesday's session pointed out that this is a case where building it doesn't mean that all will come — or talk to one another if they do. "Just because you have an interfaith center doesn't mean you have interfaith dialogue," one audience member said, pointing out for instance that Jewish students can come and pray and leave and Muslim students do the same without interacting.

"Let's be aware," said Rabbi James S. Diamond, who teaches in Princeton University's Program in Judaic Studies, "that even at their best, there's a substantial number of students out there that just won't [come to interfaith centers]. That's not the address they're going to go to."

And audience members also prompted the panel — made up entirely of representatives of private institutions — to confront the challenges facing public universities when it comes to encouraging students' spiritual explorations while upholding the separation of church and state. Robert Smith,

director of the Center for Ethics and Religious Affairs at Pennsylvania State University, described Penn State's facility, which was expanded to double its previous size in 2003 and which functions administratively very much like Wellesley's religious and spiritual life office (although in Penn State's case, advisers for particular religious groups are not paid by the university because of its public status, Smith said).

Groups meeting or worshipping at Penn State's center include the Catholic Campus Ministry, Asian American Christian Fellowship, Unitarian Universalist Students, Korean Buddhism Organization, and Hillel. Recently, an association of atheists affiliated with the center, which in a typical week attracts between 4,000 and 5,000 students, Smith said.

Penn State, said USC's Laemmle, is "definitely the exception that shows that public universities can be leaders in this regard" — but an exception nonetheless.

— Elizabeth Redden

The original story and user comments can be viewed online at http://insidehighered.com/news/2008/03/26/religion.

Primitive Mouse-Like Creature May Be Ancestral Mother Of Australia's Unusual Pouched Mammals

The Monito del Monte (Dromiciops gliroides) (Credit: Image courtesy of University of New South Wales)

ScienceDaily (Mar. 26, 2008) — They are separated by a vast ocean and by millions of years, but tiny prehistoric bones found on an Australian farm have been directly linked to a strange and secretive little animal that lives today in the southern rainforests of South America.

The fossilised ankle and ear bones are those of Australia's earliest known marsupial, Djarthia, a primitive mouse-like creature that lived 55 million years ago. It is a kind of Australian Eve, possibly the mother of all the continent's unusual pouched mammals, such as kangaroos, koalas, possums and wombats.

But a new study has confirmed that Djarthia is also a primitive relative of the small marsupial known as the Monito del Monte -- or "little mountain monkey" -- from the dense humid forests of Chile and Argentina.

Although scientists now generally agree that marsupials found their way to Australia from South America, the new finding suggests that the Monito del Monte may subsequently have made the return journey and is indeed a living fossil, the last of a lineage that can be traced back to Djarthia.

The bones were collected from the Tingamarra fossil site near Murgon, in Queensland, and have been studied by a research team led by Mr Robin Beck, a doctoral student in palaeontology at the University of New South Wales, in Sydney.

"It's now accepted that Australia's marsupials are the result of dispersal from South America via Antarctica, when the three continents were joined as part of the super-continent Gondwana," Mr Beck says.

"We know from other fossils that marsupials were present in South America at least five million years before Djarthia, which is by far Australia's oldest and most primitive marsupial fossil.

"Scientists already suspected that the Monito del Monte is more closely related to Australia's marsupials than to South America's, but its exact origins have been controversial. Until now, we only knew Djarthia from isolated teeth, which weren't enough to tell us whether it was related to the Monito del Monte or not."

"The fossil ankle and ear bones of Djarthia make it clear that the Monito del Monte descends from a Djarthia-like ancestor, and so probably returned to South America from Australia before Gondwana broke up. The continents have been separated by deep ocean since about 40 million years ago."

Like the Monito del Monte, Djarthia was a little larger than a mouse and, likewise, its ankle bones show adaptations for climbing trees. It probably had a similar diet as well: the Monito del Monte eats insects and other small invertebrates and some fruits.

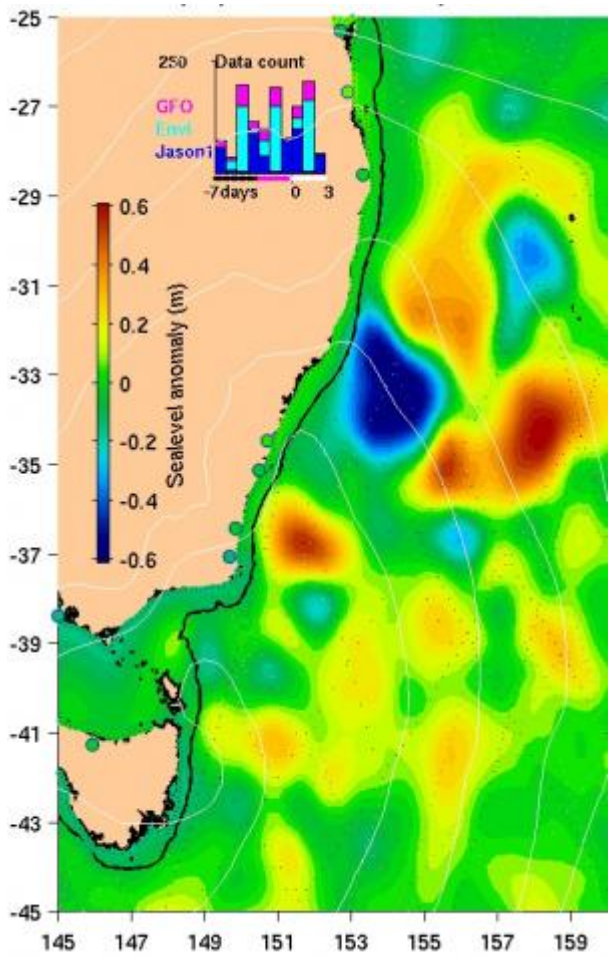
The Monito del Monte is nocturnal and its agility and prehensile tail make it an excellent climber. Females carry up to five young in a well-developed pouch.

Journal reference: Beck RMD, Godthelp H, Weisbecker V, Archer M, Hand SJ (2008) Australia's Oldest Marsupial Fossils and their Biogeographical Implications. PLoS One 3(3): e1858. doi:10.1371/journal.pone.0001858

Adapted from materials provided by University of New South Wales.

http://www.sciencedaily.com:80/releases/2008/03/080325203453.htm

Giant Ocean Eddy Shadows Sydney, Australia



Sea level anomaly Feb 15, 2008. (Credit: Image courtesy of CSIRO Australia)

ScienceDaily (Mar. 26, 2008) — CSIRO Wealth from Oceans National Research Flagship scientist, Dr David Griffin, says the 'birth' of the eddy has been traced to last August.

"From satellite maps of sea-level we can see that it had been loitering this side of Lord Howe Island for some time and began approaching the NSW coast near Christmas," Dr Griffin says.

"It remained stationary during January and simply grew larger but, because it remained offshore, less people would have noticed its impacts on water temperatures."

The cold water at the new eddy's centre has welled up about 500m from the ocean depths.

"It remained stationary during January and simply grew larger but, because it remained offshore, less people would have noticed its impacts on water temperatures."

"In the southern hemisphere, a cold eddy has to rotate clockwise," Dr Griffin says. "This one completes a full revolution every 10 days and the sea level at its centre is reduced by nearly 1m, which is how researchers can tell where the eddy is."

Four people who definitely noticed the eddy were the crew who rowed across the Tasman Sea from New Zealand in late December. Skirting its southern boundary, they received a homeward boost of 3km/h or more.

"The eddy appears to be on the wane now and the question of interest for oceanographers is what have been the factors that influenced its development and led to its evolution into an ocean feature approaching the size of Tasmania," Dr Griffin says.

Instruments that detect the height of the world's oceans are carried by satellites such as Jason-1 (Jet Propulsion Laboratory-NASA and the French Space Agency CNES) and the European Space Agency's Envisat. These are valuable aids to scientists developing ocean forecasting systems such as Australia's BlueLINK.

Adapted from materials provided by CSIRO Australia.

http://www.sciencedaily.com:80/releases/2008/03/080325100117.htm

Earliest Signs Of Corn As Staple Food Found After Spreading South From Mexican Homeland

A new technique for examining ancient cooking pots has produced the earliest directly dated examples of domesticated corn (maize) being consumed on the South American continent. (Credit: Image courtesy of University of Calgary)

ScienceDaily (Mar. 25, 2008) — Corn has long been known as the primary food crop in prehistoric North and Central America. Now it appears it may have been an important part of the South American diet for much longer than previously thought, according to new research by University of Calgary archaeologists who are cobbling together the ancient history of plant domestication in the New World.

In a paper published in the Proceedings of the National Academy of Sciences, U of C PhD student Sonia Zarrillo and archaeology professor Dr. Scott Raymond report that a new technique for examining ancient cooking pots has produced the earliest directly dated examples of domesticated corn (maize) being consumed on the South American continent. Their discovery shows the spread of maize out of Mexico more than 9,000 years ago occurred much faster than previously believed and provides evidence that corn was likely a vital food crop for villages in tropical Ecuador at least 5,000 years ago.

"The domestication and dispersal of maize has been a hot topic in archaeology for decades and these are the earliest indisputable dates for its presence in South America," Raymond said. "It has long been thought that maize may have been used south of Panama at this time for ritual purposes but this shows it was also being consumed as food."

Raymond led the excavation of tropical village sites in western Ecuador in the early 1980s, which are the oldest known villages in the Americas. Using pottery fragments recovered from the sites, Zarrillo obtained the charred remnants of prehistoric meals and found they contained starch granules from domesticated corn.

"Plant material typically does not preserve very well in tropical sites but it turns out that microscopic starch grains do survive very well over the years and can be used to identify exact species of plants," Zarrillo said. "Analyzing starch from charred food residues is a new technique in archaeology and it is exciting because it will stimulate research around the world when people realize they can recover starch from cooking pots and use it to date and identify what people were using as food."

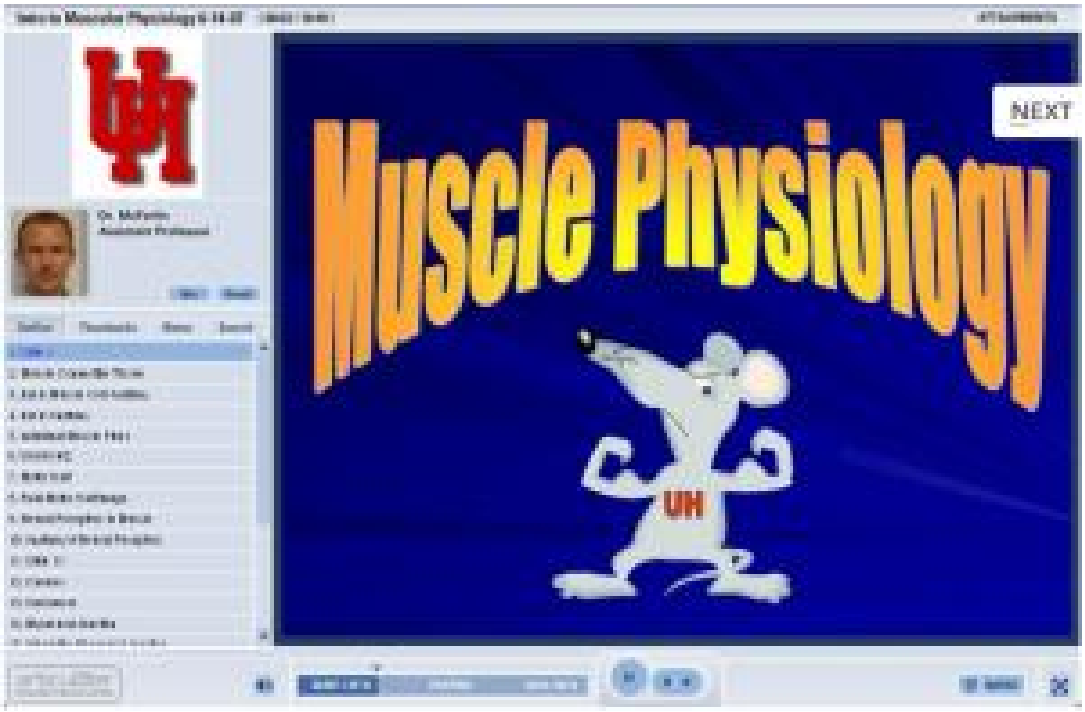
Starch analysis was also used by Zarrillo and Raymond for a study published in Science last year that traced the domestication and spread of chili peppers throughout South America, Central America and the Caribbean more than 6,000 years ago.

The paper "Directly dated starch residues document early formative maize (Zea mays L.) in tropical Ecuador" by Sonia Zarrillo, Deborah M. Pearsall (University of Missouri), J. Scott Raymond, Mary Ann Tisdale (Canadian Heritage, Government of Canada) and Dugane Quon (Canadian Food Inspection Agency) will be available in the March 24 online early edition of the Proceedings of the National Academy of Sciences.

Adapted from materials provided by University of Calgary, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com:80/releases/2008/03/080324173538.htm

College Students Score Higher In Classes That Incorporate Instructional Technology Than In Traditional Classes



Screen shot from KIN 3306 The Physiology of Human Performance, a 'hybrid class' taught by Dr. Brian McFarlin at University of Houston. (Credit: Image courtesy of University of Houston)

ScienceDaily (Mar. 25, 2008) — The lives of today's college students have always included computers and the Internet. That technology now has moved from the ether into instruction.

A technical report from a University of Houston Department of Health and Human Performance researcher finds that students in a "hybrid class" that incorporated instructional technology with in-class lectures scored a letter-grade higher on average than their counterparts who took the same class in a more traditional format.

Brian McFarlin measured the student involvement and academic performance of a traditional class--Kinesiology 3306--from fall 2004 to fall 2005. He compared those measurements with those of students in the hybrid class, offered as an alternative from summer 2006 to fall 2007.

"One reason we offered the hybrid class in the first place was because students said they wanted it," said McFarlin, a researcher and assistant professor. "Their formal evaluations of the class indicated the traditional class didn't take advantage of instructional technologies available, and that these technologies could give them additional help and access to course material outside of class time."

Hybrid classes are growing in popularity and practicality for students and professors, at UH and on campuses across the country, because of the presentation of material and the accessibility and flexibility to students. For example, an upper-level business law and ethics class in the UH Bauer College of Business reaches more than 1,000 students each academic year because of its flexible, hybrid offerings.

In addition, the UH Graduate Futures Studies has been experimenting with hybrid classes for the last five years. Houston students attend class in classrooms, but students as far away as Australia also take and participate in classes. To date, there has been limited literature addressing the effectiveness of such classes, McFarlin said.

McFarlin's traditional kinesiology class met twice a week for a 90-minute lecture in a large auditorium. He used Microsoft PowerPoint slides with Flash media to present course material. He reported that, as is customary in large auditorium classes, interaction was minimal between students and professor.

His hybrid class met once a week for a traditional 90-minute lecture, but augmented the lesson with various forms of instructional technologies. The second lecture each week was administered by WebCT, an online venue for students to review course material. An animated character of McFarlin--an interactive SitePal avatar created by OddCast of New York--welcomed students to the site and provided class announcements. In addition, McFarlinnarrated material for upcoming lectures using Articulate Studio software, so students could prepare for the next class at their own pace.

"One major advantage of the Articulate software is that it enhances the appearance of standard PowerPoint files by allowing the course designer to add self-test questions, provide a search function and a navigation menu," McFarlin said. "Once students completed the online lecture, they were required to take a WebCT quiz on the material. The majority of students scored between 90 and 100 percent."

In the classroom, students of the hybrid class used a remote control-looking device called a "radio frequency in-class response system." They purchased these devices on campus as part of the class requirements. At the beginning of class, students were asked exam-like questions about the previous lecture and used the device to select the answers. At the end of class, they answered questions regarding the lecture they had just heard. The devices recorded their responses and let McFarlin know which part of his material needed more explanation. The technology also kept track of attendance.

"Final grades in the hybrid class were on average a letter grade higher than those in the traditional format," McFarlin said."Students could choose a content delivery method that matched their style, so we believe they were better able to comprehend the material." In addition, comments in evaluations indicated students preferred the self-paced nature of the hybrid class.

Future hybrid classes would provide a "frequently asked questions" feature, hosted by an animated SitePal avatar, McFarlin said.Beyond the improvement of student grades, McFarlin believes that hybrid courses can benefit large college campuses struggling with space management issues.

"For instance, in the present hybrid course, we only needed to have access to a classroom for one and a half hours a week," he said."That means two courses could be taught in a classroom that would normally be dedicated to one traditional lecture course."

McFarlin admits there are some shortcomings. Online instruction doesn't allow the instructor to confirm the identity of a student completing an assignment. He notes that creating the online course material is time-consuming, especially when implementing various technologies. Still, his student's success prompted him to offer Kinesiology 3306 only in a hybrid format.

"In the end, I have expanded my own instructional capacities and provided a better learning experience to my students," McFarlin said."The key to success with instructional technology is to keep the focus on student-related outcomes and learning. This was my objective."

Findings are published in the journal "Advances in Physiology Education." The technical report was made possible by grants from the UH Education Technology and University Outreach, the UH Faculty Development Initiative Program B, and with cooperation from OddCast of New York, Articulate Rapid E-Learning Studio Pro, Higher Ed Generation and e-Instruction of Denton, Texas.

Adapted from materials provided by University of Houston, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/03/080324125154.htm

Elderly Improve With Exercise, Too

As part of the Strong Living Program, exercise physiologist Jennifer Layne (middle) and program coordinator Charlotte Mallio test a volunteer's muscle strength in the Nutrition, Exercise Physiology, and Sarcopenia Laboratory. (Credit: Photo by Stephen Ausmus)

ScienceDaily (Mar. 25, 2008) — The 2005 Dietary Guidelines for Americans strongly urge people to engage in regular physical activity and avoid sedentary pastimes. That's because previous research has provided evidence that physical activity and nutrition work together for better health. Agricultural Research Service (ARS)-funded scientists have again reported on how the elderly also can engage in physical activity to improve quality of life.

In a recent study involving a group of 213 volunteers aged 70 to 89 years, the better the participants' adherence to a physical activity program, the greater their improvements in physical functioning. The study was led by physiologist Roger Fielding with the Jean Mayer USDA Human Nutrition Research Center on Aging (HNRCA) at Tufts University, Boston, Mass. He is director of the center's Nutrition, Exercise Physiology and Sarcopenia Laboratory.

At the beginning of the study, all of the male and female volunteers were sedentary and had a variety of physical health problems. The researchers found that more than half were able to engage in regular moderate exercise for one year. Those who improved the most reported exercising 150 minutes or more per week. The study was published in Medicine & Science in Sports & Exercise.

An earlier HNRCA study also showed that the elderly can get in step with exercise. Each of 70 study volunteers, aged 70 years or older, were "aging in place" (meaning living at home) and had some functional impairment. The participants were randomly assigned to either a home-based progressive strength, balance and general-physical-activity intervention, or to a group that received home-based nutrition education.

After six months, each volunteer was tested for strength, balance, gait speed and cardiovascular endurance. The researchers concluded that minimally supervised exercise is safe and can improve functional performance in elderly individuals. The study was published in Journals of Gerontology Series A: Biological Sciences and Medical Sciences.

ARS is the chief scientific research agency of the U.S. Department of Agriculture (USDA).

Adapted from materials provided by US Department of Agriculture.

http://www.sciencedaily.com/releases/2008/03/080321123721.htm

Huge Iceberg Breaks Away, Antarctic Ice Shelf 'Hangs By A Thread'

Wilkins Ice Shelf from BAS Twin Otter. (Credit: Image courtesy of British Antarctic Survey)

ScienceDaily (Mar. 25, 2008) — British Antarctic Survey has captured dramatic satellite images of an Antarctic ice shelf that looks set to be the latest to break out from the Antarctic Peninsula. A large part of the Wilkins Ice Shelf on the Antarctic Peninsula is now supported only by a thin strip of ice hanging between two islands. It is another identifiable impact of climate change on the Antarctic environment.

Scientists monitoring satellite images of the Wilkins Ice Shelf spotted that a huge (41 by 2.5 km) km^2 berg the size of the Isle of Man appears to have broken away in recent days -- it is still on the move.

Glaciologist Ted Scambos from the University of Colorado alerted colleagues Professor David Vaughan and Andrew Fleming of the British Antarctic Survey (BAS) that the ice shelf looked at risk. After checking daily satellite pictures, BAS sent a Twin Otter aircraft on a reconnaissance mission to check out the extent of the breakout.

Professor Vaughan, who in 1993 predicted that the northern part of Wilkins Ice Shelf was likely to be lost within 30 years if climate warming on the Peninsula were to continue at the same rate, says, "Wilkins is the largest ice shelf on the Antarctic Peninsula yet to be threatened. I didn't expect to see things happen this quickly. The ice shelf is hanging by a thread -- we'll know in the next few days or weeks what its fate will be."

Jim Elliott was onboard the BAS Twin Otter to capture video of the breakout for Vaughan and colleagues. He says, "I've never seen anything like this before -- it was awesome. We flew along the main crack and observed the sheer scale of movement from the breakage. Big hefty chunks of ice, the size of small houses, look as though they've been thrown around like rubble -- it's like an explosion."

The breakout is the latest drama in a region of Antarctica that has experienced unprecedented warming over the last 50 years. Several ice shelves have retreated in the past 30 years - six of them collapsing completely (Prince Gustav Channel, Larsen Inlet, Larsen A, Larsen B, Wordie, Muller and the Jones Ice Shelf.)

Professor Vaughan continues, "Climate warming in the Antarctic Peninsula has pushed the limit of viability for ice shelves further south -- setting some of them that used to be stable on a course of retreat and eventual loss. The Wilkins breakout won't have any effect on sea-level because it is floating already,

but it is another indication of the impact that climate change is having on the region." Ted Scambos of the University of Colorado says,

"We believe the Wilkins has been in place for at least a few hundred years. But warm air and exposure to ocean waves are causing a break-up."

The Wilkins Ice Shelf covered an area of 16,000km^2 (the size of Northern Ireland). Having been stable for most of the last century it began retreating in the 1990s. A major breakout occurred in 1998 when 1000km^2 of ice was lost in a few months.

Satellite images processed at the US National Snow and Ice Data Center revealed that the retreat began on February 28 when a large (41 by 2.5 km) iceberg calved away from the ice shelf's south-western front. The edge of the shelf proceeded to crumble and disintegrate in a pattern that has become characteristic of climate-caused ice shelf retreats throughout the northern Peninsula, leaving a sky-blue patch spreading across the ocean surface compose of hundreds of large blocks of exposed old glacier ice. By 8 March, the ice shelf had lost just over 570 km^2, and the patch of disintegrated Antarctic ice had spread over 1400km^2. As of mid-March, only a narrow strip of shelf ice was protecting several thousand kilometres of potential further break-up.

The recent break out leaves a thin strip of ice between Charcot and Latady islands on the Antarctic Peninsula.

Climate warming has increased the volume of summer meltwater on glaciers, which has weakened ice shelves. Sea ice, which protects ice shelves from ocean swell, has reduced also as a result of warming temperatures.

The collapse of the 3250 km^2 Larsen B Ice Shelf took place in 2002. During the past 40 years the average summer temperatures in this region of the north-east Peninsula has been 2.2°C. The western Antarctic Peninsula has showed the biggest increase in temperatures (primarily in winter) observed anywhere on Earth over the past half-century.

