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In a year of fragmentation, no easy fix

By Joanna Weiss, Globe Staff | December 30, 2007

This was the year we all came to terms with the quagmire. And yearned for someone to fix it.

Which quagmire? All of them. If there was a common theme to 2007, it may have been this: the intractable situation, the daunting impasse. The lengthening war in Iraq set the stage for a wide, uncertain presidential race. (Which candidate, across the board, isn't running as a sort of wartime fixer?) Pop culture was filled with characters in pickles, chased by persistent assassins, confronting unwanted pregnancies.

And on the real-life side of entertainment news, the year ended with the Writers Guild of America strike, an acrimonious fight over what studios and networks should pay the scribes when shows appear online. There's no indication of when the strike will end or who could bring the sides together. A rumor that Arnold Schwarzenegger might step in quickly fizzled. If he can't fix an entertainment-industry problem, who can?

In fact, popular culture this year was full of would-