The Antarctic Peninsula is an area of rapid climate change and has warmed faster than anywhere else in the Southern Hemisphere over the past half century. Climate records from the west coast of the Antarctic Peninsula show that temperatures in this region have risen by nearly 3°C during the last 50 years -- several times the global average and only matched in Alaska.

Background info

Ice sheet -- is the huge mass of ice, up to 4 km thick, that covers Antarctica's bedrock. It flows from the centre of the continent towards the coast where it feeds ice shelves.

Ice shelf -- is the floating extension of the grounded ice sheet. It is composed of freshwater ice that originally fell as snow, either in situ or inland and brought to the ice shelf by glaciers. As they are already floating any disintegration (like Larsen B) will have no impact on sea level. Sea level will rise only if the ice held back by the ice shelf flows more quickly into the sea.

This discovery follows the recent UNEP report that the world's glaciers are continuing to melt away. Data from 30 reference glaciers in nine mountain ranges show that between the years 2004-2005 and 2005-2006 the average rate of melting and thinning has more than doubled.

Adapted from materials provided by British Antarctic Survey.

http://www.sciencedaily.com/releases/2008/03/080325120714.htm

'Suspended Animation' Induced In Mice With Sewer Gas: Effects Are Reversible

When adminstered to mice in small, controlled doses, hydrogen sulfide -- the stinky gas found in sewers -- can produce what appears to be a state of suspended animation, researchers have found. (Credit: iStockphoto)

ScienceDaily (Mar. 25, 2008) — Low doses of the toxic gas responsible for the unpleasant odor of rotten eggs can safely and reversibly depress both metabolism and aspects of cardiovascular function in mice, producing a suspended-animation-like state. In the April 2008 issue of the journal Anesthesiology, Massachusetts General Hospital (MGH) reseachers report that effects seen in earlier studies of hydrogen sulfide do not depend on a reduction in body temperature and include a substantial decrease in heart rate without a drop in blood pressure.

"Hydrogen sulfide is the stinky gas that can kill workers who encounter it in sewers; but when adminstered to mice in small, controlled doses, within minutes it produces what appears to be totally reversible metabolic suppression," says Warren Zapol, MD, chief of Anesthesia and Critical Care at MGH and senior author of the Anesthesiology study. "This is as close to instant suspended animation as you can get, and the preservation of cardiac contraction, blood pressure and organ perfusion is remarkable."

Previous investigations into the effects of low-dose hydrogen sulfide showed that the gas could lower body temperature and metabolic rate and also improved survival of mice whose oxygen supply had been restricted. But since hypothermia itself cuts metabolic needs, it was unclear whether the reduced body temperature was responsible for the other observed effects. The current study was designed to investigate both that question and the effects of hydrogen sulfide inhalation on the cardiovascular system.

The researchers measured factors such as heart rate, blood pressure, body temperature, respiration and physical activity in normal mice exposed to low-dose (80 ppm) hydrogen sulfide for several hours. They analyzed cardiac function with electrocardiograms and echocardiography and measured blood gas levels. While some mice were studied at room temperature, others were kept in a warm environment -- about 98º F -- to prevent their body temperatures from dropping.

In all the mice, metabolic measurements such as consumption of oxygen and production of carbon dioxide dropped in as little as 10 minutes after they began inhaling hydrogen sulfide, remained low as long as the gas was administered, and returned to normal within 30 minutes of the resumption of a normal air supply. The animals' heart rate dropped nearly 50 percent during hydrogen sulfide adminstration, but there was no significant change in blood pressure or the strength of the heart beat. While respiration rate also decreased, there were no changes in blood oxygen levels, suggesting that vital organs were not at risk of oxygen starvation.

The mice kept at room temperature had the same drop in body temperature seen in earlier studies, but those in the warm environment maintained normal body temperatures. The same metabolic and cardiovascular changes were seen in both groups, indicating that they did not depend on the reduced body temperature, and analyzing the timing of those changes showed that metabolic reduction actually began before body temperature dropped.

"Producing a reversible hypometabolic state could allow organ function to be preserved when oxygen supply is limited, such as after a traumatic injury," says Gian Paolo Volpato, MD, MGH Anesthesiology research fellow and lead author of the study. "We don't know yet if these results will be transferable to humans, so our next step will be to study the use of hydrogen sulfide in larger mammals."

Zapol adds, "It could be that inhaled hydrogen sulfide will only be useful in small animals and we'll need to use intravenous drugs that can deliver hydrogen sulfide to vital organs to prevent lung toxicity in larger animals." Zapol is the Reginald Jenney Professor of Anaesthesia at Harvard Medical School.

The study was supported by grants from the National Institutes of Health and Linde Gas Therapeutics. Additional co-authors of the Anesthesiology report are Robert Searles, Binglan Yu, PhD, Fumito Ichinose, MD, and Kenneth Bloch, MD, MGH Anesthesia; and Marielle Scherrer-Crosbie, MD, MGH Cardiology.

Adapted from materials provided by Massachusetts General Hospital, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/03/080325083254.htm

Too Much Information? Study Shows How Ignorance Can Be Influential

ScienceDaily (Mar. 25, 2008) — University of Southern California researchers provide a challenge to the classic economic model of information manipulation, in which knowing more than anybody else is the key to influence. Instead, economists Isabelle Brocas and Juan D. Carrillo present a situation -- commonly observed in real life -- in which all parties have access to the same information, but one party still manages to control public opinion.

For example, a pharmaceutical company such as Merck may be obliged to make public the findings of all studies related to a new drug. Preliminary trials may indicate no short-term side effects, and the company may elect not to perform follow-up trials before releasing the drug on the market.

"Optimally, you want to provide enough information so the other party reaches a certain level of confidence, but stop once you reach that level," Brocas explained. "Otherwise, it may be the case that more information causes the confidence level to go down."

The study, "Influence Through Ignorance," is the first to thoroughly examine situations in which power comes from controlling the flow of public information, as opposed to the possession of private information.

As Brocas and Carrillo explain, there are secrets -- facts that are deliberately withheld -- and there are facts that are not known to anybody.

"It's not necessary to have extra information," Brocas said. "You can induce people to do what you want just by stopping the flow of information or continuing it. That's enough."

Notably, the party manipulating the flow of information must deliberately choose to remain uninformed as well -- which can backfire.

In Merck's case, a study released five years after the drug was introduced on the market showed that taking Vioxx significantly increased the risk of heart attacks. Merck funded the study, which had been intended to see if the painkiller was also effective against colon polyps.

Now, embroiled in a $4.85 billion settlement, the company claims that Vioxx poses no statistically significant long-term risk to the heart once it is no longer taken. This claim is disputed: Merck stopped monitoring patients after only a year, discontinuing the study once the drug was taken off the market.

Similarly, the researchers explain, the head of a council may terminate discussion and introduction of new evidence about, say, whether to continue searching for weapons of mass destruction. Calling for a vote when sentiment seems biased in a certain direction effectively curtails how much all members, including the chairperson, know about the issue at stake.

"Overall, the ability of to control the flow of news and remain publicly ignorant gives the leader some power, which is used to influence the actions of the follower," the researchers wrote. "Our result suggests that the chairperson, the President and media can bias the decision of the committee, electorate and public by strategically restricting the flow of information."

Brocas and Carrillo are in the midst of a follow-up to the study that gauges how well individuals intuitively understand the "influence through ignorance" phenomenon: "We're interested in whether people understand their ability to manipulate information and if they do it optimally," Brocas said.

The paper also provide implications for several important variants, such as how public opinion is affected when there is more than one source of information available to everyone and it is not excessively costly to obtain.

Competition, supported by media diversity and public sources of research funding, not only induces outlets to release more information but also causes the "influence through ignorance" effect to diminish -- and under certain circumstances to vanish -- the researchers found.

Journal reference: Brocas, Isabelle and Juan D. Carrillo, "Influence Through Ignorance." The RAND Journal of Economics: 38:4; 931-947. DOI: 10.1111/j.0741-6261.2007.00119.x

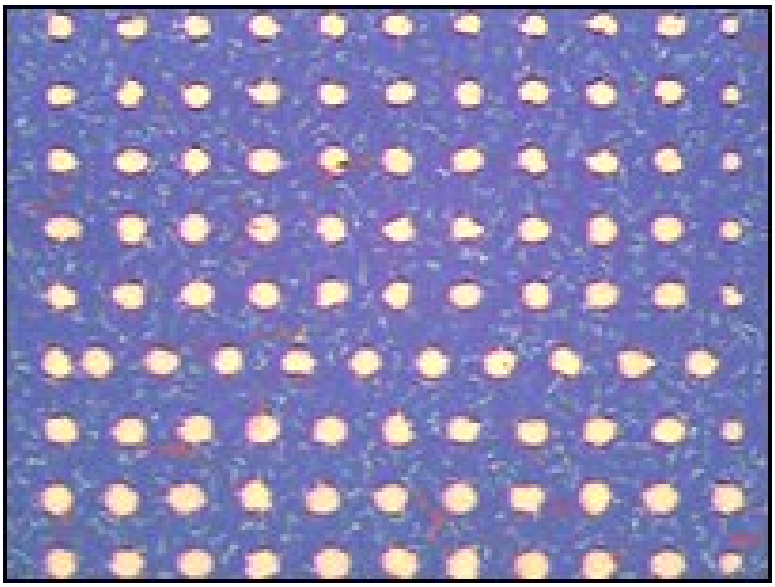
Adapted from materials provided by University of Southern California, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/03/080324130159.htm

Printing displays screen promise

By Jonathan Fildes
Science and technology reporter, BBC News

Flat-panel computer displays could be manufactured quickly and cheaply using novel inkjet printing equipment demonstrated by Japanese scientists.



The technique has already been used to produce the delicate wiring and tiny components needed for flexible screens.

The new inkjet head is able to produce drops 1,000 times smaller than standard printers, according to the researchers.

Writing in the journal PNAS, the team say the technique also improves the performance of printed circuits.

"The present work demonstrates the feasibility of employing inkjet technology… for electronic device applications," the University of Tokyo team write in Proceedings of the National Academy of Sciences.

Plastic power

Researchers have been exploring the use of printing for building electronic devices for a number of decades.

"Printed electronics could be much bigger than silicon as they have relevance to other applications such as lighting and photovoltaics," Dr Peter Harrop of research firm IDTechEx told BBC News.

The technique holds particular promise for so-called "organic" electronics, also known as plastic electronics.

These rugged devices are made from organic polymers - already used to make bin bags and solar panels, for example.

Making circuits this way would be cheaper and easier than producing conventional silicon devices which must be processed at high temperatures in costly clean room facilities.

Organic polymers are already manufactured by some firms.

For example, in 2004 electronics giant Philips showed off a concept flexible display, while other companies such as Cambridge Display Technology use the approach to make organic light-emitting diodes (LEDs).

In 2007, UK firm Plastic Logic announced that it would build a plant in Germany to produce flexible organic "control circuits" for use in "electronic paper" displays using the technology.

However, printing is still too crude for building high-performance devices such as thin film transistors (TFTs) - used in flat panel displays - which require circuitry just two microns (millionths of a metre) across.

Typically, a standard printer will produce features 50 microns across.

As a result, demonstrations of organic TFT screens have often relied on cumbersome and expensive masks - or stencils - to lay down circuits.

Slow worker

The new work from the University of Tokyo offers a new and more flexible approach.

"This technique can be applied for patterning high-purity electrically functional materials without preparing original patterning masks," the researchers write.

They were able to create finer details by applying a high voltage to the print head, causing drops in the inkjet to explode into one micron droplets.

Using ink made of silver nanoparticles held in a solvent, the researchers printed continuous lines two microns wide and components just one micron across.

Although these are large by current microprocessor standards - which can have features measured in nanometres (billionths of a metre) - the researchers believe it is good enough for use in TFT screens.

However, they acknowledge that the current prototype is too slow for commercial applications.

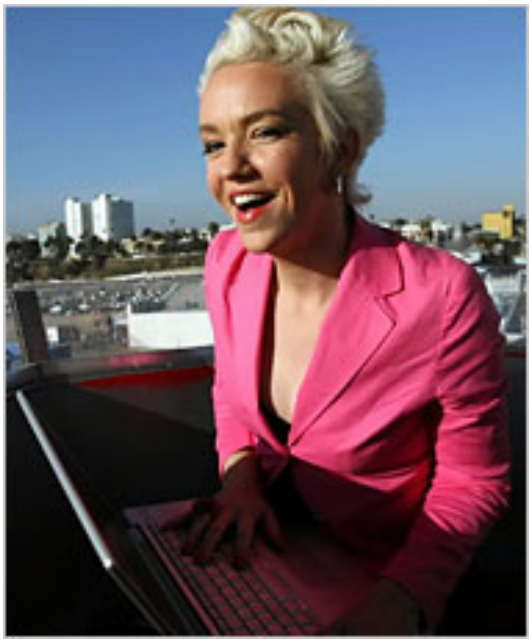
As a result, they suggest that their technique should only be used to pattern precise and critical features of circuitry, allowing lower resolution printers to lay down the rest of the pattern.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/technology/7312389.stm

Published: 2008/03/25 14:16:35 GMT

So You Want to Be a Blogging Star?

By PAUL BOUTIN



MARK CUBAN, the owner of the Dallas Mavericks, has a full plate. Besides his basketball team, the busy billionaire also owns part of a media company, and serves as chairman of the TV channel HDNet. He recently competed for five weeks on "Dancing With the Stars" on ABC. How on earth does he find time to blog?

Yet his site, blogmaverick.com, is one of the top 1,000 Weblogs, according to the search engine Technorati. Thousands read Mr. Cuban's posts every single day. If he can do it, why can't you?

"Don't go into blogging to make a living," Mr. Cuban warned in an e-mail message. Still, he and other top bloggers with day jobs agree most people could attract a following on the Web. And whether a person blogs to make a little money, to influence opinion or just for sheer ego gratification, amassing a large audience is the goal.

Here's what a number of successful bloggers with successful nonblogging careers say are the ways to think about getting into the business of blogging.

Don't expect to get rich. You can easily place automatically served ad banners from Google or AdBrite onto your blog. It is as simple as signing up with an ad service and placing a snippet of HTML code into your blog. Many of the ads will be specific to the topic of your posts and the service will credit your account whenever a reader clicks on one of the ads. You get a check only if the account builds to a set amount, $100 in the case of Google.

But Philip Kaplan, president for products at AdBrite, cautions that only one in six blogs draws even 500 page views a day. At that pace, you would make at most $45 a month, even if the site were decked out with full-page ads. Mr. Kaplan estimates only 3 percent of active sites make more than $1,000 a month from advertising.

"In 3.5 months we made $9.47," complained one blogger, Ted Dziuba, who yanked the automatic ads off of his site, Uncov.com.

ITUNES MOVIE RENTALS dubbed **"not ready for primetime."**

posted at 08:08 AM by **Glenn Reynolds**

PORKBUSTERS UPDATE: **Porkers of the Month:**

Citizens Against Government Waste (CAGW) named all 71 senators who voted against a one-year earmark moratorium March Porkers of the Month. The amendment to the fiscal year 2009 Budget Resolution was offered by Sen. Jim DeMint (R-S.C.) and had fourteen bipartisan co-sponsors including the support of all three presidential candidates.

"King of Pork" Sen. Robert Byrd (D-W. Va.) dismissed the earmark ban saying, "The idea that an all-knowing, all-powerful executive bureaucracy is more trustworthy than the elected representatives of the people when it comes to spending taxpayer dollars challenges the most basic tenet of our political system."

In a similar vein, Senate Majority Leader Harry Reid (D-Nev.) opposed the ban as "unrealistic" and even went so far as to erroneously claim that earmarking "has been going in this country for 230-some-odd years," and that "The Founding Fathers would be cringing to hear people talking about eliminating earmarks."

There is a proper system for projects to be vetted by agencies (the "all-knowing, all-powerful" bureaucrats) that's fallen by the wayside. Congress did not earmark extensively until the 1980s. Instead, Congress would fund general grant programs and let federal and state agencies select individual recipients through a competitive process or formula. The House and Senate Appropriations Committees named specific projects only when they had been vetted and approved by authorizing committees. Members of Congress with local concerns would lobby the president and federal agencies for consideration. The process was aimed at preventing abuse and allocating resources on the basis of merit and need.

Today, Appropriations Committee members arbitrarily pick winners and losers by earmarking funds for specific recipients.

It's not only wasteful, but it contributes -- significantly -- to corruption.

Write about what you want to write about, in your own voice. Mr. Dziuba, a software engineer at Persai, a Web news filtering service, began blogging out of sheer frustration with buggy, overhyped Web 2.0 applications. Uncov.com became a magnet for techies with similar complaints, and unintentionally raised awareness of Persai. Thousands of Uncov readers signed up for a test of Persai's service. Eventually, even advertisers took notice. "Once I started getting 2,000 to 3,000 page-views per day," he says, "advertisers started coming to me." He says advertisers have contacted him directly with offers of $750 for a month of display ads.

Mr. Cuban said: "Blog about your passions. Don't blog about what you think your audience wants. Post because you have something you are dying to write about."

Fit blogging into the holes in your schedule. "Deal with the rest of your life first," advises Glenn Reynolds, a law professor at the University of Tennessee who posts constantly throughout the day on his site, Instapundit.com. The volume and regularity has helped make his political opinion site one of the

most popular on the Internet. “The blog is best handled by inserting it into the small bits of free time that rest among the bigger chunks of your work.” Mr. Reynolds slips in posts between classes, as a break from writing law review articles and during slow time at home.

Just post it already! The hurdle that stops many would-be bloggers is fear of clicking the “Publish” button. Xeni Jardin, who juggles blogging at the quirky alternative-news site BoingBoing.net with a career as a freelance journalist for NPR, Wired magazine and others, resists the urge to polish her blog prose the way she would a radio script. “Don’t bottle up your ideas forever believing you have to hit the same kind of mature, complete, perfect point as you would with a magazine or newspaper article,” she says. “Blogs are always in progress.” Boing Boing’s bloggers are known for going back to posts to update them, adding new information and striking out factual errors.Keep a regular rhythm. Bloggers disagree on how often they should post. Mr. Reynolds and Ms. Jardin post several times a day. Mr. Cuban and Mr. Dziuba will go a week without a post. What matters, they agree, is that you establish a reliable rhythm for readers, so they know they can rely on you to have new material for them every so often.

Likewise, there’s no one right length for blog posts, but the most successful sites seem to have their own reliable formats, just like most professional publications. Mr. Reynolds rarely goes beyond two or three lines per post. Boing Boing entries run one to three paragraphs each, always with a photo. Mr. Cuban’s Blog Maverick entries can take up the entire browser window — when the guy’s on a roll, he’s on a roll.

Join the community, such as it is. There’s an unwritten rule — actually, it’s written about a lot on blogs — that you should always link back to bloggers whose ideas you repeat, or from whom you get a cool link to another site. Don’t use other bloggers’ photos or excerpt their writing without a prominent link back to the original. When in doubt, give credit.More to the point, linking to other bloggers is the best way to get them to link to you. Links from other bloggers increase your readership two ways: they send readers directly from other sites, and they raise your ranking in search engine results. A blogger who posts about a hot topic like Eliot Spitzer’s secret life, but has no inbound links, will lose out to one who already has dozens of inbound links from other sites.

Plug yourself. That’s what all the name-brand bloggers do. It’s not bad form to send a short note to a prominent blogger drawing his or her attention to a really good blog you wrote. Some bloggers place links to their sites in comments they write on more established blogs. (And some bloggers are on to the trick and refuse to allow it.)A more direct way to draw a crowd is to submit your blog posts to news aggregation sites like Digg, Fark and Boing Boing. Readers vote on how much they like the posts and new readers are drawn to the list of most popular posts. Granted, it helps if your blog post includes a home video of someone being attacked by a cat or really arrogant e-mail messages from a hedge-fund manager. Those get passed around virally in an instant.

Allowing readers to post comments on your blog not only increases readership, it provides a sense of live interaction with the rest of the world. But beware: the insulting comment is an Internet art form. “There’s a big difference between being flamed on someone else’s blog, and having them come do it in your own home,” Ms. Jardin said. In the end, the biggest threat isn’t that you’ll fail to learn to blog. It’s that if you blog regularly for long enough, and begin to get comments and links from other bloggers, you’ll have trouble doing your day job. “I can’t stop reloading,” confessed a colleague over IM after a post of hers began to attract dozens of comments. “I should be working, I know,” she added a few seconds later. “I have an unhealthy obsession.” Isn’t that the whole idea?

http://www.nytimes.com/2008/03/20/technology/personaltech/20basics.html?ex=1221883200&en=675e0d176b936890&ei=5087&WT.mc_id=TE-D-I-NYT-MOD-MOD-M038-ROS-0308-HDR&WT.mc_ev=click&mkt=TE-D-I-NYT-MOD-MOD-M038-ROS-0308-HDRhttp://www.nytimes.com/2008/03/20/technology/personaltech/20basics.html?ex=1221883200&en=675e0d176b936890&ei=5087&WT.mc_id=TE-D-I-NYT-MOD-MOD-M038-ROS-0308-HDR&WT.mc_ev=click&mkt=TE-D-I-NYT-MOD-MOD-M038-ROS-0308-HDR

Deadly Players on a Financial Killing Field

By MICHIKO KAKUTANI

THE FINDER

By Colin Harrison

322 pages. Sarah Crichton Books/Farrar, Straus & Giroux. $25.

Colin Harrison's New York is an-eye-for-an-eye, dog-eat-dog Darwinian world with similar map coordinates to Tom Wolfe's Manhattan and the Los Angeles of Raymond Chandler and James Ellroy. It's a place where glossy corporate offices and glitzy penthouses float upon a nasty, bilge-filled river of power and ambition, where malice and murder and mayhem lurk beneath supposedly civilized exchanges about cool restaurants and expensive shrubbery and hot new investments. It's a place where newly arrived immigrants from China and Mexico cross paths with highflying masters of the universe and mob-connected hooligans, a place where the newly globalized marketplace creates megadeals as well as mistrust, miscommunication and deadly misalliances. In short, a Weegee world on steroids and crystal meth.

In "The Finder," as in earlier thrillers like "Manhattan Nocturne" and "The Havana Room," Mr. Harrison combines a Balzacian eye for social detail and a poet's sense of mood with a sleazily sensationalistic plot — this time, so gory at one point and often so far-fetched that it seems more like a story line borrowed from a straight-to-video production than a high-budget feature film. The result is a grisly page turner of a novel that lacquers its cheap thrills with an upscale literary veneer, even as it leaves the reader with some memorably visceral snapshots of a nervous, profligate New York City, barreling headlong into the new millennium.

Ray Grant, the hero of "The Finder," like so many of the author's characters, is a man haunted by his past: a former fireman, he was gravely injured in the collapse of the World Trade Center on 9/11 and in an effort to put that trauma behind him has spent years traveling to other disaster zones as a relief worker. He has since returned home to New York to tend to his ailing father, a former cop who is terminally ill.

Ray doesn't like to talk a lot about his past, and he thought he'd found a happy match in Jin Li, a pretty young Chinese woman who is his equal in emotional reticence. Jin Li, it turns out, has a lot to hide. Ostensibly a supervisor for a company that cleans Midtown office buildings, she is actually an information thief who works for her wealthy brother Chen's Shanghai-based company, which has been using the stolen data to make millions in the stock market.

Now, suddenly, someone at one of those corporations — Good Pharma, a drug start-up with some promising new products in the pipeline — seems to have discovered what Jin Li is up to. After two of her employees are brutally murdered and she is nearly killed herself, Jin Li is on the run, and a worried Ray is hoping he can find her before her would-be assassins can.

Mr. Harrison enlivens this very basic thriller premise with some acerbic portraits of the people involved in the scam. Most of the victims at Good Pharma and its big money backers, we soon learn, are even greedier and more unsavory than Chen and Jin Li, and their instruments of revenge are twisted, small-time killers who make Ralph Cifaretto in "The Sopranos" seem almost normal.

There's Richie, a driver for a septic-waste company who discovers perverse new uses for his sewage truck; and Victor, a venomous hit man who's turned his bathtub into a tool of corpse disposal. There's Tom Reilly, a stressed-out Good Pharma exec who pops beta-blockers like breath mints to cope with his worries about the company's plummeting stock price; and Bill Martz, the company's buccaneering backer, who's determined to do anything — anything — to get his investment back.

In recounting these characters' nasty maneuverings, Mr. Harrison regales the reader with lots of intriguing details about tradecraft: how to make a deadly and virtually odorless cocktail; how to "lift" the price of a fast-moving stock temporarily by manipulating the international markets; how to smuggle encrypted computer disks safely into China. (You substitute the disk for one of those giveaway disks in a computer magazine, place the magazine in the center bale of a 27-bale pallet of magazines, shrink-wrapped and shipped weekly to China, where it is quickly located and removed by one of your partners in Shanghai.)

A lot of the developments in "The Finder" are completely preposterous, if you stop to think about them. But Mr. Harrison keeps his foot so firmly on the gas that he rarely gives the reader a chance to notice such problems. In doing so he succeeds in giving us a chilling, high-speed roller coaster of a ride that doubles as a sardonic sightseeing tour of the seamier side of New York City.

http://www.nytimes.com/2008/03/25/books/25kaku.html?th&emc=th

'Multiple Intelligences' at 25

The push toward group assignments. The rise of portfolios to document student progress. The backlash against the SAT and standardized testing, and the push to consider new ways that colleges might judge students' creativity and knowledge. The idea that IQ isn't destiny.

These and many other trends are intellectual offspring of the "multiple intelligences" movement that Howard Gardner launched 25 years ago with the publication of *Frames of Mind: The Theory of Multiple Intelligences.* Gardner, professor of cognition and education at Harvard University, gave a talk Monday at the annual meeting of the American Educational Research Association to mark the anniversary.

Gardner and others noted that for all of the influence he has had, there are plenty of people who disagree, and who believe in standardized tests in ways that Gardner finds both offensive and irrelevant. But at the gathering Monday, in New York City, the overflowing crowd was entirely supportive of Gardner's work, with people calling him their hero.

"Multiple intelligences" is the view that there is not a single measure of intelligence (like the traditional IQ), but rather a range of intelligences present in different ways in everyone. Gardner also challenged the notion that intelligence is largely inherited. While he does not discount the role of genetics and parenting in intelligences, Gardner focuses as much on the nurture part of parenting as nature and also holds that people can work to improve their intelligences. (Detailed explanations of his work can be fond on Gardner's Web site.)

In his talk, Gardner sought to debunk some of the myths that he said have arisen about his theories and their creation. He said, for example, that he his critics have charged repeatedly that he was looking for a way to challenge IQ tests. While Gardner freely acknowledges that he criticized IQ tests after his book came out, he said he didn't go looking for this battle. "I accepted the notion of intelligence," he said. Two other research efforts led him to his theory, he said. One was a study of artistically gifted children. The other was a study of people who have suffered brain injuries. Both of those experiences got him thinking about the different ways people have intelligence.

Gardner also said his book received a lift because of his title, although he said he can't remember when or how he made the "fateful decision" to refer to "intelligences" (in the plural). "I could have used 'talents' or 'competencies,' " he said. It was "intelligences" that grabbed people's attention, and that angered the testing establishment. "The psychometric community had believed that it owned intelligence" so by "pluralizing it," Gardner said, "I caused a commotion."

At the time he published his book, he had seven intelligences: musical, kinesthetic, logical/mathematical, spatial, linguistic, interpersonal, and intrapersonal. He has since added an eighth, naturalist, and his is mulling a ninth. While there are rumors that he is thinking of adding a spiritual intelligence, Gardner has been calling it "existential" intelligence, which will focus on skills related to asking the "big questions." Gardner stressed that an intelligence is defined both by the skills and the way they are learned and used, not just an individual interest or passion. He also stressed that he does not view intelligences as necessary good, and that he disagrees with those who — in a twist to his work — talk about "emotional intelligence" as if it is only a good thing. Gardner said it can be used for good or evil.

Looking ahead, Gardner sees considerable interest in his work, and expects it to lead in new directions. Among topics that interest him right now are how intelligences change with aging. His theory is that there are changes, but that intelligences do not disappear.

Gardner said that the fields of neurology and genetics have seen huge advances in scholarship since he wrote the book. He said that he largely believes that these findings have confirmed his views in that they have shown that many things are determined by multiple genes interacting in multiple ways, and the way the individual is raised and acts. But he said that as more advances take place, it will be time to review all of them and their relationship to his theories.

Abroad, he said he has been struck by growing interest in "multiple intelligences." In Denmark, the Danfoss Universe is an entire theme park — built without his playing any role — in which participants go through different exercises designed to expose them to different intelligences.

In terms of education, Gardner said he saw influence all over the place, from a few schools that have formally embraced his ideals to many teachers and professors who are inspired to change their modes of instruction. (Based on his own work, Gardner said, his courses no longer feature lectures.)

While he applauded the way many groups have criticized colleges that rely too much on the SAT, Gardner said he wasn't encouraging the development of a "multiple intelligence" based replacement. Gardner said that the problem isn't just the SAT, but the belief that measurement of that sort is valuable. "I don't believe one should go around and assess people's intelligences," he said. The only reason he said that he finds compelling to measure intelligence is to help someone who is having difficulty learning by identifying his or her problems.

As for the SAT, he said it might be useful – because of the way it is set up – in identifying people who have the skills to become law professors, but not much else.

In fact, Gardner said that one of his criticisms of the AERA is that so many researchers are on the quest for "the perfect test," without thinking that they might be on "a fool's errand." Although Gardner could no doubt benefit from developing a test of educational ideas following his ideas, he said he would not do so. He said that it was antithetical to his ideas to have a "seal of approval" from him, so he is content to watch many efforts based on his ideas, even if some go in directions he might suggest.

Linda Darling-Hammond, a professor of education at Stanford University, called Gardner her "personal hero," said that it's easy from today's vantage point to underestimate the influence of his book. Many teachers have of course for years felt that there was not a single "entry point" for student learning, and they had talked about ideas that are consistent with Gardner's theories. But Darling Hammond said that he "validated" these views and gave them a research framework.

In terms of his "big conceptual breakthroughs," she said that the idea that "intelligence is not fixed and not a single measure" has changed the way most teachers are trained. Likewise, the idea that education isn't about memorizing information to spit it back at the teacher, but is about "problems solving and performing tasks" is largely accepted today because of Gardner's work.

As to standardized testing, she said that among the many contributions Gardner made was to challenge the assumption that test producers know what society needs. "We don't want a nation of law professors," she said.

— Scott Jaschik

The original story and user comments can be viewed online at
http://insidehighered.com/news/2008/03/25/mi.

Delicate Partnership Between Coral And Algae Threatened By Global Warming

The symbiosis between coral and zooxanthellae is not only powerful enough to build the largest living organism on the planet, the Great Barrier Reef, but also underpins the economies and living standards of many tropical nations and societies who harvest their food from the reefs or have developing tourism industries. (Credit: iStockphoto)

ScienceDaily (Mar. 25, 2008) — Over two hundred million humans depend for their subsistence on the fact that coral has an addiction to 'junk food' - and orders its partners, the symbiotic algae, to make it.

This curious arrangement is one of Nature's most delicate and complex partnerships – a collaboration now facing grave threats from climate change.

The symbiosis between coral – a primitive animal – and zooxanthellae, tiny one-celled plants, is not only powerful enough to build the largest living organism on the planet, the Great Barrier Reef, but also underpins the economies and living standards of many tropical nations and societies who harvest their food from the reefs or have developing tourism industries.

The issue of whether the partnership is robust enough to withstand the challenges of climate change is driving a worldwide scientific effort to decipher how corals and their symbiotic algae communicate with one another, says Professor David Yellowlees of the ARC Centre of Excellence for Coral Reef Studies (CoECRS) and James Cook University.

"It's an incredibly intricate relationship in which the corals feed the algae and try to control their diet, and the algae in turn use sunlight to produce "junk food" – carbohydrates and fats – for the corals to consume.

"Where it all breaks down is when heated water lingers over the reef and the corals expel the algae and then begin to slowly starve to death.This is the bleaching phenomenon Australians are by now so familiar with, and which is such a feature of global warming."

The challenge for scientists is to understand the 'chemical conversation' that goes on between the corals and zooxanthellae, the genes which control it – and to explore whether corals which lose their primary partners can survive using other algae or must inevitably die.

Prof Yellowlees and Dr Bill Leggat will shortly release a new review of the current state of knowledge about the metabolism of the coral symbiosis in the journal Plant Cell and Environment.

"Coral symbiosis takes place mainly in clear, clean nutrient-poor waters where food is so scarce the corals need a partner to help feed them.

"We know for example the corals provide carbon as CO_2 which is processed by the algae to reprocess into carbohydrates and fats using energy from sunlight, so they can feed. It's a beautiful recycling process.

"The corals control the diet of the algae, to ensure it produces what they need. You could say they farm the algae, much as we farm crops.

"And the algae serve as the junk food chefs, providing the corals favourite food to order."

"Researchers in the Centre of Excellence are trying to understand the chemical and genetic basis for the conversation that goes on between a coral and its particular algae, and to establish whether, if it loses its algae in a bleaching event, it can establish the same relationship with a different strain of algae.

"In other words, how robust this symbiotic system is and whether it can withstand shocks from warming, ocean acidification, changes in sunlight levels and other likely impacts from human activity.

"The bottom line here is the survival of the Great Barrier Reef and coral reefs the world over."

Five times in the Earth's history corals have been wiped out, or very close to it, suggesting they are highly vulnerable to changes in ocean conditions, Prof. Yellowlees says. Some of these past events were probably triggered by past global warming and ocean acidification.

Some scientists have speculated whether corals in crisis can be given a helping hand by humans in the form of new symbiotic algae reared for the purpose – but these are very hard to grow outside of their coral hosts, and Prof Yellowlees is doubtful this is a practical solution to major bleaching events affecting thousands of square kilometres of reef.

More likely, he feels, is that cryptic strains of algae which currently play little role in the symbiosis but are present in corals may be able to take over the role of junk food chef and keep the corals going on their preferred diet. To what extent this can happen is not yet known.

Adapted from materials provided by ARC Centre of Excellence in Coral Reef Studies.

http://www.sciencedaily.com:80/releases/2008/03/080324091101.htm

How To Ignite, Retain Female Interest In The Study Of Science

Professor Sheryl Tucker holds "glow-in-the-dark atomic worms" and demonstrates that some dye molecules impart not only color but also additional properties when interacting with light. In this case, the glow results from the molecules interacting with black light. (Credit: Shane Epping/University of Missouri)

ScienceDaily (Mar. 25, 2008) — It might be surprising that 40,275 grams of slime, 4,030 ink dots, 3,876 M&Ms, 977 baby diapers, 489 cups of milk and a few electrified pickles can make a difference in the academic lives of adolescent girls, but it's true.

A challenge at the forefront of science education is the lack of women entering science-related fields, especially chemistry. National studies have shown that girls begin to lose interest in these areas around grade five. University of Missouri researcher Sheryl Tucker is combating this issue through the creation of a program that has kept girls interested in science. A recent study, being published in this week's Science magazine, found that Tucker's program is making a difference.

Nearly a decade ago, the Magic of Chemistry was created to encourage female adolescents in grades four through six to discover and maintain an interest in the sciences. Since then, it has served more than 2,500 girls and evolved from a one-time program with 35 Girl Scout participants to a bi-annual partnership program of rotating workshops: "Case of the Unsigned Letter," "Fun with Polymers" and "Chemistry of Color."

In each workshop young girls have the opportunity to take part in a variety of activities that include working with "goldenrod" indicator paper; creating slime, silly putty, and "moo glue;" and discovering the secrets of tie dying cotton. Each year, the workshops are organized in conjunction with National Girl Scout and National Chemistry weeks.

Through anecdotal research and a compilation of data, Tucker and MU assistant professor Deborah Hanuscin found that 81 percent of the girls who participated in the Magic of Chemistry professed an interest in learning more about science and the related careers. More than 40 percent of girls attended the workshops multiple times. Moreover, the outcomes of the workshops reflected the program's goal of teaching girls about science and its relevance in their daily lives.

"There was a critical national need to start a program targeting young girls with the purpose of igniting and retaining their interest in science at an age where national studies indicate they begin to lose this curiosity," said Tucker, an associate professor of chemistry and associate dean of the graduate school. "We must have girls entering the 'pipeline' before we worry about them leaking from it."

Tucker has partnered with the Girl Scouts-Heart of Missouri Council, which spans 18 mid-Missouri counties, to provide junior Girl Scouts in grades four through six with an experience to build confidence and knowledge of their scientific abilities. This program provides hands-on, inquiry-based workshops on a college campus with female undergraduate and graduate student role models. Girls are encouraged to ask questions and think critically after completing experiments that include practical applications to the real world.

"We hope that performing hands-on experiments and seeing women scientists in action will inspire the girls to explore science as a possible career choice," Tucker said. "For our country to reach its full potential, we must recruit the brightest people to science from all sectors of the population. We have shown that the Magic of Chemistry program can be part of the solution to closing this educational gap."

The Magic of Chemistry has received national accolades from the White House, National Science Foundation, American Chemical Society, and Girl Scouts of the USA.

Adapted from materials provided by University of Missouri-Columbia.

http://www.sciencedaily.com:80/releases/2008/03/080320150037.htm

New look for Eiffel Tower

- **Sean Dodson**
- The Guardian,
- Monday March 24 2008

Serero Architects' 120th anniversary redesign

The elegant, tapering signature of the Eiffel Tower is to be reshaped, altering the skyline of Paris, in time for the structure's 120th anniversary next year, the Société d'exploitation de la Tour Eiffel (Sete) has just announced.Serero Architects of Paris has won the competition to redesign the structure's public viewing platform and reception areas. The winning design (above), which will be 276 metres (905ft) above the ground, will not require any permanent modification of the existing structure. It will double the capacity of the public viewing area on the tower's top floor.

The new platform will be bolted onto the tower using a web of Kevlar, an extremely strong and lightweight carbon fibre used in the construction of racing cars and body armour. The new platform will use a cantilevered design similar to the way that an aircraft's wings are attached to the fuselage.

The design is already causing controversy, with critics questioning the wisdom of tinkering with the famous silhouette and spending money on upgrading a tourist attraction which attracts 6.9 million visitors a year. In a statement, a spokesperson for Sete explained that the plan to restructure the top of the tower aims to increase the quality of access. Average waiting times for the tower's elevators currently run at more than an hour at peak times.

Gustave Eiffel designed the tower as a temporary structure for the 1889 World's Fair. Initially rejected by the French public, it is now the most visited fee-charging monument in the world.

http://www.guardian.co.uk/world/2008/mar/24/france.design

Faculty Are Liberal — Who Cares?

One of the key arguments made by David Horowitz and his supporters in recent years is that a left-wing orientation among faculty members results in a lack of curricular balance, which in turn leads to students being indoctrinated rather than educated. The argument is probably made most directly in a film much plugged by Horowitz: "Indoctrinate U."

A study that will appear soon in the journal *PS: Political Science & Politics* accepts the first part of the critique of academe and says that it's true that the professoriate leans left. But the study — notably by one Republican professor and one Democratic professor — finds no evidence of indoctrination. Despite students being educated by liberal professors, their politics change only marginally in their undergraduate years, and that deflates the idea that cadres of tenured radicals are somehow corrupting America's youth — or scaring them into adopting new political views.

The study's authors — Gordon Hewitt of Hamilton College and Mack Mariani of Xavier University, in Ohio — write that they believe too much time has been spent debating the proper methodologies for testing whether there is a political imbalance on college faculties. If the danger of such an imbalance is that it is hurting students, the key question is whether the imbalance leads to an otherwise unexplainable shift in student political attitudes.

"The indoctrination argument is fundamentally an argument about *change*, the main point being that liberal professors indoctrinate students to become more liberal over the course of their college careers," the authors write. They set out to test the theory.

Based on a review of numerous other studies, as well as of specific surveys of faculty political attitudes at various private colleges, they do not contest that the faculty in higher education is liberal — significantly more so than the public at large. To measure student shifts, the scholars used data from the University of California at Los Angeles Higher Education Research Institute in which students are asked — as freshmen and seniors — to place themselves ideologically. Student data were examined for specific colleges for which data on faculty political leanings were available, and those colleges were grouped into three categories, based on politics. The student attitudes were examined in 1999 as freshmen and 2003 as seniors.

The scholars find some self-selection, with students who enter college as conservative slightly more likely to be found at relatively conservative institutions, and so forth. But over all, they found only slight shifts in political leanings (albeit to the left) during the students' four years. The analysis also found explanations other than faculty ideology — gender and wealth, for example — that correlate with the modest political shifts that took place. Whether the students attended a college that was more liberal or conservative did not correlate with the shift — which it would have had liberal professors been engaged in indoctrination, the authors write.

Even with the slight shift to the left of students, the authors write, college students graduate with a smaller share of people identifying as "far left" than does the 18-24 year old cohort of the U.S. population.

Political Orientations of Private College Students and the General Population

	Far Left	Liberal	Moderate	Conservative	Far Right
First-year students (1999)	1.6%	23.3%	47.8%	26.0%	1.3%
Seniors (2003)	3.6%	29.1%	42.8%	23.6%	0.9%
18-24 year old cohort in U.S.	5.3%	28.7%	38.3%	23.4%	2.1%

First, the authors suggest that the shifts are so modest that widescale indoctrination doesn't make any sense. They then go on to note other trends that they think explain the changes that do take place. For example, female students move more to the left during college than do male students. But this mirrors

the national political trend of women being the left of men, and the male and female college students are shifting political views (or not) based on the same faculties.

The authors acknowledge that there is another explanation for the minimal shift in student attitudes (at least for those who think professors are trying to indoctrinate): The professors on the left just might not be very good at indoctrination. But even if that is true, and the authors don't see evidence for that thesis, they believe that their analysis should be reassuring. "Regardless of any biases (intentional or unintentional) that professors bring to their teaching, the findings presented here should help alleviate the concern that students, on a widespread basis, are being forced to adopt the political positions of their liberal professors," the authors write.

It seems unlikely all concerns will be alleviated. Daniel B. Klein, a professor of economics at George Mason University, has written a number of articles about the political leanings of faculty members, focusing on the relative dominance of liberal, pro-government views. He faulted the new report on several grounds. He said that the authors could have done more tracing why students move from one political category of identification to another, and that they likely would have found some correlation with the political leanings of professors.

But even if the new study shows that indoctrination is not a widespread problem, Klein said that the new analysis addresses only one issue. The authors may have "usefully refuted" the massive indoctrination idea in an "interesting" way, but fear of indoctrination is not the only reason some people worry about the lack of political balance on college faculties.

"Even if it were true that students totally took a Bart Simpson attitude toward their college professors and were completely uninfluenced by them, I still think it would be a tragedy that during those four years, they were not getting the good stuff," Klein said. There is an "opportunity cost" when students graduate in four years and haven't been exposed (or have only been exposed to negative ideas about) Adam Smith and Friedrich Hayek and Milton Friedman, Klein said. Too many students graduate with a "complete zero" in those and other people worth knowing, Klein said. So political leanings matter, he added, even without the assumption of indoctrination.

— Scott Jaschik

The original story and user comments can be viewed online at http://insidehighered.com/news/2008/03/27/politics.

Lively Eye on Old Berlin: Wonderful Life, Ja?

By MICHAEL KIMMELMAN

BERLIN — Onstage and in various exhibitions Berlin this year has been celebrating the 150th anniversary of the birth of Heinrich Zille.

If you're not German, the name probably rings no bells. But here, where thousands turned out for his funeral in 1929, the famous and the luckless, and where a small museum is now devoted solely to him, it's a different story.

The other day a flood of Berliners lovingly pored over his sketches, prints, paintings, photographs and obscene drawings (did I mention he was a sometime pornographer?) on the last day of a large retrospective at the Academy of Arts. The show included a silent film based on a story he wrote, a melodrama of surpassing misery and tedium, ending with the murder-suicide of a young boy and an old woman. This seems to make Germans wax nostalgic the way Americans turn soft over old Saturday Evening Post covers and "It's a Wonderful Life."

The world is not such a small place, it turns out. That's one of the lessons of Zille's sesquicentennial. Certain types of stand-up comedy and other unexportable entertainments aside, art is today widely presumed to be universal. But countless Zilles still thrive in cultural byways of parochial pride.

Europeans, seemingly all the more so as unification continues to erase national borders, especially cherish their local heroes. When earthquakes struck Umbria a decade or so ago, it was notable how headlines around the world fretted about the basilica in Assisi and about frescoes by Cimabue and Giotto. These were famous objects, and the cost of art was most easily measured in dollars.

But Italians actually living there worried about their local churches and hometown painters, their Zilles. Constantino Centroni, then the superintendent for art in Umbria, summed it up best. "Each of us, myself included," he said, "has deep roots in these places where we were born, and each of us wants his church or bell tower because it represents his own culture and heritage."

He was talking about value, not cost.

Were he a Berliner, he might have been thinking of Zille, who was born near Dresden on Jan. 10 in 1858, but came to Berlin as a child and, like countless creative people who got themselves to capitals like Paris or New York, bound himself inextricably to the city. A friend, a Berlin native, at the mention of Zille's name recently, nodded. "Oh, yes, he's famous," she said, as if this were self-evident, explaining that everybody knows his pictures of the old mietskasernen, or rental barracks, with their hinterhöfe, or inner courtyards, now largely sanitized and vacant but once noisy places of earthen privies where mothers used to hang the family laundry and neighbors congregated en masse to escape airless apartments.

And then my friend added that her own grandmother was the kind of woman yelling down from one of the tenement windows to her children in Zille's drawings, even though my friend's grandmother was not nearly old enough to have been around when he made these pictures. Zille, she was basically saying, gave the city an enduring image of itself, a psychic imprint that went beyond depicting what the buildings and streets looked like.

By the early 1900s he came to be associated with the Berlin Secession, which included artists like Max Beckmann and Käthe Kollwitz, who admired him. But he made a name with the masses drawing illustrations for books and satirical newspapers — affectionate but never sentimental and often brutal pictures — and this was basically how he thought of himself too, as an illustrator. Modesty spared him the lugubriousness that weighs down much other art from the era.

In American terms, you could describe his subject as a German "Our Gang" and his style as akin to John Sloan's or George Bellows's, but the comparison falls into the trap of cultural equivalency, from which derives the earlier cost-value problem.

What matters is not how much he resembled other turn-of-the-last-century artists, in America or France or Britain or Russia, or in Germany for that matter — artists who like him trafficked in the new, modern metropolis and its swarming lower class, and who were often better artists, strictly speaking, than he was, which is to say more original, influential stylists.

What matters is why Berliners still love him now.

Partly the explanation can be found in his remarkable, almost offhand photographs of the city's underbelly — its back alleys and wide avenues and its garbage blowing in the wind and piles of dirt and tent villages on the edges of town — literally views of the end of the road. These encapsulated a notion of a place, Berlin, forever unfinished and, as locals like to say, kaput.

Zille intended his photographs to serve as inspiration for his drawings, in which he somehow added the smell of sweat and spilled beer and smoke and gaslight. Mobs jam his city scenes like circus clowns in a Volkswagen, and nothing takes place in private, least of all sex. Today, when much of Berlin feels empty and underpopulated, like an old amphitheater waiting to be filled, the ghosts of Zille's pictures take up available space in the imagination of people born here.

Global culture, by its nature, focuses on big names and rankings, to our general impoverishment. Some years ago John Willett, a scholar of German culture, contemplating the Secessionists, wrote about the dangers of embracing "a national or parochial view of art — as even the most enlightened are sometimes tempted to do," because "as you narrow your horizon in this way you no longer judge by the highest standards."

That's right.

But Zille reminds us of another lesson, that high standards are not the only standards that count when grappling with legacies like his. After all, the essence of his pictures was to show how monotonous life would be if we only cared about what's great in the world and not about everything local and particular and even sometimes untranslatable that actually makes life rich.

When Berliners celebrate Zille's birthday, this is what they're celebrating.

http://www.nytimes.com/2008/03/27/arts/design/27zille.html?_r=1&th&emc=th&oref=slogin

Suggestive Forms That Come Out of the Plywoodwork

By KEN JOHNSON

Bigger names have come and gone, but few careers in painting have been more consistently interesting over the last 25 years than Carroll Dunham's. Mr. Dunham, who is 58 and lives in New York, is known for his cartoonish paintings of blockheaded men with penis-shaped, bullet-firing noses, who star in hectic stories of sexual conflict and global warfare. Driven equally by rage, anxiety and hilarity, his paintings deliver an uncommonly potent combination of formal punch, narrative intrigue and metaphorical resonance.

It all began for Mr. Dunham back in the early 1980s, when he discovered plywood: from 1982 to 1987, he painted on ordinary pieces of laminated pine and later on panels covered with more exotic veneers, creating abstract, funny, strange duets of grainy wood and polymorphous paint.

Now a selection of these breakthrough paintings is on display in a vibrant, must-see exhibition, "Carroll Dunham: Paintings on Wood, 1982-87," at Skarstedt Gallery in Manhattan.

Like a teenage stoner doodling on his classroom desk, Mr. Dunham painted in response to the natural patterns and textures of his wooden surfaces. In different places he would copy the grain pattern in paint or trace it in pencil. He would draw circles around knots and then connect the knots with rubbery, tubular forms. Most conspicuous are brightly colored, bulbous shapes suggestive of sexual and digestive organs, gnarly tree branches, tumors and fungi.

While many elements seem to arise from an instinctive, quasi-primitive intuition, other parts suggest a more intellectually sophisticated play with the codes of Modern painting. In some works organic forms are entwined around straight-edged, horizontal stripes. In others there are passages of brushy Abstract Expressionistic marks or lines defining Cubist spaces. Confettilike fields of colored dots hark back to Pointillism, while cartoon outlines of bulbous forms evoke Pop Art's appropriation of comic books. R. Crumb's underground comic drawing is in the mix, as is the classic Surrealism of Dalí and Miró.

What these paintings add up to is a kind of delirious, barely contained psychic pluralism. Various dualities and contradictions play out: between wood and paint; abstraction and representation; geometry and biology; the phallic and the vaginal; body and mind; nature and culture.

In contrast to the monochrome painters of the '70s (Brice Marden and Robert Ryman) and the Neo-Expressionists of the '80s (Julian Schnabel and Anselm Kiefer), Mr. Dunham did not try to achieve formal or stylistic unity in these works. Painting was a joy-riding vehicle for realizing and delighting in the contradictions and complexities of consciousness.

This exhibition offers a revelatory window into an extraordinarily fertile time in recent art history, yet the paintings don't seem at all dated. Exuberantly alive to their own possibilities, they feel as fresh as if they had been made yesterday.

"Carroll Dunham: Paintings on Wood, 1982-87" continues through April 5 at Skarstedt Gallery, 20 East 79th Street, Manhattan; (212) 737-2060, skarstedt.com.

http://www.nytimes.com/2008/03/25/arts/design/25dunh.html?ref=design

Nice Tower! Who's Your Architect?

By NICOLAI OUROUSSOFF

THE HL23 tower, planned for a site on 23rd Street in Chelsea, is the kind of commission Neil Denari has being waiting for his entire working life. Mr. Denari, a Los Angeles architect who once ran the Southern California Institute of Architecture, has labored on the profession's periphery for decades. But because of a recent demand for name-brand residential architecture in New York, he is finally getting a chance to test his ideas in the real world.

And Mr. Denari is not alone here. His building is part of an eruption of luxury residential towers already constructed or being designed by the profession's most celebrated luminaries. In the last five years more than a dozen have been completed; maybe a dozen more are scheduled to break ground this year. They range from soaring, elaborately decorated towers by international celebrities like Jean Nouvel and Frank Gehry to smaller but equally ambitious architectural statements by lesser-known talents like Mr. Denari.

With the financial markets in an ominous roil, the realization of this boomlet is far from guaranteed. But even if only a few more are completed, the final effect of these buildings could be the greatest transformation in the city's physical identity since the 1960s. Bold and formally elaborate — some would say showy — they reflect a mix of attitudes and styles that the city has never seen.

They also reveal an unmistakable shift in the appetites and aspirations of an elite group of New Yorkers for whom an apartment's architectural pedigree has become a new form of status symbol. Rather than disappear behind the shielding bulwark of Park Avenue apartment houses or into anonymous loft buildings as previous generations of wealthy New Yorkers did, these residents want to live in structures that telegraph their wealth and uniqueness.

Decades from now these preening, sometimes beautiful, sometimes obtrusive towers could well be the last testament to this century's first gilded age.

Manhattan has a long history of rich people wanting to live in the clouds, wrapped in new architectural marvels. When the city's first luxury residential towers were built in the late 19th century, they were marketed as technological triumphs, packed with new features like elevators, steam heating and gas ranges. Hotel-style amenities like doormen and laundry services cut down on the cost of private servants. And at a time of civil unease and class tensions, the heights of such buildings (some with as many as 11 stories) were seen as a way for the wealthy to escape the grit of the street.

Over the next half century or so the obsession with technology was matched by a need to open up the booming metropolis to light and air. Within their elaborate Italianate facades, the internal courtyards of luxury housing blocks like the Dakota and the Ansonia were creative efforts to alleviate urban congestion. Later such buildings were followed by the Modernist white-brick structures of the 1960s, with their light-filled apartments and transparent lobbies overlooking garden courts.

The flamboyant exteriors of the recent crop of signature buildings represent yet another shift in architectural priorities. Whereas technological innovation once focused on the interior workings of the machine — from plumbing to structural innovations like steel frames — most of today's architectural innovations are expressed through the buildings' exterior forms.

Not everyone is happy with this state of affairs. Traditionalists, still stung by the rise of Modernism, see the current crop of signature buildings as a break with the historical street front. Mostly, they criticize these works on aesthetic grounds: as flashy expressions of architectural vanity.

It's true that some of the new buildings are ostentatious. When workers broke ground two years ago on Herzog & de Meuron's 40 Bond in the East Village, the building was hailed as one of the city's first serious residential projects by an international celebrity firm. Today the cast green glass facade feels slick and mannered. An elaborate gate meant to resemble a three-dimensional work of graffiti is an embarrassing effort to tap into a bygone underground scene. (Nevertheless all of the multimillion-dollar units were sold before the building was close to completion.)

But the city has also been starving for innovative architecture. And to my mind the greatest residential projects of the last decade have managed to balance aesthetic freedom with a nuanced understanding of their surroundings. Rather than mimic period styles, such buildings are a physical expression of the needs and demands of the environments they inhabit.

The muscular forms of Mr. Gehry's 74-story Beekman Street Tower, being built near City Hall, are like the chiseled setbacks and crisp vertical lines of Rockefeller Center's RCA tower and the neo-Classicism of Stalin-era Moscow. Yet its crinkled stainless steel is a wonder; as light flickers across the facade, it will seem to dissolve into rivulets of water.

Similarly the slim, tapered form of Mr. Nouvel's 75-story condominium and hotel tower, planned for a site alongside the Museum of Modern Art on West 53rd Street, is a play on traditional New York skyscrapers like the Chrysler Building. The design of its taut glass skin suggests shards of glass falling from the sky. A weblike pattern of beams crisscross the exterior, as if the building were bracing itself against psychological and economic forces pressing in from all sides.

Such towering aesthetic triumphs are being joined by a number of designs that combine a strong structural vision with a critique of Modernist ideas about purity. Their contorted shapes are meant to reflect the collision of forces that shape contemporary cities, from zoning regulations to the private desires of residents.

Like many of the smaller luxury high-rises being built today, Mr. Denari's building will be squeezed onto a tiny lot — in its case, between another high rise on 23rd Street and the High Line, a park to be built on a stretch of abandoned elevated railway. Scheduled to break ground later this month, the 14-story building will twist and swell as it rises to take advantage of views up and down the park. At some junctures its metal skin will peel open to frame the views; at others, a grid of diagonal braces — their pattern reflecting the uneven stresses placed on the building's frame — will evoke the stays of a corset.

Across town that strategy can be experienced in Bernard Tschumi's recently completed Blue Building. Decorated in a checkerboard pattern of irregular blue and black windows, the structure bulges out to one side as it rises above the surrounding tenements, as if trying to pack as much real estate as possible onto its Lower East Side lot. The effect of the distortions is that the building is constantly changing as you move around it, like an enormous piece of costume jewelry twinkling in the light.

In other cases, however, the seemingly noble aim of working within a neighborhood's character leads to lackluster design. The scale and placement of the windows on the facade of Deborah Berke's new limestone-and-steel apartment complex just across from 40 Bond, for example, does echo the neighboring buildings. But the results are tepid.

The current infatuation with brand names has also opened up the profession to new and unexpected voices. It's been a good while since I have written about a building as crudely cobbled together as Julian Schnabel's Palazzo Chupi, which was completed last year on West 11th Street, for example. A bright pink stucco box adorned with Venetian-style arched windows, it looks as if it had been plopped atop an existing warehouse. Still, the overblown scale and collision of styles have a refreshing bluntness; in some ways it's closer in spirit to the vernacular architecture of the Far East, an atavistic approach that is a nice counterpoint to the hyper-modernity of so much contemporary work.

As a whole, the best of these buildings are gorgeous additions to the skyline, a relief from decades of creative stagnation.

This external bravura, however, makes the mind-numbing conventionality of their interiors so much more disappointing. As a rule, most of the architectural fireworks in these buildings tend to stop at the lobby, and there are no compelling ideas about how social spaces should be organized. The interiors of these

buildings could have been designed by real-estate marketers, and in many cases they more or less were. Despite the expensive appliances and luxurious finishes at 40 Bond Street, for example, the floor plans are generic: one-, two- and three-bedroom apartments and town houses with loftlike living spaces and kitchens at one end. The same can be said for virtually all of the projects I have mentioned so far.

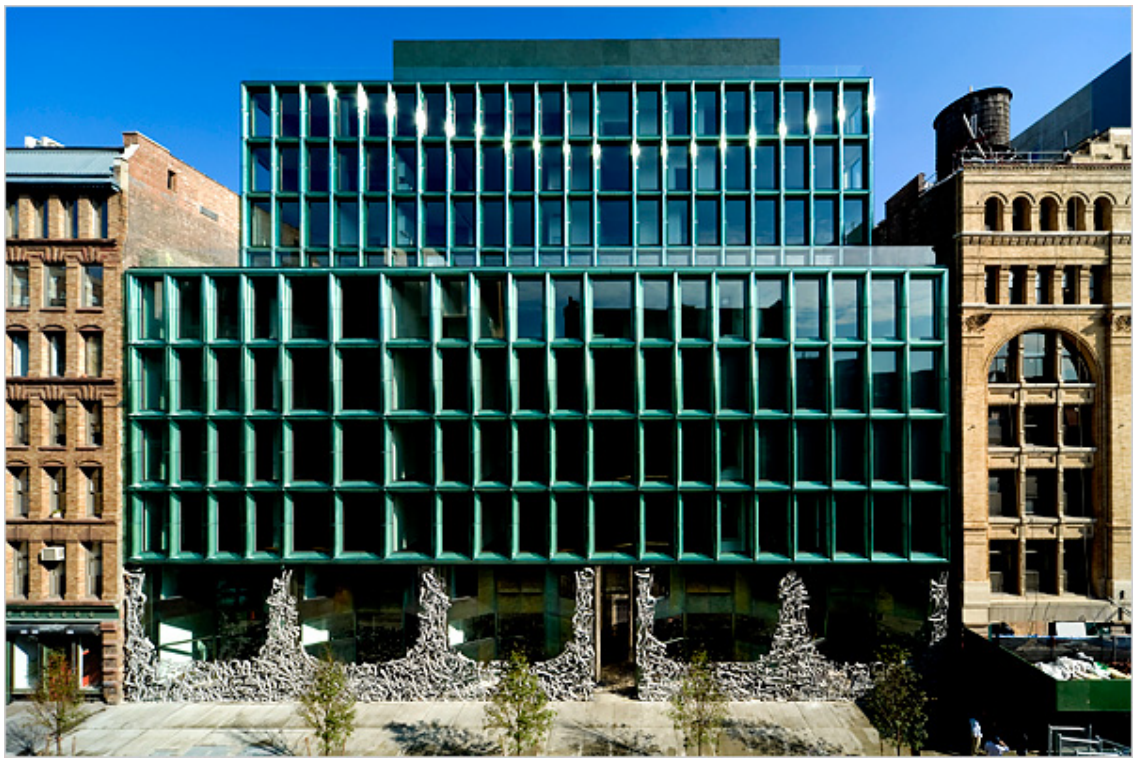
Some architects were able to work around conventional real estate wisdom by forging exteriors that would impose a specific experience on the interior spaces. By the time the consultants at Forest City Ratner, the developer behind Mr. Gehry's Beekman building, realized that the wrinkled walls of the architect's tower would be mirrored inside the apartments, for example, it was too late to change without a costly reworking of the design.

Similarly, the canted walls and steel cross bracing of Mr. Denari's HL23 building will have a powerful effect on the interior. But from the point of view of a real-estate consultant, this will only make it harder to hang curtains.

Yet neither Mr. Gehry nor Mr. Denari was allowed to tinker with the actual layout of the apartments, which will be the same loftlike interiors that have become as much of an urban cliché as the gated Mediterranean community has in suburbia.

Admittedly, New York has never been known for bold experimentation in interior space. There has been nothing comparable in Manhattan to Le Corbusier's 1952 Unité d'Habitation in Marseilles: a giant slab packed with an endless variety of intricately interlocking apartments. Technological innovations here have never been coupled with that type of social experimentation.

But the banal interiors of New York's luxury apartment buildings may also have to do with our reactionary times. Among architects it is now common wisdom that today's clients are less willing to upend conventional living arrangements than earlier generations were. Sulan Kolatan and William MacDonald, whose firm is one of the few that has challenged clients to be more adventuresome, have had a typically frustrating experience. In their 1991 design for the Shapiro Fields apartment on the Upper



West Side, they transformed a prewar space with the typical formal entry and maid's quarters into a fluid sequence of rooms connected by a sequence of surgical cuts and strategically spaced mirrors.

Less than two years later the owner sold it, and the new occupant immediately converted it back to its original prewar state.

Later, in the late '90s these architects built the O/K Apartment, which featured molded orange surfaces that extended seamlessly from the bathtub to the bed to the hall. It was intended as a prototype for a new kind of millennial living. There were no takers.

This resistance may not be surprising for a class of people who increasingly want the same residential experience whether they are in Moscow, Paris or New York. Arriving in New York by private jet — or wishing they had — they tend to view their homes as personalized hotel rooms, and developers are more than happy to indulge them. Many of the new buildings provide the same kind of services you would find in a luxury hotel, from breakfast in bed to spa treatments to dog walkers.

Add to this the subtle effects of technology. The discovery of nonreflective glass has meant that the play off reflections that once animated glass high-rises has been replaced by a greater degree of transparency, one that has reinforced the buildings' image as architecture for exhibitionists. Meanwhile the growing use of computer software has tended to smooth out designs' rougher edges, often leading to slick, lifeless interiors in pretty wrappers.

Yet the biggest shift of all may have to do with where we focus our most valuable architectural resources today. The city has seen monuments to personal ostentation before, from the Vanderbilt chateau on Fifth Avenue at 52nd Street to the Carnegie mansion 40 blocks north. But for the most part New York's most memorable architectural achievements in the 20th century were either major civic buildings or monuments to corporate power.

Carrère & Hastings's New York Public Library. Reed & Stern and Warren & Wetmore's Grand Central Terminal. Raymond Hood's Rockefeller Center. Mies van der Rohe's Seagram building. All were profound reflections of the cultural values of their day.

Today that balance has been reversed. While several outstanding new civic buildings have been completed here in recent years, from Sanaa's stacked-box New Museum of Contemporary Art on the Bowery to Renzo Piano's archaeologically artful expansion of the Morgan Library & Museum, the abundance of luxury apartment buildings and the wealth of talent enlisted proclaim their outsize significance. And some of these architects rarely get to work on the kind of public projects that probably would have been part of their portfolio in New York half a century ago.

We all like to look at pretty baubles, even if they tend to be hollow. But a generation from now we may look back at these condo buildings as our generation's chief contribution to the city's history: gorgeous tokens of a rampantly narcissistic age.

http://www.nytimes.com/2008/03/23/arts/design/23ouro.html?ref=design

Evolution Of New Species Slows Down As Number Of Competitors Increases

Newly fledged Great Tit family being fed by mother. (Credit: iStockphoto/Charlie Bishop)

ScienceDaily (Mar. 28, 2008) — The rate at which new species are formed in a group of closely related animals decreases as the total number of different species in that group goes up, according to new research.

The research team believes these findings suggest that new species appear less and less as the number of species in a region approaches the maximum number that it can support.In order for new species to thrive, they need to evolve to occupy their own niche in the ecosystem, relying on certain foods and habitats for survival that are sufficiently different from those of other closely related species.

Competition between closely related species for food and habitat becomes more intense the more species there are, and researchers believe this could be the reason for the drop-off in the appearance of new species over time.

Dr. Albert Phillimore, from Imperial College London's NERC Centre for Population Biology, lead author on the paper, explains: "The number of niches in any given region is finite, and our research supports the idea that the rate of speciation slows down as the number of niches begins to run out.

"In essence, it seems like increased competition between species could place limits on the number of species that evolve."The new study used detailed analysis of the family trees, or phylogenies, of 45 different bird families. By examining the rate at which new species have arisen in each of these trees over a period of millions of years, scientists saw that the rate of appearance of new species seemed to be much higher in the early stages of the family tree, compared to more recent lower rates.

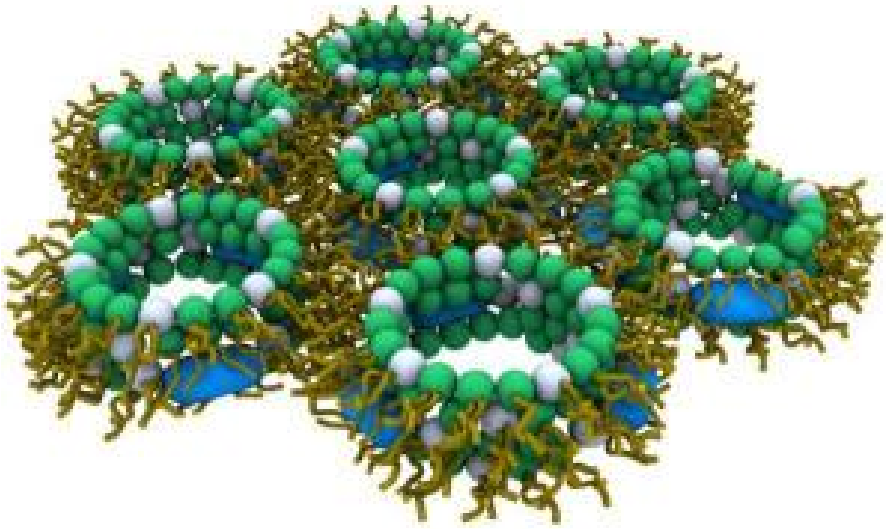
For example, when the researchers examined the phylogeny of tit birds they found that some 10 million years ago, species formed rapidly but this rate has slowed over time to perhaps a quarter of the initial rate.

Journal reference: Phillimore AB, Price TD (2008) Density-dependent cladogenesis in birds. PLoS Biol 6(3): e71. doi:10.1371/journal.pbio.0060071

Adapted from materials provided by PLoS Biology, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com:80/releases/2008/03/080325083359.htm

Countering An Approaching Water Crisis



One new approach to disinfection was described last spring by researchers from the University of Illinois at Urbana-Champaign. They demonstrated a new class of synthetic antimicrobials that disinfect by inducing negative curvature in bacterial membranes, generating pores. (Credit: Gerard Wong, University of Illinois at Urbana-Champaign)

ScienceDaily (Mar. 28, 2008) — As growing demand for clean water stretches even the resources of the world's largest industrialized nations, scientists and engineers are turning to new technology and novel ideas to find solutions.

Mark Shannon of the University of Illinois at Urbana-Champaign joined a slate of world leaders in water resource research to address this crisis in a review paper in the March 20, 2008, issue of Nature.

"As dire as the growing problems are with a lack of enough clean water in the world, I have a great deal of hope that many of these problems can be solved by increasing research into the science and technology of water purification," said Shannon, who also serves as director of the National Science Foundation (NSF) Center of Advanced Materials for the Purification of Water with Systems (WaterCAMPWS).

With an emphasis on environmentally friendly tools for killing microbes, membrane bioreactors, nanoscale filtration, and a host of other advanced technologies, the review paper addresses how these systems can be used for disinfection, decontamination, reuse and reclamation, and desalination of water supplies across the globe."Clearly, a coordinated, multi-faceted approach is needed to deal with complex water issues," said Geoffrey Prentice, the NSF program director supporting the WaterCAMPWS center and currently on detail to the U.S. Mission to UNESCO in Paris.

"Ours is one of several agencies working to address the water crisis before it grows worse. Working with the U.S. Mission to UNESCO, we are highlighting the international dimensions of inadequate water supplies, which lead to millions of deaths each year, primarily in the developing world," Prentice added.

One example is a June 27 international water forum at the Department of State at which NSF, UNESCO and a number of agencies and international organizations will be joining Shannon and other technical experts to confront some of the most pressing global water needs.

Adapted from materials provided by National Science Foundation.

http://www.sciencedaily.com/releases/2008/03/080321125832.htm

Toward A New Generation Of Vaccines For Malaria And Other Diseases

Scientists have identified key protein fragments in infectious diseases and are reporting a strategy that could usher in more effective vaccines. (Credit: Courtesy of Queensland Health)

ScienceDaily (Mar. 28, 2008) — Researchers in Colombia, South America, describe a new strategy for designing the next generation of synthetic vaccines that could lead to more effective treatments for fighting malaria, tuberculosis, AIDS and other infectious diseases. These conditions kill more than 17 million people around the world each year.

Traditional vaccine development involves the use of microorganisms to trigger an immune response by the body. However, this approach can produce unwanted side effects and may be ineffective against microbes with extremely complex infection cycles. Therefore, researchers agree on the need for better vaccine.

In the study, Manuel E. Patarroyo and his son Manuel A. Patarroyo describe a completely new strategy for designing more effective vaccines, which are chemically synthesized in the laboratory without the use of microorganisms. They identified dozens of key protein fragments involved in the complex infection process of the malaria parasite, from which they designed, specifically modified and synthesized chemically some of the most promising malaria vaccine candidates that have been tested to date.

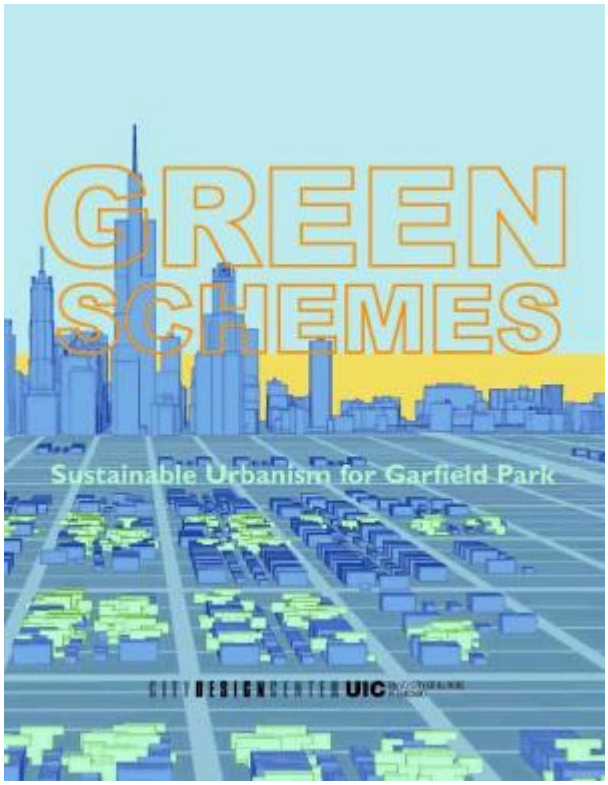
Likewise, identifying the disease-related protein fragments involved in the complex infection process of other transmittable diseases could result in new, more effective vaccines to help fight these diseases, the scientists say. They also note that this innovative approach establishes for the first time the emerging rules for the development of vaccines against diseases scourging humankind.

The study "Emerging Rules for Subunit-Based Multiantigenic, Multistage Chemically Synthesized Vaccines" appears in the current issue of ACS' Accounts of Chemical Research (http://dx.doi.org/10.1021/ar700120t)

Adapted from materials provided by American Chemical Society, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/03/080324090552.htm

Designing Environmentally Friendly Communities



"Green Schemes" offers design ideas on four scales: building, street, neighborhood, and community area. (Credit: Image courtesy of University of Illinois at Chicago)

ScienceDaily (Mar. 28, 2008) — The University of Illinois at Chicago's City Design Center has produced a 96-page electronic publication illustrating ideas for green development in East Garfield Park as a case study for use by Chicago neighborhoods and individuals.

"Green Schemes: Sustainable Urbanism in Garfield Park" presents 80 concepts such as filtration gardens, narrowed roadways, and an elevated bikeway adjacent to the Green Line tracks. Graduate students and faculty in urban planning, architecture and landscape architecture conceived the schemes in five studios taught at UIC's City Design Center.

Their designs for urban agriculture, public ways, building technology, manufacturing, transportation and other planning elements address four scales of development: building, street, neighborhood, and the two-square-mile community.

The designers chose East Garfield Park as a mixed-income neighborhood with many underused properties. They describe the area's current and potential assets, including winding boulevards, Victorian housing, a business district primed for revitalization, industrial buildings, a rapid transit line, the City of Chicago's Center for Green Technology, and Garfield Park -- one of the city's largest parks, featuring a restored botanical conservatory.

A steering committee drawn from UIC, the Chicago Park District and the Chicago departments of environment, housing, planning/development and transportation oversaw the process. "Green Schemes" shows that planners, architects and landscape architects can make green design feasible by collaborating, said Susanne Schnell, research assistant professor in the City Design Center.

"We generated ideas that we call 'park-centric' by working with landscape architecture faculty from the University of Illinois at Urbana-Champaign," Schnell said. "Some ideas might be demonstrated in pilot projects with city departments, and all are intended to inspire greater dialogue about green design in Chicago neighborhoods."The studios, taught throughout the 2006-07 academic year, received funding from the Richard H. Driehaus Foundation and Shaw Environmental and Infrastructure Inc.

"Green Schemes" in PDF format will be available as a free download from the website of the Chicago Department of Environment. A limited number of printed copies will be distributed to local officials and planners.

Adapted from materials provided by University of Illinois at Chicago.

http://www.sciencedaily.com/releases/2008/03/080326195000.htm

Increased Knowledge About Global Warming Leads To Apathy, Study Shows

ScienceDaily (Mar. 28, 2008) — The more you know the less you care -- at least that seems to be the case with global warming. A telephone survey of 1,093 Americans by two Texas A&M University political scientists and a former colleague indicates that trend, as explained in their recent article in the peer-reviewed journal Risk Analysis.

"More informed respondents both feel less personally responsible for global warming, and also show less concern for global warming," states the article, titled "Personal Efficacy, the Information Environment, and Attitudes toward Global Warming and Climate Change in the USA."

The study showed high levels of confidence in scientists among Americans led to a decreased sense of responsibility for global warming.

The diminished concern and sense of responsibility flies in the face of awareness campaigns about climate change, such as in the movies An Inconvenient Truth and Ice Age: The Meltdown and in the mainstream media's escalating emphasis on the trend.

The research was conducted by Paul M. Kellstedt, a political science associate professor at Texas A&M; Arnold Vedlitz, Bob Bullock Chair in Government and Public Policy at Texas A&M's George Bush School of Government and Public Service; and Sammy Zahran, formerly of Texas A&M and now an assistant professor of sociology at Colorado State University.

Kellstedt says the findings were a bit unexpected. The focus of the study, he says, was not to measure how informed or how uninformed Americans are about global warming, but to understand why some individuals who are more or less informed about it showed more or less concern.

"In that sense, we didn't really have expectations about how aware or unaware people were of global warming," he says.

But, he adds, "The findings that the more informed respondents were less concerned about global warming, and that they felt less personally responsible for it, did surprise us. We expected just the opposite.

"The findings, while rather modest in magnitude -- there are other variables we measured which had much larger effects on concern for global warming -- were statistically quite robust, which is to say that they continued to appear regardless of how we modeled the data."

Measuring knowledge about global warming is a tricky business, Kellstedt adds.

"That's true of many other things we would like to measure in surveys, of course, especially things that might embarrass people (like ignorance) or that they might feel social pressure to avoid revealing (like prejudice)," he says.

"There are no industry standards, so to speak, for measuring knowledge about global warming. We opted for this straightforward measure and realize that other measures might produce different results."

Now, for better or worse, scientists have to deal with the public's abundant confidence in them. "But it cannot be comforting to the researchers in the scientific community that the more trust people have in them as scientists, the less concerned they are about their findings," the researchers conclude in their study.

Adapted from materials provided by Texas A&M University, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/03/080327172038.htm

Exquisite Photon Control On A Silicon Chip Is Major Advance Toward Quantum Computing

Generating and detecting single photons. (Credit: Photo by Carmel King)

ScienceDaily (Mar. 28, 2008) — A team of physicists and engineers has demonstrated exquisite control of single particles of light -- photons -- on a silicon chip to make a major advance towards the long sought after goal of a super-powerful quantum computer.

Dr Jeremy O'Brien, his PhD student Alberto Politi, and their colleagues at Bristol University have demonstrated the world's smallest optical controlled-NOT gate -- the building block of a quantum computer.

The team were able to fabricate their controlled-NOT gate from silica wave-guides on a silicon chip, resulting in a miniaturised device and high-performance operation.

"This is a crucial step towards a future optical quantum computer, as well as other quantum technologies based on photons," said Dr O'Brien.

Quantum technologies with photons

Quantum technologies aim to exploit the unique properties of quantum mechanics, the physics theory that explains how the world works at very small scales.

For example a quantum computer relies on the fact that quantum particles, such as photons, can exist in a "superposition" of two states at the same time -- in stark contrast to the transistors in a PC which can only be in the state "0" or "1".

Photons are an excellent choice for quantum technologies because they are relatively noise free; information can be moved around quickly -- at the speed of light; and manipulating single photons is easy.

Making two photons "talk" to each other to realise the all-important controlled-NOT gate is much harder, but Dr O'Brien and his colleagues at the University of Queensland demonstrated this back in 2003 [Nature 426, 264].

Photons must also "talk" to each other to realise the ultra-precise measurements that harness the laws of quantum mechanics -- quantum metrology.

Last year Dr O'Brien and his collaborator Professor Takeuchi and co-workers at Hokkaido University reported such a quantum metrology measurement with four photons [Science 316, 726].

Silica-on-silicon wave-guide quantum circuits

"Despite these and other impressive demonstrations, quantum optical circuits have typically relied on large optical elements with photons propagating in air, and consuming a square metre of optical table. This has made them hard to build and difficult to scale up," said Alberto Politi.

"For the last several years the Centre for Quantum Photonics has been working towards building controlled-NOT gates and other important quantum circuits on a chip to solve these problems," added Dr O'Brien.

The team's chips, fabricated at CIP Technologies, have dimensions measured in millimetres.

This impressive miniaturisation was permitted thanks to the silica-on-silicon technology used in commercial devices for modern optical telecommunications, which guides light on a chip in the same way as in optical fibres.

The team generated pairs of photons which each encoded a quantum bit or qubit of information. They coupled these photons into and out of the controlled-NOT chip using optical fibres. By measuring the output of the device they confirmed high-fidelity operation.

In the experimental characterisation of the quantum chips the researchers also proved that one of the strangest phenomena of the quantum world, namely "quantum entanglement", was achieved on-chip. Quantum entanglement of two particles means that the state of either of the particles is not defined, but only their collective state.

This on-chip entanglement has important applications in quantum metrology.

"As well as quantum computing and quantum metrology, on-chip photonic quantum circuits could have important applications in quantum communication, since they can be easily integrated with optical fibres to send photons between remote locations," said Alberto Politi.

The team reports its results in the article Silica-on-Silicon Waveguide Quantum Circuits in the March 27 2008 Science Express -- the advanced online publication of the journal Science. In addition to Dr O'Brien and Alberto Politi co-authors of the Science paper are Dr Martin Cryan, Professor John Rarity, and Dr Siyuan Yu. The work was funded by the US government Intelligence Advanced Research Projects Activity (IARPA), the Quantum Information Processing Interdisciplinary Research Collaboration (QIP IRC), the Engineering and Physical Sciences Research Council (EPSRC), and the Leverhulme Trust.

Adapted from materials provided by University of Bristol.

http://www.sciencedaily.com/releases/2008/03/080327172255.htm

Gene Silencing Therapies Could Have Harmful Side Effects, Research Suggests

Jayakrishna Ambati. (Credit: Image courtesy of University of Kentucky)

ScienceDaily (Mar. 28, 2008) — A dramatic new study published in the most recent issue of Nature questions some of the mechanisms underlying a new class of drugs based on Nobel Prize-winning work designed to fight diseases ranging from macular degeneration to diabetes.

Dr. Jayakrishna Ambati, a University of Kentucky researcher and the paper's senior author, has for years been investigating gene silencing, a 1998 discovery that won a Nobel Prize in Physiology or Medicine in unusually quick fashion in 2006.

While the prize-winning discovery remains important, the findings made by Ambati's lab show the mechanisms behind it are not as scientists once believed. In fact, Ambati's work imparts the need for caution in current clinical trials using the technology, as it may have potentially harmful effects on subjects.

Gene Silencing Leads to New Class of Drugs

In short, researchers in 1998 discovered a class of double-stranded RNA (dsRNA) that possessed powerful gene-silencing capabilities, or the ability to "turn off" disease-causing genes in the body.

The technique of targeting these dsRNA for single genes was refined with synthetic molecules called small-interfering RNA (siRNA). siRNA were thought to have the capability to interfere with specific disease-causing genes and prevent them from being expressed.

Because gene-targeted silencing with siRNA does not involve permanent DNA mutations, this approach rapidly gained popularity throughout biomedical research. The breakthrough, with the powerful ability to turn off genes, has become a standard research tool for genetic studies and has resulted in a new class of 21st century drugs designed to silence disease-causing genes in the body or disarm an invading virus by knocking out its genes.

Many diseases including age-related macular degeneration, diabetes, kidney disease, cancer, Lou Gehrig's and Parkinson's have been heralded as candidates for siRNA therapy, creating a wave of on-going clinical trials.

New Discovery Shows Therapies Could Have Harmful Side Effects

Ambati, professor and vice chair of ophthalmology and visual sciences at the University of Kentucky College of Medicine, and his colleagues have made a critical discovery that challenges the view that siRNA's therapeutic effects are imparted solely through RNA interference.

Ambati and collaborators argue that siRNA functions generically rather than specifically, thus the new class of drugs being formulated may actually adversely affect blood vessel growth in a variety of organs.

"siRNAs are used in every area of biomedical research and are thought to be exquisitely specific in targeting a single gene," Ambati said. "My lab made the surprising discovery that siRNAs, including those in clinical trials, do not enter cells or trigger RNAi. Rather, we found that they generically, regardless of their sequence or target, bind a receptor known as TLR3 on cell surfaces and block blood vessel growth in the eye, skin and a variety of other organs."

Blocking blood vessel growth is beneficial in a variety of diseases. Prime examples include wet AMD, an eye disease hallmarked by the abnormal growth of blood vessels beneath the retina, as well as cancer. However, blocking blood vessel growth by administering siRNA intravenously could be detrimental if it impacts other organs, according to Ambati's study.

Ambati, however, quickly notes the Nobel Prize-winning discovery is still valid.

"RNA interference does, of course, exist," said Ambati, a University Research Professor and the Dr. E. Vernon Smith & Eloise C. Smith Endowed Chair in Macular Degeneration Research. "It is just that siRNA functions differently than commonly believed -- not via RNA interference."

Ambati said the main implications of his research are two fold:

1. for researchers to understand how siRNAs actually work
2. for clinical trials of siRNA to be approached with great caution.

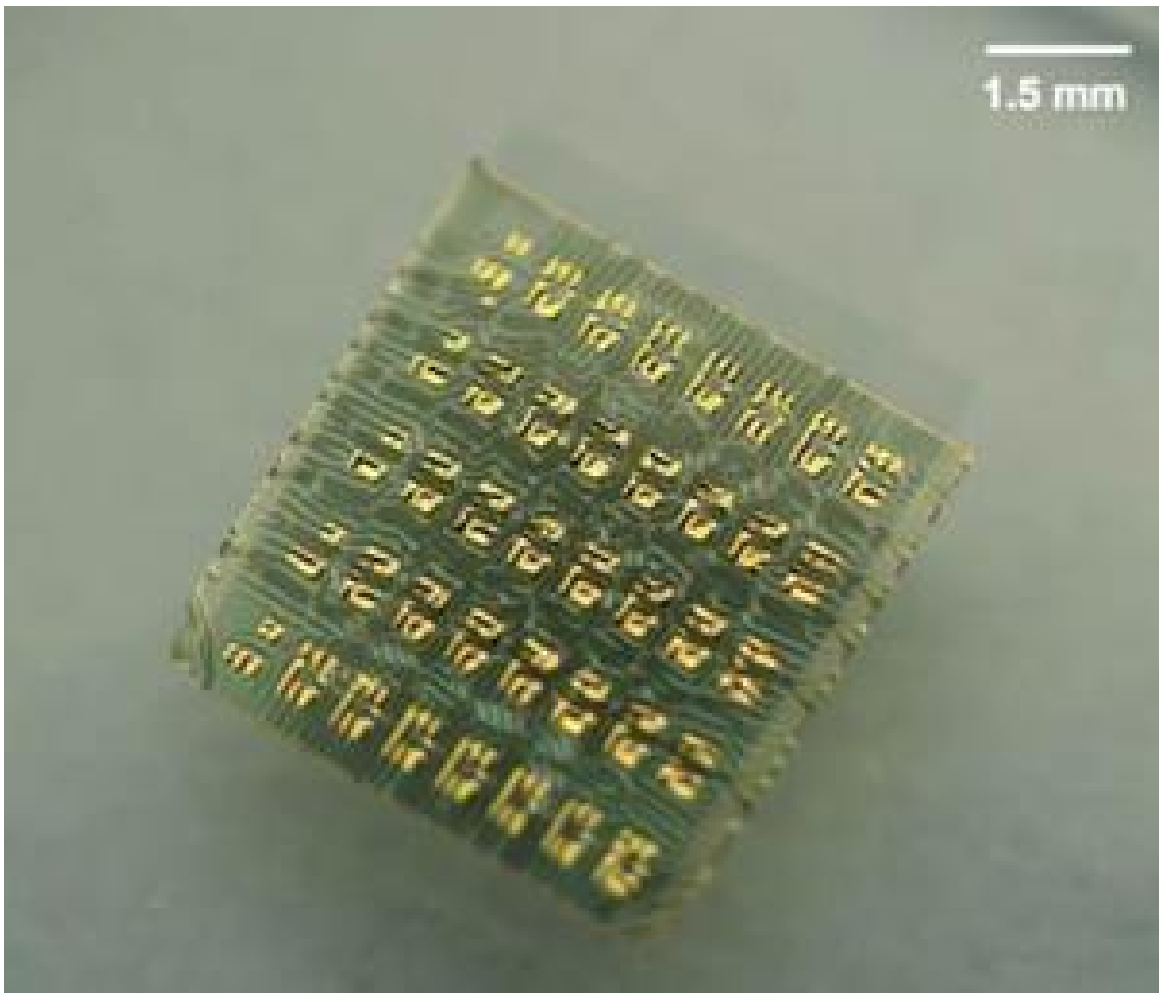
Ambati's lab also showed that people with a mutation in the TLR3 receptor would be resistant to the generic effects of siRNAs, thereby providing hope for personalized medicine in this population.

The next steps, Ambati said, are to better understand the generic mechanism of siRNA that inhibits blood vessel growth and to discover how to render it useful in creating treatments for the many conditions that would benefit from such effects. His lab also will work to refine siRNAs to potentially achieve their promise of precise gene targeting.

Adapted from materials provided by University of Kentucky.

http://www.sciencedaily.com/releases/2008/03/080326161707.htm

Foldable And Stretchable, Silicon Circuits Conform To Many Shapes



Mechanically stretchable, "wavy" silicon integrated circuit on a rubber substrate. (Credit: Photo courtesy John Rogers)

ScienceDaily (Mar. 28, 2008) — Scientists have developed a new form of stretchable silicon integrated circuit that can wrap around complex shapes such as spheres, body parts and aircraft wings, and can operate during stretching, compressing, folding and other types of extreme mechanical deformations, without a reduction in electrical performance.

"The notion that silicon cannot be used in such applications because it is intrinsically brittle and rigid has been tossed out the window," said John Rogers, a Founder Professor of Materials Science and Engineering at the University of Illinois.

"Through carefully optimized mechanical layouts and structural configurations, we can use silicon in integrated circuits that are fully foldable and stretchable," said Rogers, who is a corresponding author of a paper accepted for publication in the journal Science, and posted on its Science Express Web site.

The new designs and fabrication strategies could produce wearable systems for personal health monitoring and therapeutics, or systems that wrap around mechanical parts such as aircraft wings and fuselages to monitor structural properties.

In December 2005, Rogers and his U. of I. research group reported the development of a one-dimensional, stretchable form of single-crystal silicon with micron-sized, wave-like geometries. That

configuration allows reversible stretching in one direction without significantly altering the electrical properties, but only at the level of individual material elements and devices.

Now, Rogers and collaborators at the U. of I., Northwestern University, and the Institute of High Performance Computing in Singapore report an extension of this basic wavy concept to two dimensions, and at a much more sophisticated level to yield fully functional integrated circuit systems.

"We've gone way beyond just isolated material elements and individual devices to complete, fully integrated circuits in a manner that is applicable to systems with nearly arbitrary levels of complexity," said Rogers, who also is a researcher at the Beckman Institute and at the university's Frederick Seitz Materials Research Laboratory.

"The wavy concept now incorporates optimized mechanical designs and diverse sets of materials, all integrated together in systems that involve spatially varying thicknesses and material types," Rogers said. "The overall buckling process yields wavy shapes that vary from place to place on the integrated circuit, in a complex but theoretically predictable fashion."

Achieving high degrees of mechanical flexibility, or foldability, is important to sustaining the wavy shapes, Rogers said. "The more robust the circuits are under bending, the more easily they will adopt the wavy shapes which, in turn, allow overall system stretchability. For this purpose, we use ultrathin circuit sheets designed to locate the most fragile materials in a neutral plane that minimizes their exposure to mechanical strains during bending."

To create their fully stretchable integrated circuits, the researchers begin by applying a sacrificial layer of polymer to a rigid carrier substrate. On top of the sacrificial layer they deposit a very thin plastic coating, which will support the integrated circuit. The circuit components are then crafted using conventional techniques for planar device fabrication, along with printing methods for integrating aligned arrays of nanoribbons of single-crystal silicon as the semiconductor. The combined thickness of the circuit elements and the plastic coating is about 50 times smaller than the diameter of a human hair.

Next, the sacrificial polymer layer is washed away, and the plastic coating and integrated circuit are bonded to a piece of prestrained silicone rubber. Lastly, the strain is relieved, and as the rubber springs back to its initial shape, it applies compressive stresses to the circuit sheet. Those stresses spontaneously lead to a complex pattern of buckling, to create a geometry that then allows the circuit to be folded, or stretched, in different directions to conform to a variety of complex shapes or to accommodate mechanical deformations during use.

The researchers constructed integrated circuits consisting of transistors, oscillators, logic gates and amplifiers. The circuits exhibited extreme levels of bendability and stretchability, with electronic properties comparable to those of similar circuits built on conventional silicon wafers.

The new design and construction strategies represent general and scalable routes to high-performance, foldable and stretchable electronic devices that can incorporate established, inorganic electronic materials whose fragile, brittle mechanical properties would otherwise preclude their use, the researchers report.

"We're opening an engineering design space for electronics and optoelectronics that goes well beyond what planar configurations on semiconductor wafers can offer," Rogers said.

The work was funded by the National Science Foundation and the U.S. Department of Energy.

Adapted from materials provided by University of Illinois at Urbana-Champaign.

http://www.sciencedaily.com/releases/2008/03/080327172322.htm

Zoologists Unlock New Secrets About Frog Deaths

Red-eyed Tree Frog. 43 percent of known amphibian species in the world are at risk because of a fungus. (Credit: iStockphoto/Mark Kostich)

ScienceDaily (Mar. 28, 2008) — New research from zoologists at Southern Illinois University Carbondale opens a bigger window to understanding a deadly fungus that is killing off frogs throughout Central and South America, and that could threaten amphibian populations in North America as well.

The research, led by SIUC zoologist Karen R. Lips, and SIUC zoologist Michael W. Sears, underscores the dire circumstances facing up to 43 percent of known amphibian species in the world and points up the need for more regulations, conservation efforts and quarantines to prevent the fungus' spread.

An associate professor of zoology in the College of Science at SIUC, Lips is at the forefront of in research in catastrophic decline of frog species brought on by the Batrachochytrium dendrobatidis fungus. The fungus, known to researchers as "Bd," wipes out frog populations essentially by completely blocking their skin. Amphibians such as frogs depend on their skin to provide oxygen and moisture. Bd infections cause electrolyte imbalance, which can lead to cardiac arrest.

Lips has studied the issue since the early 1990s, becoming a recognized expert on the subject. She, along with her graduate and doctoral students, regularly visit the high jungles of Central America, roughing it in the wild while collecting data on the ecological systems before, during and after the fungus arrives.

This latest study, conducted with Sears, an assistant professor of zoology at SIUC, and two other colleagues at the Illinois Natural History Survey and Zoo Atlanta, expands upon that work by seeking better understanding of the spread of the fungus, its triggers and how it might be spread.

Specifically, the researchers examined data from South American amphibian declines to see whether the wave-like spread seen in Central America, typical of an emerging infectious disease, was evident.

One previous theory, for instance, blamed the fungus on global climate change. Lips and Sears, however, found climate change doesn't appear to trigger outbreaks of the fungus, but that it instead spreads in wave-like patterns often seen in exotic species and emerging infectious diseases. They call their theory the "spreading pathogen hypothesis."

Using modeling, the researchers found evidence of four different introductions of Bd into South America. They found that the fungus spread through the population at a rate similar to that seen in Central America and in a manner that best explains amphibian population declines in Central and South America.

"What makes the study really relevant is we can now generalize how the fungus is spread," Lips said. "We know from our research, that if we start looking in the right time and place in an area where the fungus is, we're probably going to see it affecting frog populations. This helps us understand what's going on, and it can potentially help us get out in front of it."

The study could help governments and environmental agencies focus on ways to prevent the fungus' spread through more regulation of potential infection routes, such as the ornamental plant and aquarium wildlife trade. The fungus can easily hitch a ride to other regions through such trade, Lips said.

"If you go and buy an ornamental plant from one of these regions and plant it in your yard, or you buy a frog at a pet shop, think about it. If the fungus is there and still alive, it's now introduced into the environment. Then it can get into your pond or streams."

Lips said simple testing of such products and organisms before importing them could reveal the fungus' presence. Once discovered, simple anti-fungal drugs will kill the fungus before it can contaminate an area.

"Our research has shown that once the fungus gets somewhere new it spreads like wildfire," Lips said. "So the key is preventing it from spreading."

The fungus is present in North America, including Illinois, but little is known so far about its impact here. With funding from the Illinois Department Natural Resources, Lips in the coming months will survey the extent of the fungus and its impact in Illinois.

Among the study's key points:

- Climate change, while having some negative impacts on amphibian biodiversity, does not appear to have triggered the disease in Central America and the Andes of South America, as suggested by previous studies.
- The fungus appears to have spread in a wave-like manner, in a typical pattern of disease spread.
- The fungus was introduced in South America in the late 1970s or early 1980s. After introduction, the disease spread along the Andes, infecting native amphibians and often causing the extinction of entire populations and species.
- There is robust evidence supporting the "spreading pathogen hypothesis," which holds the disease was and continues to be spread in a wave-like pattern seen in Central America. It is likely this same pattern will emerge in other places where Bd has been detected, including North America and Europe.

Lips said the study increases understanding of the disease, which should allow humans to take steps to limit its spread.

"We need to get into areas ahead of the spreading wave — such as eastern Panama and the southern Andes — to conduct intensive surveys and monitoring for both native amphibians and the … fungus,"

Lips said. Environmental agencies also should immediately begin conservation programs aimed at conserving rare and endangered amphibian species that might be wiped out by the fungus.

"At this time, the fungus cannot be controlled or managed in wild amphibians nor their habitats," Sears added.

The island of Madagascar, which is home to a large number of plants and animals found nowhere else in the world, so far appears free of the deadly fungus. The researchers said governments should take steps to maintain that status.

In the future, Lips believes that researchers should study treatment options for wild amphibians and possibly their habitats to prevent or minimize the fungus while establishing a global network of disease surveillance. They should increase communication and monitoring of global trade and increase outreach communication with researchers and policy makers to raise awareness on its potential impacts in other geographic locations.

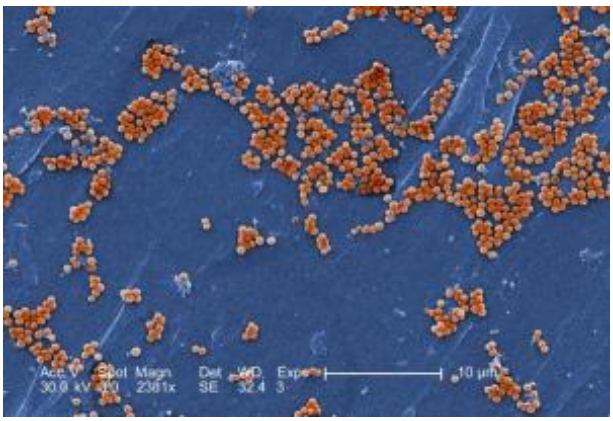
Researchers also should survey museum specimens to better determine the location, timing and possible sources of the fungus and its introduction into the environment in various locations. They also should study fungus samples for genetic clues as to its origins and the different strains involved.

This research was published March 25 in the journal PLoS Biology.

Adapted from materials provided by Southern Illinois University Carbondale, via Newswise.

http://www.sciencedaily.com/releases/2008/03/080326195628.htm

How Superbug Staph Aureus Resists Our Natural Defenses



This scanning electron micrograph depicts numerous clumps of methicillin-resistant Staphylococcus aureus bacteria, commonly referred to by the acronym, MRSA; Magnified 2381x. (Credit: Janice Haney Carr, CDC)

ScienceDaily (Mar. 28, 2008) — Researchers at the University of Washington have uncovered how the bacterium Staphylococcus aureus, including the notorious MRSA (methicillin-resistant Staph aureus) "superbug" strains, resists our body's natural defenses against infection. The work, which was featured on the cover of the March 21 issue of Science, could lead to new ways to fight the bacteria.

Dr. Ferric Fang, UW professor of laboratory medicine and microbiology, and his UW colleagues Dr. Anthony Richardson and Dr. Stephen Libby set out to determine what makes Staph aureus a better pathogen than other bacteria. They focused on a chemical compound called nitric oxide (NO), a natural antibiotic that our cells excrete to protect us from pathogens. For most bacteria, NO creates an environment that keeps invading microbes from undergoing respiration or fermentation, vital chemical processes that allow bacteria to grow.

The researchers found that Staph aureus has a mechanism that allows it to produce lactic acid in the presence of NO, which allows it to maintain its chemical balance and keep growing and thriving in the harsh host environment. When Staph aureus is exposed to NO, it produces the novel enzyme responsible for lactic acid production, along with another enzyme that converts NO to non-toxic products. NO is commonly found in the nose and nasal passages, and is meant to protect people against disease-causing microbes. But Staph aureus is commonly found in the nose despite the presence of NO, the researchers explained.

When the researchers modified Staph aureus to take away its ability to make lactic acid, the bacteria could no longer tolerate NO. The modified bacteria also lost their ability to survive in host immune cells and cause lethal disease in mice.

"MRSA has become an enormous public health problem, by causing both hospital- and community-acquired infections," explained Fang. "Staph aureus has already colonized about one-third of the world's population, so traditional antibiotics will probably not be the complete answer to the MRSA problem."

However, the researchers added, trying to make Staph aureus more susceptible to our natural defenses might lead to new strategies to de-colonize the population and prevent staphylococcal infections.

Adapted from materials provided by University of Washington, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/03/080324113258.htm

New Safflower Lines Survive Winters

Three new lines of safflower have superior winter hardiness. (Credit: Photo by Jack Dykinga)

ScienceDaily (Mar. 28, 2008) — Three new safflower germplasm lines developed by Agricultural Research Service (ARS) scientists in Pullman, Wash., are now available for improving the oilseed crop's winter survival, or "hardiness."

The germplasm lines—dubbed WSRC01, WSRC02 and WSRC03—owe their superior winter hardiness to three Chinese safflower accessions maintained at the ARS Plant Germplasm Introduction and Testing Research Unit in Pullman.

According to ARS agronomist Richard C. Johnson, winter-hardy safflower varieties derived from the three new germplasm lines should offer farmers a number of benefits. Among these are the option of fall plantings, winter ground cover, rotation with other crops like wheat, better weed control, improved water-use efficiency, and higher seed yields than spring-planted safflower crops.

Safflower is primarily grown for three products: oil, meal and birdseed. The oil is mainly used for cooking and in salad dressings and margarine. Safflower oil also is used in paint bases and can be converted into biodiesel. High-fiber, high-protein meal from crushed seeds is fed to livestock, while intact safflower seeds are marketed as birdseed. Dyes are made from the crop's flowers.

Winter hardiness, which has been lacking in existing varieties, could expand safflower use in the West and the Southern Great Plains, notes Johnson. WSRC01, 02 and 03 are adapted to many sites in these regions and mark the first U.S. safflower releases specifically for that trait.

During field trials in eastern Washington State, the three lines showed winter hardiness superior to cold-tolerant safflowers that were used as experimental controls for comparison. The new safflower lines grew to a height of nearly 3 feet, stood upright and produced red flowers. On average, the lines' seed contained 80 percent linoleic acid and 14 percent oleic fatty acid.

Johnson, who is handling seed requests, co-developed the safflower germplasm lines with fellow ARS agronomist Vicki Bradley. Professor Li Dajue at the Beijing Botanical Gardens in China also collaborated.

Adapted from materials provided by US Department of Agriculture.

http://www.sciencedaily.com/releases/2008/03/080325142228.htm

Crashed probe yields Sun secrets

By Paul Rincon
Science reporter, BBC News, Houston

Scientists have measured the composition of oxygen at the birth of the Solar System.

The discovery is a vital piece of data for reconstructing the evolution of our cosmic neighbourhood.

Nasa's Genesis spacecraft spent more than two years collecting oxygen from the outermost layers of the Sun.

These layers reflect the composition of the gas and dust cloud, known as the solar nebula, from which the Solar System formed 4.6 billion years ago.

The results were presented here at the 39th Lunar and Planetary Science Conference.

Researchers had feared their data would be lost when Genesis' sample-return capsule crashed in the Utah desert in 2004. But scientists have been working hard to recover the precious information held in the capsule's collector arrays.

Key task

The researchers found that the Sun was enriched in the most common form, or isotope, of oxygen - oxygen-16 - relative to the Earth and to meteorites.

"We have a very clear signal," said Genesis team member Kevin McKeegan, from the University of California, Los Angeles (UCLA).

> **One would not normally characterise the Genesis mission as being lucky, but in this case we were**
> Kevin McKeegan, UCLA

"It's still early days and these data are not very old; but the experiment has worked."

The Earth, Moon and meteorites have widely differing proportions of the three oxygen isotopes: oxygen-16, oxygen-17, and oxygen-18. But the cause of these variations in different parts of the Solar System is unknown.

Measuring this primordial oxygen composition establishes an important baseline for understanding how the planets later evolved their different compositions of oxygen.

"This was the highest priority science objective for Genesis," said Professor McKeegan.

The $264m (£151m) mission spent more than two years gathering ions, or charged atoms, flung out from the Sun. This material is known as the solar wind.

Deep storage

It captured these charged atoms from the solar wind on five collecting plates hung outside the spacecraft for more than 800 days in a region of space about 1.5 million km from Earth.

The collector arrays were then stowed in a sample-return capsule, and the spacecraft re-entered the Earth's atmosphere on 8 September 2004.

Once it had deployed its parachute, the capsule was meant to be caught by a 5m-long hook, wielded by a man in a helicopter. But when its parachute failed, the capsule thudded into the Utah desert, leaving it a mangled mess.

But an instrument known as the concentrator had helped protect the sample.

The concentrator was an electrostatic mirror designed to focus solar wind particles on to a special target.

Its job was to enhance the density of heavy ions, particularly oxygen, that were to be collected.

Clean up

The device gave the atoms an extra energy kick, helping implant them more deeply in the target - away from the contamination which poured in after the crash.

The way the device was engineered also helped protect the samples from the impact.

"One would not normally characterise the Genesis mission as being lucky, but in this case we were," Professor McKeegan explained.

The researchers "cleaned" the top 20 nanometres (billionths of a metre) of the sample with a beam of caesium ions to remove terrestrial contamination.

They then measured the composition of the Sun's oxygen in a vacuum.

The measurement will be vital for understanding what caused the differences in oxygen composition between the different bodies in our Solar System.

Paul.Rincon-INTERNET@bbc.co.uk

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/1/hi/sci/tech/7299025.stm

Published: 2008/03/15 22:11:38 GMT

Male fertility 'set in the womb'
Male fertility problems are determined in the womb, research from the University of Edinburgh suggests.

Common genital disorders, low sperm count and testicular cancer could all be linked to hormone levels early in pregnancy, studies in rats suggest.

It was found that levels of male hormones, such as testosterone, in a critical "window" at 8-12 weeks determine future reproductive health.

The results are published online in the Journal of Clinical Investigation.

Problems with reproductive development such as the testes not descending properly into the scrotum (cryptorchidism) or the urinary tract opening in the wrong place on the penis (hypospadias) are fairly common in young boys.

Our assumption was that it would be much later in pregnancy
Study leader, Dr Michelle Welsh

Other disorders, such as low sperm counts and testicular cancer, are thought to be part of the same pathway.

Using the mouse model, researchers at the Medical Research Council Human Reproductive Sciences Unit found the disorders resulted from low levels of male hormones - or androgens - at the equivalent to 8-12 weeks human gestation.

They also found that the level of androgen hormone at this time was related to the distance between the base of the penis and the anus.

This measurement could be an early warning system of future reproductive problems in baby boys, they said.

It could also give insights into links between hormones in the womb and fertility problems in later life.

Timeline

Study leader, Dr Michelle Welsh, said: "We know from other studies that androgens work during foetal development to programme the reproductive tract.

"But our assumption was that it would be much later in pregnancy."

She added the anogenital measurement would be a useful tool.

"Say a clinician were to examine a 30-year-old man with testicular cancer - previously there would have been no way of knowing what hormones he was exposed to in the womb.

"We would suggest that this measurement, even at this later stage in life, could offer an indication of hormone exposure."

"For example, the shorter the distance, the less confident we can be that hormones have acted correctly and at the right time."

Co-author, Professor Richard Sharpe, said around 7% of boys had cryptorchidism and low sperm counts affect as many as one in five young men.

Dr Allan Pacey, senior lecturer in andrology at the University of Sheffield, said scientists had been worried for many years about the increasing incidence of problems resulting from disrupted development of the male reproductive system during pregnancy.

"Understandably, this is almost impossible to study in humans directly and so animal models are needed to unravel the precise details.

"To use the adult anogenital distance as a proxy marker of foetal exposure in utero is a good suggestion and I would encourage studies to investigate how well this correlates with problems of the male reproductive system."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7293982.stm

Published: 2008/03/17 00:37:06 GMT

Protein 'reverses eye diseases'
A drug to tackle two of the leading causes of blindness is a step closer after successful experiments in mice.

Activating a specific protein in the eyes prevented blood vessel damage which can cause sight loss.

The research has implications for macular degeneration and diabetic retinopathy - two common conditions associated with blood vessel problems.

The University of Utah study, published in Nature Medicine, could also provide clues for treating other diseases.

> **We are excited about taking this opening and moving the frontier forward with real hope for patients who have but few, often disappointing options**
> Professor Randall Olson
> University of Utah

Both of the types of eye problems are common in older people, and involve both leakage of blood vessels within the eye, and the formation of abnormal new blood vessels.

Researchers had already identified a protein called Robo4, which appeared to play an important role in the development of stable, working blood vessels.

The proteins were activated in mice bred to mimic the effects of age-related macular degeneration (AMD) and diabetic retinopathy.

The scientists saw that the blood vessel damage was prevented, or in some cases, reversed.

While this does not prove that the same principle works in humans, or that a drug could be developed to harness this without side-effects, the researchers described the work as a "major breakthrough".

Professor Randall Olson, director of Utah's John A Moran Eye Center, said: "We are excited about taking this opening and moving the frontier forward with real hope for patients who have but few, often disappointing options."

The scientists believe that it will still take some years before a working drug can be provided for patients.

Dr Hemin Chin, from the US National Eye Institute, said: "Given that vascular eye diseases, such as age-related macular degeneration and diabetic retinopathy, are the number one cause of vision loss in the US, the identification of new signalling pathways that prevent abnormal vessel growth and leakage in the eye represents a major scientific advancement."

Cancer hope

However, researchers in other fields are excited by the possibilities offered by Robo4.

The damage caused by many other conditions, including serious infections such as SARS, are the result of damage to blood vessels.

Cancer scientists are already investigating ways to use the protein presence on the surface of tumours to help target drugs.

Among those is Professor Roy Bicknell, from the University of Birmingham, who was one of those who discovered the Robo4 gene in humans in the 1990s, originally naming it the "Magic Roundabout" gene.

He said he was "very excited" by the research: "If this can really fix these eye conditions, then it is a big achievement.

"I thought when I found this that this was going to be really big, and that appears to be the case."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7297156.stm

Published: 2008/03/17 00:37:42 GMT

Writing 'eases stress of cancer'
Encouraging cancer patients to write down their deepest fears about the disease may improve their quality of life, according to a US study.

Nancy Morgan, a "writing clinician", approached patients waiting in a clinic at a cancer centre in Washington DC.

Half those who took part said the exercise changed the way they thought about the illness, according to the journal The Oncologist.

Younger people, and those recently diagnosed, were most likely to benefit.

> **Thoughts and feelings, or the cognitive processing and emotions related to cancer, are key writing elements associated with health benefits**
> Nancy Morgan, Lombardi Center

Ms Morgan developed her role as part of the Arts and Humanities Program at the Lombardi Center.

Her "expressive writing" exercise, lasting just 20 minutes, posed questions to leukaemia or lymphoma patients about how the cancer had changed them and how they felt about those changes.

When those taking part were contacted again a few weeks later, 49% said that the writing had changed their thoughts about their illness, while 38% said their feelings towards their situation had changed.

While there was no evidence of direct impact of the session on their illness, where the patients had reported greater changes in their mindset during the writing, this could be linked to more positive reports of quality of life given to their doctors during follow-up appointments.

Ms Morgan said: "Thoughts and feelings, or the cognitive processing and emotions related to cancer, are key writing elements associated with health benefits, according to previous studies.

"Writing only about the facts has shown no benefit."

Dr Bruce Cheson, the head of haematology at Lombardi, said: "I'm pleased to see that so many of our patients were interested in this kind of therapy.

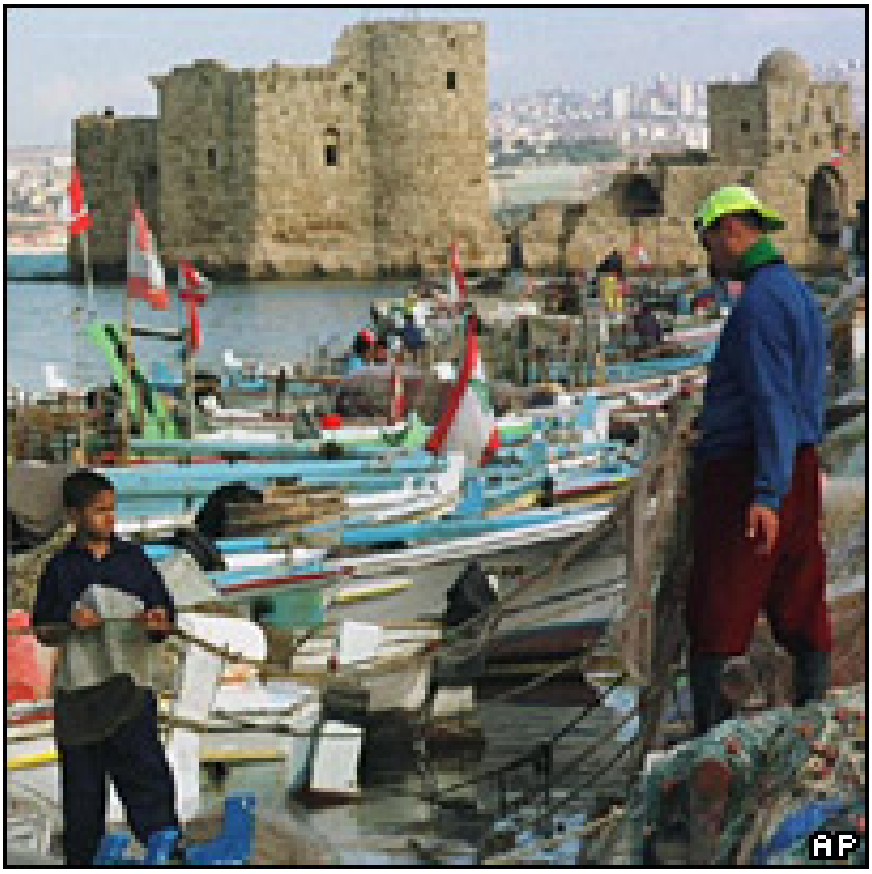
"Our study supports the benefit of an expressive writing program and the ability to integrate such a program into a busy clinic."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7304294.stm

Published: 2008/03/22 00:04:24 GMT

Crusaders 'left genetic legacy'

By Paul Rincon
Science reporter, BBC News



Scientists have detected the faint genetic traces left by medieval crusaders in the Middle East.

The team says it found a particular DNA signature which recently appeared in Lebanon and is probably linked to the crusades. The finding comes from the Genographic Project, a major effort to track human migrations through DNA.

Details of the research have been published in the American Journal of Human Genetics.

The researchers found that some Christian men in Lebanon carry a DNA signature hailing from Western Europe.

Four crusades came through Lebanon between the 11th and 13th Centuries - the first, second, third and sixth. The bulk of the crusader armies came from England, France, Germany and Italy; many of the men stayed to build castles and settlements, mixing with the local populations.

The scientists also found that Lebanese Muslim men were more likely than Christians to carry a particular genetic signature. But this one is linked to expansions from the Arabian Peninsula which brought Islam to the area in the 7th and 8th Centuries.

But they emphasise that the differences between the two communities are minor, and that Christians and Muslim Arabs in Lebanon overwhelmingly share a common heritage.

Genetic 'surname'

The legacy of the Muslim expansion has been demonstrated in other studies which looked at the genetics of Middle Eastern and North African populations. But signs of recent European migration to the region are more unusual.

The study focused on the Y, or male, chromosome, a package of genetic material carried only by men that is passed down from father to son more or less unchanged, just like a surname.

The goal of the study was to put some science to the history of this country
Pierre Zalloua, Lebanese American University

But over many generations, the chromosome accumulates small changes, or copying errors, in its DNA sequence.

These can be used to classify male chromosomes into different groups (called haplogroups) which, to some extent, reflect a person's geographical ancestry.

The team analysed the Y chromosomes of 926 Lebanese males and found that patterns of male genetic variation in Lebanon fell more along religious lines than along geographical lines.

A genetic signature on the male chromosome called WES1, which is usually only found in west European populations, was found among the Lebanese men included in the study.

Science and history

"It seems to have come in from Europe and is found mostly in the Christian population," said Dr Spencer Wells, director of the Genographic Project. "This is odd because typically we don't see this sort of stratification by religion when we are looking at the relative proportions of these lineages - and particularly immigration events."

He told BBC News: "Looking at the same data set, we saw a similar enrichment of lineages coming in from the Arabian Peninsula in the Muslim population which we didn't see [as often] in the Christian population." Lebanese Muslim men were found to have high frequencies of a Y chromosome grouping known as J1. This is typical of populations originating from the Arabian Peninsula, who were involved in the Muslim expansion.

"The goal of the study was to put some science to the history of this country - which is very rich," said Pierre Zalloua, a co-author on the paper, from the Lebanese American University in Beirut.

He added: "To have these great civilisations - with the Islamic expansion and the migration from Europe - coming to Lebanon, leaving not only their genes but also some of their culture and way of life, it can only make us feel richer."

The Genographic Project was launched by National Geographic in 2005 to help piece together a picture of how the Earth was populated.

The consortium has sold 250,000 DNA test kits and regional centres have taken samples of genetic material from 31,000 indigeous people.

Paul.Rincon-INTERNET@bbc.co.uk

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/science/nature/7316281.stm

Published: 2008/03/27 17:36:37 GMT

With 50 years under its feet, Alvin Ailey stays true to tradition of branching out

By Kyle MacMillan
Denver Post Fine Arts Critic
Article Last Updated: 03/29/2008 03:23:30 PM MDT

Alvin Ailey American Dance Theater in Camille Brown's "The Groove to Nobody's Business." (Paul Kolnik)

Just surviving 50 years is a gigantic accomplishment for any modern- dance company because of the unrelenting challenges to secure funds, space and engagements in an often undervalued, sometimes misunderstood genre.

But the Alvin Ailey American Dance Theater has not only persevered for five decades, it has thrived, becoming an internationally known, blue-chip arts institution that manages to attract dance devotees and people with only a passing interest in the field alike.

Since its debut in 1958, it has grown from eight to 35 dancers and performed for an estimated 21 million people in 48 states and 71 countries on six continents — accomplishments that few if any other modern-dance troupes can claim.

"Alvin is the root

and the trunk of this tree, and the branches have just gone everywhere," said Judith Jamison, a longtime Ailey dancer who was named artistic director in 1989 after the celebrated dancer and choreographer's death.

"When I walk into our building, there's a picture of myself and Alvin together. And I look at it, and I look at him, because he is staring straight ahead, and I think he knows what is going on and, of course, he'd be very pleased, because we are living in his spirit."

The New York-based troupe is in the midst of a 27-city North American tour that began Jan. 29 at the Wharton Center in East Lansing, Mich., and concludes May 18 at the Sony Centre in Toronto.

Beginning Friday, it will present three programs at the Ellie Caulkins Opera House under the auspices of the Colorado Ballet and Cleo Parker Robinson Dance Ensemble.

Those performances, which will include a short, opening film on the history of the company, will be among the first events in an 18-month anniversary celebration that began last week.

Jamison credits part of the American Dance Theater's longevity to Ailey's unfailing belief in giving back to the community, long before "outreach" became a buzzword in the arts.

"One of the reasons

that we're here for such a long time is the excellence of dance, but also the idea of knowing that you're not dancing in a vacuum, that you're responsible to the communities that you serve," she said.

"So, you always have to reach back and grab a hand and introduce someone to the magic of dance and the magic of theater and the magic of the arts."

Equally important was Ailey's revolutionary idea to create a repertory company. Even today, most troupes carry the names of their founders and serve exclusively as conduits for those choreographic voices.

But Ailey envisioned a company that would be anchored in African-American dance and use his works as a foundation but also would perform a wide range of other choreography.

"He was an indefatigable collector, with a visionary idea," wrote New York Times dance critic Jennifer Dunning in 2005. "Nothing like a library or repertory company existed, and later attempts to form such companies were unsuccessful."

Today, the Ailey company has more than 250 diverse works in its repertory by choreographers from around the world.

Another key to its survival was finding a successor to Ailey who was able to not only carry on his vision but also expand and adapt it to the ever-changing realities of the dance scene and the world at large.

Jamison has proved to be an inspired leader. Her biggest accomplishment might be the 2004 realization of the company's first permanent home — the Joan Weill Center for Dance. The eight-story, 77,000-square-foot building includes 12 dance studios and a 5,000-square-foot performance space.

"It's a real blessing to have something to be able to call your own home and to be able to open it as Ailey's heart was so open to everyone," Jamison said. "And I think that Alvin would be extraordinarily happy about it."

Also providing continuity are Masazumi Chaya, the company's associate artistic director, who joined Ailey in 1972, and dancers who have been company members for as long as 27 years.

"There is a resonance here, and it's Alvin's spirit," she said. "And we always remember that and know that we have to keep the integrity of the company together."

In February, Jamison, 64, announced plans to retire in 2011, giving the company three years to find an appropriate successor.

"I want the company to go on another 50 years," she said. "My company celebrates past, present and future every time we go on. That's what the school is about, that's what the whole organization is about, so I'm looking at the future."

Kyle MacMillan: 303-954-1675 or kmacmillan@denverpost.com

About the dances

During its three programs in Denver, the Alvin Ailey American Dance Theater will perform two combinations of works from this list:

"To Groove to Nobody's Business," Camille Brown. Created by a young, up-and-coming choreographer, this new piece explores the everyday interactions among strangers on a subway platform.

"Love Stories" (2004), Judith Jamison. Using the songs of Stevie Wonder, Jamison created this work in collaboration with hip-hop pioneer Rennie Harris and Robert Battle.

"The Golden Section" (1983), Twyla Tharp. Set to a propulsive score by David Byrne, this piece incorporates the kind of fearless, no-boundaries physicality for which the celebrated choreographer is known.

"Solo" (1997), Hans van Manen. Three different dancers perform in this highly demanding seven-minute work, which shows three sides of the same man.

"Episodes" (1987), Ulysses Dove. This highly kinetic work, set to percussive music by Robert Ruggieri, was premiered by the London Festival Ballet.

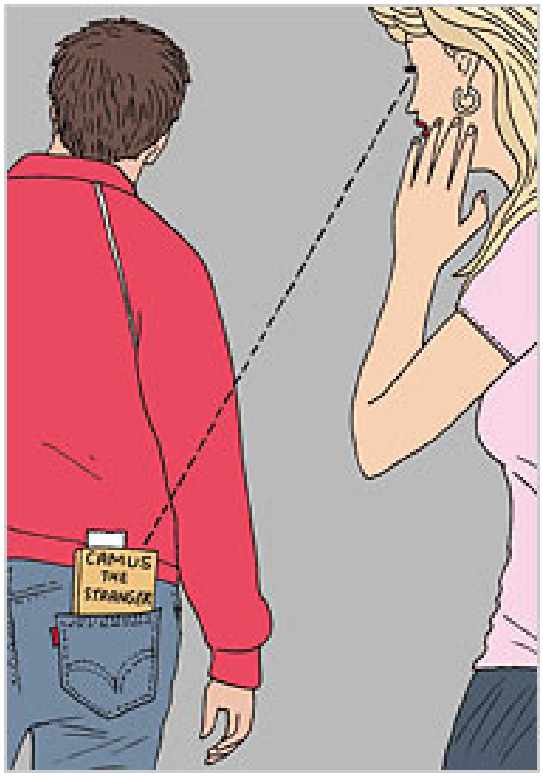
"Revelations" (1960), Alvin Ailey. Set to African-American religious music, this work is one of the masterpieces of 20th-century American dance and the company's signature work.

Kyle MacMillan

http://www.denverpost.com:80/ci_8722975

It's Not You, It's Your Books

By RACHEL DONADIO



Some years ago, I was awakened early one morning by a phone call from a friend. She had just broken up with a boyfriend she still loved and was desperate to justify her decision. "Can you believe it!" she shouted into the phone. "He hadn't even heard of Pushkin!"

We've all been there. Or some of us have. Anyone who cares about books has at some point confronted the Pushkin problem: when a missed — or misguided — literary reference makes it chillingly clear that a romance is going nowhere fast. At least since Dante's Paolo and Francesca fell in love over tales of Lancelot, literary taste has been a good shorthand for gauging compatibility. These days, thanks to social networking sites like Facebook and MySpace, listing your favorite books and authors is a crucial, if risky, part of self-branding. When it comes to online dating, even casual references can turn into deal breakers. Sussing out a date's taste in books is "actually a pretty good way — as a sort of first pass — of getting a sense of someone," said Anna Fels, a Manhattan psychiatrist and the author of "Necessary Dreams: Ambition in Women's Changing Lives." "It's a bit of a Rorschach test." To Fels (who happens to be married to the literary publisher and writer James Atlas), reading habits can be a rough indicator of other qualities. "It tells something about ... their level of intellectual curiosity, what their style is," Fels said. "It speaks to class, educational level."

Pity the would-be Romeo who earnestly confesses middlebrow tastes: sometimes, it's the Howard Roark problem as much as the Pushkin one. "I did have to break up with one guy because he was very keen on Ayn Rand," said Laura Miller, a book critic for Salon. "He was sweet and incredibly decent despite all the grandiosely heartless 'philosophy' he espoused, but it wasn't even the ideology that did it. I just thought Rand was a hilariously bad writer, and past a certain point I couldn't hide my amusement." (Members of theatlasphere.com, a dating and fan site for devotees of "Atlas Shrugged" and "The Fountainhead," might disagree.)

Judy Heiblum, a literary agent at Sterling Lord Literistic, shudders at the memory of some attempted date-talk about Robert Pirsig's 1974 cult classic "Zen and the Art of Motorcycle Maintenance," beloved of searching young men. "When a guy tells me it changed his life, I wish he'd saved us both the embarrassment," Heiblum said, adding that "life-changing experiences" are a "tedious conversational topic at best."

Let's face it — this may be a gender issue. Brainy women are probably more sensitive to literary deal breakers than are brainy men. (Rare is the guy who'd throw a pretty girl out of bed for revealing her imperfect taste in books.) After all, women read more, especially when it comes to fiction. "It's really great if you find a guy that reads, period," said Beverly West, an author of "Bibliotherapy: The Girl's Guide to Books for Every Phase of Our Lives." Jessa Crispin, a blogger at the literary site Bookslut.com, agrees. "Most of my friends and men in my life are nonreaders," she said, but "now that you mention it, if I went over to a man's house and there were those books about life's lessons learned from dogs, I would probably keep my clothes on."

Still, to some reading men, literary taste does matter. “I’ve broken up with girls saying, ‘She doesn’t read, we had nothing to talk about,’” said Christian Lorentzen, an editor at Harper’s. Lorentzen recalls giving one girlfriend Nabokov’s “Ada” — since it’s “funny and long and very heterosexual, even though I guess incest is at its core.” The relationship didn’t last, but now, he added, “I think it’s on her Friendster profile as her favorite book.” James Collins, whose new novel, “Beginner’s Greek,” is about a man who falls for a woman he sees reading “The Magic Mountain” on a plane, recalled that after college, he was “infatuated” with a woman who had a copy of “The Unbearable Lightness of Being” on her bedside table. “I basically knew nothing about Kundera, but I remember thinking, ‘Uh-oh; trendy, bogus metaphysics, sex involving a bowler hat,’ and I never did think about the person the same way (and nothing ever happened),” he wrote in an e-mail message. “I know there were occasions when I just wrote people off completely because of what they were reading long before it ever got near the point of falling in or out of love: Baudrillard (way too pretentious), John Irving (way too middlebrow), Virginia Woolf (way too Virginia Woolf).” Come to think of it, Collins added, “I do know people who almost broke up” over “The Corrections” by Jonathan Franzen: “‘Overrated!’ ‘Brilliant!’ ‘Overrated!’ ‘Brilliant!’”

Naming a favorite book or author can be fraught. Go too low, and you risk looking dumb. Go too high, and you risk looking like a bore — or a phony. “Manhattan dating is a highly competitive, ruthlessly selective sport,” Augusten Burroughs, the author of “Running With Scissors” and other vivid memoirs, said. “Generally, if a guy had read a book in the last year, or ever, that was good enough.” The author recalled a date with one Michael, a “robust blond from Germany.” As he walked to meet him outside Dean & DeLuca, “I saw, to my horror, an artfully worn, older-than-me copy of ‘Proust’ by Samuel Beckett.” That, Burroughs claims, was a deal breaker. “If there existed a more hackneyed, achingly obvious method of telegraphing one’s education, literary standards and general intelligence, I couldn’t imagine it.”But how much of all this agonizing is really about the books? Often, divergent literary taste is a shorthand for other problems or defenses. “I had a boyfriend I was crazy about, and it didn’t work out,” Nora Ephron said. “Twenty-five years later he accused me of not having laughed while reading ‘Candy’ by Terry Southern. This was not the reason it didn’t work out, I promise you.” Sloane Crosley, a publicist at Vintage/Anchor Books and the author of “I Was Told There’d Be Cake,” essays about single life in New York, put it this way: “If you’re a person who loves Alice Munro and you’re going out with someone whose favorite book is ‘The Da Vinci Code,’ perhaps the flags of incompatibility were there prior to the big reveal.”

Some people just prefer to compartmentalize. “As a writer, the last thing I want in my personal life is somebody who is overly focused on the whole literary world in general,” said Ariel Levy, the author of “Female Chauvinist Pigs” and a contributing writer at The New Yorker. Her partner, a green-building consultant, “doesn’t like to read,” Levy said. When she wants to talk about books, she goes to her book group. Compatibility in reading taste is a “luxury” and kind of irrelevant, Levy said. The goal, she added, is “to find somebody where your perversions match and who you can stand.”Marco Roth, an editor at the magazine n+1, said: “I think sometimes it’s better if books are just books. It’s part of the romantic tragedy of our age that our partners must be seen as compatible on every level.” Besides, he added, “sometimes people can end up liking the same things for vastly different reasons, and they build up these whole private fantasy lives around the meaning of these supposedly shared books, only to discover, too late, that the other person had a different fantasy completely.” After all, a couple may love “The Portrait of a Lady,” but if one half identifies with Gilbert Osmond and the other with Isabel Archer, they may have radically different ideas about the relationship.

For most people, love conquers literary taste. “Most of my friends are indeed quite shallow, but not so shallow as to break up with someone over a literary difference,” said Ben Karlin, a former executive producer of “The Daily Show” and the editor of the new anthology “Things I’ve Learned From Women Who’ve Dumped Me.” “If that person slept with the novelist in question, that would probably be a deal breaker — more than, ‘I don’t like Don DeLillo, therefore we’re not dating anymore.’”

Rachel Donadio is a writer and editor at the Book Review.

http://www.nytimes.com/2008/03/30/books/review/Donadio-t.html?_r=1&ex=1364616000&en=7d26d7538b6c6a65&ei=5088&partner=rssnyt&emc=rss&oref=slogin

Architecture and the Ability to Draw People In

By Philip Kennicott
Washington Post Staff Writer
Sunday, March 30, 2008; M04

Perhaps the most distinctive feature of a plan to redevelop the site of the old Convention Center is an alley.

The architecture firm of Foster and Partners, the same team that designed the space-age yet lyrical new covering over the courtyard of the Old Patent Office Building, has proposed a mixed-use assembly of office buildings, retail, apartments and condos, with a long, narrow alley running through the middle of it. It will not be a dark, dank alley, used mainly by garbage and delivery trucks, but rather an attempt to produce a narrow, bustling, urban street, a center for retail that mimics the canyons of commerce one finds in New York City. The alley will lead to a public plaza with some kind of fountain.

At a recent meeting of the National Capital Planning Commission, the oversight group that determines whether plans for building in and around the District are consistent with "the federal interest," there was grumbling about the alley. It didn't seem very *Washington* to some members, who noted that the capital city is distinguished by its wide and open streets, not narrow ones. Without quite damning the proposal, some members argued that it was an attempt to introduce a more vertical, urban feel to a decidedly horizontal city.

There is something revealing in this language. In Washington, there are people who wander the streets looking for things that *feel like a city*. And then there is the school of urban planning that worries more about whether this or that building feels like Washington. What Foster is proposing may not be what Washingtonians are used to, architecturally. But it is a modest effort to produce something that will appeal to those of us who crave more of a city.

And what is a city?

Free-associate on the subject, and the words that come to mind are usually about people, motion, business, crowds and chance encounters. Artists who do architectural renderings create the feel of a city through the strange use of spectral people overlaid on the streetscape, colorful, almost transparent renderings of bodies in motion. Cars are reduced to a blur of headlights and taillights, a fantasy of the automobile as motion, without any suggestion of traffic jams, honking horns or near-miss pedestrian encounters.

An early rendering of a street design for the area near the new Nationals stadium, produced by Gensler, a D.C.-based firm, is revealing. People, some of them represented by nothing more than a human-shaped blur, spill out into the street, where only two cars are visible. Traffic is represented by dynamic streaks of light. Small crowds of people gather in front of shops and at street corners. Others look down from balconies just above the street level. Above the happy crowds is a canopy of thin metal arches that form a trellis, from which hang streetlights, as if the whole streetscape is meant to feel like an indoor space with overhead lighting.

There are lots of problems with this drawing -- no black people and too many of the usual brands plastered everywhere. The metal arches over the street may violate laws meant to preserve the open, uncluttered vistas created by L'Enfant's original street layout, and they certainly contribute to visual clutter. But the image is clearly meant to suggest something dynamic, something urban, something better than the often sterile feel of Washington's supposedly distinctive grand avenues.

Which is the same idea behind the commercial alley planned for the old Convention Center site. It will force people to move about in a denser urban space, with the psychological comfort of a narrower, more interior feeling of enclosure. It is, to the street, what the kitchen is to the party: a space for clustering that works despite the greater appeal of bigger rooms and more comfy seating in the empty living room.

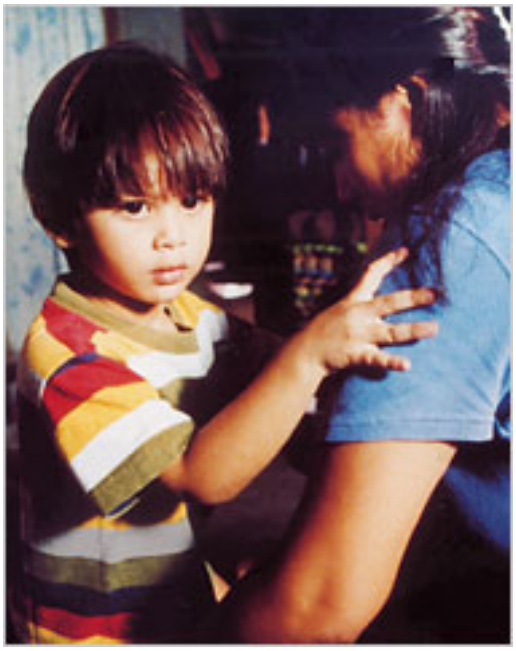
It is, of course, equally possible that it won't feel urban but rather like an imitation of the enclosed faux-street of the suburban shopping mall. It may well feel forced, contrived and fake. The good thing, however, is that if it fails, it won't be a particularly onerous encumbrance on the city. Plans for the Old Convention Center include opening up the old streets -- parts of I Street and 10th Street NW -- that were erased when the original convention center footprint was laid out. Those streets will be a permanent gift back to the city, and they will be entirely Washington in their feel -- for better and worse.

The alley is an addition to the street grid, and an experiment. Its potential success -- if it doesn't feel like an indoor version of Tysons Corner, if people actually gather there, if it has a nice hum through the day -- may teach us lessons about how Washington needs to be less like Washington. It may be that the basic psychology of street life -- the need to be thrown upon one another -- can't thrive without changes to the very bones of our city. The alley, a little crevasse in the downtown wall of blank windows and masonry, may open up something larger than anyone devoted to the *feels like Washington* school of planning can predict.

http://www.washingtonpost.com/wp-dyn/content/article/2008/03/28/AR2008032800964.html?nav=rss_print/style

Voice, Eyes and Camera of Katrina Survivors

By MANOHLA DARGIS



The main reason to check out the second and slack final week of this year's edition of New Directors/New Films, presented by the Film Society of Lincoln Center and the Museum of Modern Art, is the superb documentary "Trouble the Water," about Hurricane Katrina and its equally calamitous aftermath. One of the best American documentaries in recent memory, the film was directed and produced by Tia Lessin and Carl Deal, a couple of New Yorkers who, like much of the rest of the world, were watching television in horror in 2005 as the natural disaster was quickly followed by a human one.

Unlike most of us Ms. Lessin and Mr. Deal took action, flying to Louisiana a week after the storm hit. In an interview with the online journal Indiewire the filmmakers, who have worked on several Michael Moore features, including "Fahrenheit 9/11," said they were originally interested in documenting the return of National Guard soldiers from Baghdad, the idea being that they would follow the troops as they entered what was essentially a new battle front. Their attempts to tell that story, however, were thwarted by the National Guard public affairs team, which, the filmmakers said, blocked access to the troops with a provocative kicker: " 'Fahrenheit 9/11' screwed it up for all you guys."

At that point some filmmakers might have packed it in. For whatever reason — it's easy to imagine that laboring alongside Mr. Moore requires enormous patience — they stuck around Louisiana and did the most important thing any filmmaker working in either fiction or nonfiction can do: They let their subject take them to the unexpected. In this case the unexpected was embodied by two residents of the Ninth Ward in New Orleans, an aspiring musician named Kimberly Roberts and her husband, Scott Roberts, who more or less commandeered the documentarians into making a very different story than the one they had envisioned. Ms. Lessin and Mr. Deal didn't just turn the camera on the Robertses; they handed the film over to them.

It turns out that Ms. Roberts had bought a video camera on the street just before Katrina landed. With no means of escape, she and her husband had no choice but to ride out the storm. Perhaps in an attempt to put some distance between her and the coming disaster, she decided to videotape the storm, a project to which she remained faithful even as the water crept up her front steps. Like anyone else who grew up watching television, Ms. Roberts turns out to be well-versed in the idiom of television news, an apprenticeship that becomes apparent as she roams her increasingly inundated neighborhood interviewing friends and family and even at times signs off using her rap name, Black Kold Madina.

A beautiful woman with a bashful smile and a swagger, Ms. Roberts is an extraordinarily vivid screen presence. She's a tremendous documentary subject, and if "Trouble the Water" simply tracked what this one gutsy 24-year-old endured as she and her husband and friends moved to higher ground and eventually out of Louisiana altogether, it would be enough to warrant your attention. But Ms. Lessin and Mr. Deal haven't cooked up yet another softheaded story about triumphant humanity; with the help of these New Orleans residents, they have made a powerful political argument, backed by evidence provided by the shaming indifference of the government, that to be poor and black in America is to be an exile in America.

It's like "we lost our citizenship," Ms. Roberts says with haunting directness. It's impossible not to feel the sting of those words and their truth. There's plenty of sting throughout "Trouble the Water" (the title comes from a spiritual), as Ms. Lessin and Mr. Deal repeatedly and fluidly move back and forth between the Katrina story as it was lived and recounted by the Robertses and how it was shaped rather differently by both the news media and government officials like Michael D. Brown, the soon-to-be-disgraced director of the Federal Emergency Management Agency. The distance between those two narratives is at times shockingly if not surprisingly vast, and much like the New Orleans levees, one of them is finally breached.

One of the strongest of the other 13 features showing this week is "Foster Child," a touching Filipino fiction about an indigent woman who supplements her family's income by serially fostering very young children. With a sure hand and indelible tenderness, the director Brillante Mendoza brings you into the cluttered, overcrowded, chaotic world of Thelma, a wife and mother who has made a place in her tiny home and large heart for a toddling charmer, John-John. Shot in the familiar quasidocumentary, tag-along style, "Foster Child" at first seems too narrowly focused on Thelma's personal tribulations but eventually throws open a window onto a world in which the only available remedy to the combination of poverty and religion rests in the bank accounts of childless foreigners.

Among the week's other worthwhile entries is the Thai film "Wonderful Town," a fine, drifty tale with a lovely sense of place from Aditya Assarat that takes an unfortunate swerve into melodramatic violence; "XXY," a delicate, emotionally potent Argentine drama from Lucía Puenzo about a teenage hermaphrodite; and "Valse Sentimentale," a grubby love story from Greece courtesy of Constantina Voulgaris that will either work your nerves raw or charm you. (I caved.) Finally there's "A Lost Man," a road movie set in the Middle East from Danielle Arbid about two men — one a French photographer with a taste for kink, the other a dazed refugee from Lebanon's civil war — who set off on an idiosyncratic, at times dark journey into the soul. Each takes turns at being lost; only one ends up found.

New Directors/New Films runs through Sunday at the Walter Reade Theater, 165 West 65th Street, Lincoln Center, and at the Museum of Modern Art; filmlinc.com. Tickets: (212) 721-6500.

http://www.nytimes.com/2008/03/31/movies/31new.html?th&emc=th#

Exotica of Brazil in Motion

By ROSLYN SULCAS

For those who would like a virtual trip to Brazil, Grupo Corpo offers a safe adventure. It's the exotic as tourist package: the undulating torsos and rhythmic stamping footwork that connote an African heritage, and the stretched, balletic limbs and light, airborne jumps of the European colonizers. And all set to pulsating music, performed by virtuoso dancers who seamlessly integrate these disparate influences into their ever-malleable, apparently tireless bodies.

This Brazilian troupe, which opened on Tuesday night at the Brooklyn Academy of Music, is remarkable for the disciplined, uniform precision of its spectacular dancing. Unfortunately the dances themselves, by Rodrigo Pederneiras — whose brother Paulo formed the company in 1975 — appear equally uniform. The two works presented this year are the 1998 "Benguelê" and the 2007 "Breu," but it's hard to see any evolution in Rodrigo Pederneiras's style or approach.In "Benguelê" (which refers to slaves' nostalgic longing for Africa) he makes extensive use of crouching, stooped bodies in a simian, loping walk, arms hanging loosely and head down to suggest tribal dances, rituals, animals, a precivilization. And in "Breu" (implying a murky or dim light) he deploys the dancers from the floor, often flat bodied as they propel themselves horizontally into the air or move on their sides by wheeling one leg over the other. But because Mr. Pederneiras consistently uses the same strategies in these pieces, these varying and often ingenious movement ideas all arrive at the same end: a slick, glossy entertainment with no content or emotional impact.

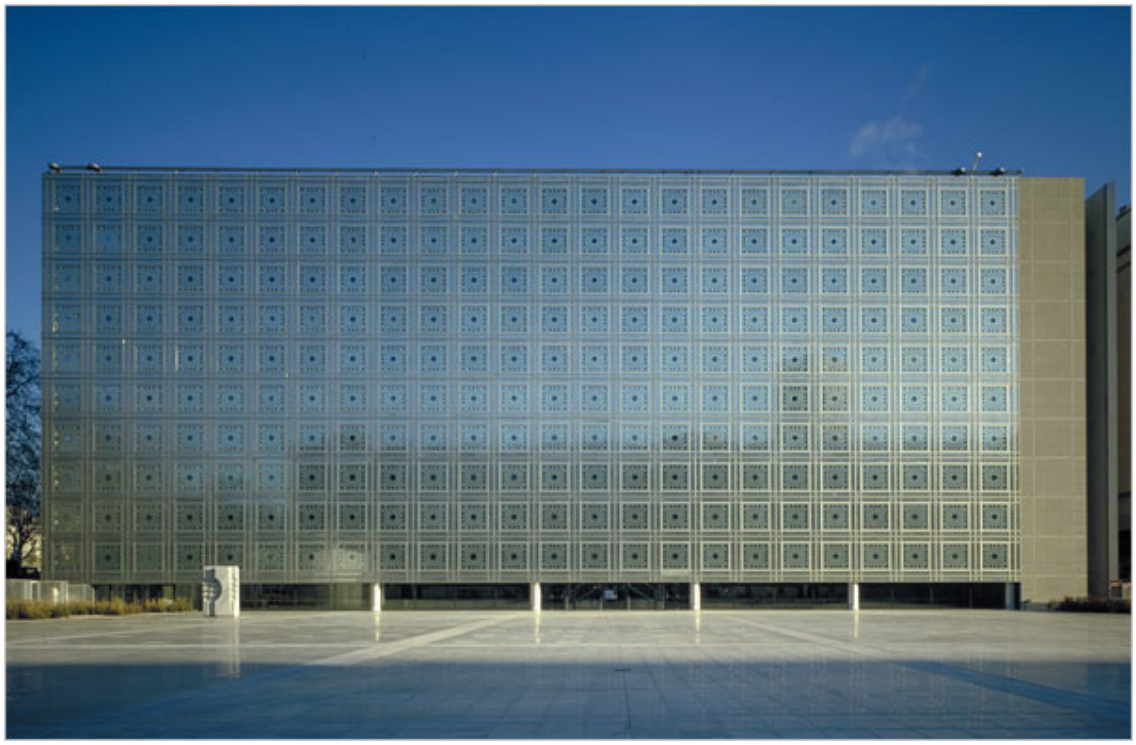
In both works a group of slow-moving dancers consistently provides a visual chorus for a faster-moving pair or trio. Sections frequently end with a jump into a partner's arms and a blackout. Episodes come in succession with no particular logic or association. (Why, after the dark and dire part of "Breu" that features women dangling corpselike over the men's shoulders, does everyone suddenly perk up and do high kicks?) Grupo Corpo has fabulous dancers (a special nod to Everson Botelho and Edson Beserra, whose electrifying solos briefly imbued both works with intent), catchy music (by Joäo Bosco for "Benguelê" and Lenine for "Breu"), and, in "Breu," striking black-and-white costumes (by Freusa Zechmeister) on a shiny, black-paneled stage. That's a lot — the audience, who gave the company an ovation, thought so — but at no point is it art.

Grupo Corpo performs through Saturday at the Brooklyn Academy of Music, 30 Lafayette Avenue, at Ashland Place, Fort Greene; (718) 636-4100, bam.org.

http://www.nytimes.com/2008/03/27/arts/dance/27grup.html?ref=dance

French Architect Wins Pritzker Prize

By ROBIN POGREBIN



Jean Nouvel, the bold French architect known for such wildly diverse projects as the muscular Guthrie Theater in Minneapolis and the exotically louvered Arab World Institute in Paris, has received architecture's top honor, the Pritzker Prize.

Mr. Nouvel, 62, is the second French citizen to take the prize, awarded annually to a living architect by a jury chosen by the Hyatt Foundation. (Christian de Portzamparc of France won in 1994.) His selection is to be announced Monday.

"For over 30 years Jean Nouvel has pushed architecture's discourse and praxis to new limits," the Pritzker jury said in its citation. "His inquisitive and agile mind propels him to take risks in each of his projects, which, regardless of varying degrees of success, have greatly expanded the vocabulary of contemporary architecture."

In extending that vocabulary Mr. Nouvel has defied easy categorization. His buildings have no immediately identifiable signature, like the curves of Frank Gehry or the light-filled atriums of Renzo Piano. But each is strikingly distinctive, be it the Agbar Tower in Barcelona (2005), a candy-colored, bullet-shaped office tower, or his KKL cultural and congress center in Lucerne, Switzerland (2000), with a slim copper roof cantilevered delicately over Lake Lucerne.

"Every time I try to find what I call the missing piece of the puzzle, the right building in the right place," Mr. Nouvel said this month over tea at the Mercer Hotel in SoHo.

Yet he does not design buildings simply to echo their surroundings. "Generally, when you say context, people think you want to copy the buildings around, but often context is contrast," he said.

"The wind, the color of the sky, the trees around — the building is not done only to be the most beautiful," he said. "It's done to give advantage to the surroundings. It's a dialogue."

The prize, which includes a $100,000 grant and a bronze medallion, is to be presented to Mr. Nouvel on June 2 in a ceremony at the Library of Congress in Washington.

Among Mr. Nouvel's New York buildings are 40 Mercer, a 15-story red-and-blue, glass, wood and steel luxury residential building completed last year in SoHo, and a soaring 75-story hotel-and-museum tower with crystalline peaks that is to be built next to the Museum of Modern Art in Midtown. Writing in The New York Times in November, Nicolai Ouroussoff said the Midtown tower "promises to be the most exhilarating addition to the skyline in a generation."

Born in Fumel in southwestern France in 1945, Mr. Nouvel originally wanted to be an artist. But his parents, both teachers, wanted a more stable life for him, he said, so they compromised on architecture.

"I realized it was possible to create visual compositions" that, he said, "you can put directly in the street, in the city, in public spaces."

At 20 Mr. Nouvel won first prize in a national competition to attend the École des Beaux-Arts in Paris. By the time he was 25 he had opened his own architecture firm with François Seigneur; a series of other partnerships followed.

Mr. Nouvel cemented his reputation in 1987 with completion of the Arab World Institute, one of the "grand projects" commissioned during the presidency of François Mitterrand. A showcase for art from Arab countries, it blends high technology with traditional Arab motifs. Its south-facing glass facade, for example, has automated lenses that control light to the interior while also evoking traditional Arab latticework. For his boxy, industrial Guthrie Theater, which has a cantilevered bridge overlooking the Mississippi River, Mr. Nouvel experimented widely with color. The theater is clad in midnight-blue metal; a small terrace is bright yellow; orange LED images rise along the complex's two towers.

In its citation, the Pritzker jury said the Guthrie, completed in 2006, "both merges and contrasts with its surroundings." It added, "It is responsive to the city and the nearby Mississippi River, and yet, it is also an expression of theatricality and the magical world of performance."

The bulk of Mr. Nouvel's commissions work has been in Europe however. Among the most prominent is his Quai Branly Museum in Paris (2006), an eccentric jumble of elements including a glass block atop two columns, some brightly colorful boxes, rust-colored louvers and a vertical carpet of plants. "Defiant, mysterious and wildly eccentric, it is not an easy building to love," Mr. Ouroussoff wrote in The Times.

A year later he described Mr. Nouvel's Paris Philharmonie concert hall, a series of large overlapping metal plates on the edge of La Villette Park in northeastern Paris, as "an unsettling if exhilarating trip into the unknown."

Mr. Nouvel has his plate full at the moment. He is designing a satellite of the Louvre Museum in Abu Dhabi, in the United Arab Emirates, giving it a shallow domed roof that creates the aura of a just-landed U.F.O. He recently announced plans for a high-rise condominium in Los Angeles called SunCal tower, a narrow glass structure with rings of greenery on each floor. His concert hall for the Danish Broadcasting Corporation is a tall rectangular box with transparent screen walls.

Before dreaming up a design, Mr. Nouvel said, he does copious research on the project and its surroundings. “The story, the climate, the desires of the client, the rules, the culture of the place,” he said. “The references of the buildings around, what the people in the city love.”

“I need analysis,” he said, noting that every person “is a product of a civilization, of a culture.” He added: “Me, I was born in France after the Second World War. Probably the most important cultural movement was Structuralism. I cannot do a building if I can’t analyze.”

Although he becomes attached to his buildings, Mr. Nouvel said, he understands that like human beings, they grow and change over time and may even one day disappear. “Architecture is always a temporary modification of the space, of the city, of the landscape,” he said. “We think that it’s permanent. But we never know.”

http://www.nytimes.com/2008/03/31/arts/design/31prit.html?ref=design

The Topic Is Race; the Art Is Fearless

By HOLLAND COTTER

IN the 1970s the African-American artist Adrian Piper donned an Afro wig and a fake mustache and prowled the streets of various cities in the scowling, muttering guise of the Mythic Being, a performance-art version of a prevailing stereotype, the black male as a mugger, hustler, gangsta.

In the photographs that resulted you can see what she was up to. In an era when some politicians and much of the popular press seemed to be stoking racial fear, she was turning fear into farce — but serious, and disturbing, farce, intended to punch a hole in pervasive fictions while acknowledging their power.

Recently a new kind of Mythic Being arrived on the scene, the very opposite of the one Ms. Piper introduced some 30 years ago. He doesn't mutter; he wears business suits; he smiles. He is by descent half black African, half white American. His name is Barack Obama.

On the rancorous subject of the country's racial history he isn't antagonistic; he speaks of reconciliation, of laying down arms, of moving on, of closure. He is presenting himself as a 21st-century postracial leader, with a vision of a color-blind, or color-embracing, world to come.

Campaigning politicians talk solutions; artists talk problems. Politics deals in goals and initiatives; art, or at least interesting art, in a language of doubt and nuance. This has always been true when the subject is race. And when it is, art is often ahead of the political news curve, and heading in a contrary direction.

In a recent solo debut at Nicole Klagsbrun Gallery in Chelsea a young artist named Rashid Johnson created a fictional secret society of African-American intellectuals, a cross between Mensa and the Masons. At first uplift seemed to be the theme. The installation was framed by a sculpture resembling giant cross hairs. Or was it a microscope lens, or a telescope's? The interpretive choice was yours. So was the decision to stay or run. Here was art beyond old hot-button statements, steering clear of easy condemnations and endorsements. But are artists like Mr. Johnson making "black" art? Political art? Identity art? There are no answers, or at least no unambiguous ones.

Since Ms. Piper's Mythical Being went stalking in the 1970s — a time when black militants and blaxploitation movies reveled in racial difference — artists have steadily challenged prevailing constructs about race.

As multiculturalism entered mainstream institutions in the 1980s, the black conceptualist David Hammons stayed outdoors, selling snowballs on a downtown Manhattan sidewalk. And when, in the 1990s, Robert Colescott was selected as the first African-American to represent the United States at the Venice Biennale, he brought paintings of figures with mismatched racial features and skin tones, political parables hard to parse.

At the turn of the present millennium, with the art market bubbling up and the vogue for identity politics on the wane, William Pope.L — the self-described "friendliest black artist in America" — belly-crawled his way up Broadway, the Great White Way, in a Superman outfit, and ate copies of The Wall Street Journal.

Today, as Mr. Obama pitches the hugely attractive prospect of a postracial society, artists have, as usual, already been there, surveyed the terrain and sent back skeptical, though hope-tinged, reports. And you can read those reports in art all around New York this spring, in retrospective surveys like "Wack! Art and the Feminist Revolution" currently at the P.S 1 Contemporary Art Center in Queens, in the up-to-the-minute sampler that is the 2008 Whitney Biennial, in gallery shows in Chelsea and beyond, and in the plethora of art fairs clinging like barnacles to the Armory Show on Pier 94 this weekend.

"Wack!" is a good place to trace a postracial impulse in art going back decades. Ms. Piper is one of the few African-American artists in the show, along with Howardena Pindell and Lorraine O'Grady. All three began their careers with abstract work, at one time the form of black art most acceptable to white institutions, but went on to address race aggressively.

In a 1980 performance video, "Free, White and 21," Ms. Pindell wore whiteface to deliver a scathing rebuke of art-world racism. In the same year Ms. O'Grady introduced an alter ego named "Mlle Bourgeoise Noire" who, dressed in a beauty-queen gown sewn from white formal gloves, crashed museum openings to protest all-white shows. A few years later Ms. Piper, who is light skinned, began to selectively distribute a printed calling card at similar social events. It read:

Dear Friend,

I am black. I am sure you did not realize this when you made/laughed at/agreed with that racist remark. In the past I have attempted to alert white people to my racial identity in advance. Unfortunately, this invariably causes them to react to me as pushy, manipulative or socially inappropriate. Therefore, my policy is to assume that white people do not make these remarks, even when they believe there are not black people present, and to distribute this card when they do.

I regret any discomfort my presence is causing you, just as I am sure you regret the discomfort your racism is causing me.

Sincerely yours,

Adrian Margaret Smith Piper

Although these artists' careers took dissimilar directions, in at least some of their work from the '70s and '80s they all approached race, whiteness as well as blackness, as a creative medium. Race is treated as a form of performance; an identity that could, within limits, be worn or put aside; and as a diagnostic tool to investigate social values and pathologies.

Ms. Piper's take on race as a form of creative nonfiction has had a powerful influence on two generations of African-Americans who, like Mr. Obama, didn't experience the civil rights movement firsthand, and who share a cosmopolitan attitude toward race. In 2001 that attitude found corner-turning expression in "Freestyle," an exhibition organized at the Studio Museum in Harlem by its director, Thelma Golden.

When Ms. Golden and her friend the artist Glenn Ligon called the 28 young American artists "postblack," it made news. It was a big moment. If she wasn't the first to use the term, she was the first to apply it to a group of artists who, she wrote, were "adamant about not being labeled 'black' artists, though their work was steeped, in fact deeply interested, in redefining complex notions of blackness."

The work ranged from mural-size images of police helicopters painted with hair pomade by Kori Newkirk, who lives in Los Angeles, to computer-assisted geometric abstract painting by the New York artist Louis Cameron. Mr, Newkirk's work came with specific if indirect ethnic references; Mr. Cameron's did not. Although "black" in the Studio Museum context, they would lose their racial associations in an ethnically neutral institution like the Museum of Modern Art.

Ethnically neutral? That's just a code-term for white, the no-color, the everything-color. For whiteness is as much — or as little — a racial category as blackness, though it is rarely acknowledged as such wherever it is the dominant, default ethnicity. Whiteness is yet another part of the postracial story. Like blackness, it has become a complicated subject for art. And few have explored it more forcefully and intimately than Nayland Blake.

Mr. Blake, 48, is the child of a black father and a white mother. In various performance pieces since the 1990s he has dressed up as a giant rabbit, partly as a reference to Br'er Rabbit of Joel Chandler Harris's Uncle Remus stories, a wily animal who speaks in Southern black dialect and who survives capture by moving fast and against expectations.

In 2001 Mr. Blake appeared in a video with another artist, AA Bronson. Each had his face slathered with cake frosting, chocolate in Mr. Blake's case, vanilla in Mr. Bronson's. When then two men exchanged a long kiss, the colors, and presumably the flavors, began to blend. Shared love, the implication was, dissolves distinctions between "black" and "white," which, as racial categories, are cosmetic, superficial.

As categories they are also explosive. In 1984, when Mr. Hammons painted a poster of the Rev. Jesse Jackson as a blond, blue-eyed Caucasian and exhibited it outdoors in Washington, the piece was trashed by a group of African-American men. Mr, Hammons intended the portrait, "How Ya Like Me Now," as a comment on the paltry white support for Mr. Jackson's presidential bid that year. Those who attacked it assumed the image was intended as an insult to Mr. Jackson.

More recently, when Kara Walker cut out paper silhouettes of fantasy slave narratives, with characters — black and white alike — inflicting mutual violence, she attracted censure from some black artists. At least some of those objecting had personal roots in the civil rights years and an investment in art as a vehicle for racial pride, social protest and spiritual solace.

Ms. Walker, whose work skirts any such overt commitments, was accused of pandering to a white art market with an appetite for images of black abjection. She was called, in effect, a sellout to her race.

In a television interview a few weeks ago, before he formed plans to deliver his speech on race, Mr. Obama defended his practice of backing off from discussion of race in his campaign. He said it was no longer a useful subject in the national dialogue; we're over it, or should be.

But in fact it can be extremely useful. There is no question that his public profile has been enhanced by his Philadelphia address, even if the political fallout in terms of votes has yet to be gauged.

Race can certainly be used to sell art too, and the results can be also be unpredictable. As with politics, timing is crucial.

In 1992 the white artist team Pruitt-Early (Rob Pruitt and Walter Early) presented a gallery exhibition called "The Red Black Green Red White and Blue Project." Its theme was the marketing of African-American pop culture, with an installation of black-power posters, dashiki cloth and tapes of soul music bought in Harlem.

What might, at a later time or with different content, have been seen as a somewhat dated consumerist critique proved to be a public relations disaster. The artists were widely condemned as racist and all but disappeared from the art world.

Eight years later, with the cooling of identity politics, a show called "Hip-Hop Nation: Roots, Rhymes and Rage" arrived, with no apparent critical component, at the Brooklyn Museum of Art. An array of fashion images, videos and artifacts associated with stars like the Notorious B.I.G., Missy Elliott and Tupac Shakur, it was assumed to be a welcoming (if patronizing) gesture to the museum's local African-American audience. Yet its appearance coincided with the general massive marketing of hip-hop culture to middle-class whites, a phenomenon that Mr. Pruitt and Mr. Early had been pointing to.

Were Pruitt-Early postblack artists ahead of their time, offering a new take on race, as a movable feast that collided with older, essentialist attitudes? If so, they would probably find plenty of company now in artists who stake out terrain both black and postblack, white and postwhite.

Mr. Pope.L (he who crawled up Broadway) does so with a posture of radical outsiderness that cancels bogus notions of racial or cultural essence. Basically he short-circuits the very concept of what an artist, black or white, "should" be. He smiles as he inches up the street on all fours; he uncomplainingly devours news of money he'll never have. He paints murals with peanut butter and makes sculpture from Pop-Tarts, the stuff of welfare meals. In many ways his main subject would seem to be class, not race. Yet race is everywhere in his art. He works with mostly white materials — mayonnaise, milk, flour — but he also runs the Black Factory, a mobile workshop-van equipped to transform any object, no matter what color, into a "black" object. How? By covering it with cheap black paint.

For a retrospective at the Maine College of Art in Portland in 2003, Mr. Pope.L presented a performance piece with the optimistic title "eRacism," but that was entirely about race-based conflict. In a photograph in the show's catalog, he has the word written in white on his bare black chest. Were he pale-skinned, it might have been all but invisible.Whereas Mr. Pope.L has shaped himself into a distinctive racial presence, certain other artists of color are literally built from scratch. A Miami artists collective called BLCK, in the current Whitney Biennial, doesn't really exist. The archival materials attributed to it documenting African American life in the 1960s is actually the creation of single artist: Adler Guerrier,

who was born in Haiti in 1975. Projects by Edgar Arceneaux, who is also in the biennial, have included imaginary visual jam sessions with the jazz visionary Sun Ra and the late Conceptual artist Sol Lewitt. Earlier in this art season, a white artist, Joe Scanlan, had a solo gallery show using the fictional persona of a black artist, Donelle Woolford. Ms. Woolford was awarded at least one appreciative review, suggesting that, in art at least, race can be independent of DNA. The topic of race and blood has always been an inflammatory one in this country. Ms. Piper broached it in a 1988 video installation and delivered some bad news. Facing us through the camera, speaking with the soothing composure of a social worker or grief counselor, she said that, according to statistics, if we were white Americans, chances were very high that we carried at least some black blood. That was the legacy of slavery. She knew we would be upset. She was sorry. But was the truth. The piece was titled "Cornered." And are we upset? I'll speak for myself; it's not a question. Of course not. Which is a good thing, because the concept of race in America — the fraught fictions of whiteness and blackness— is not going away soon. It is still deep in our system. Whether it is or isn't in our blood, it's in our laws, our behavior, our institutions, our sensibilities, our dreams. It's also in our art, which, at its contrarian and ambiguous best, is always on the job, probing, resisting, questioning and traveling miles ahead down the road.

http://www.nytimes.com/2008/03/30/arts/design/30cott.html?th&emc=th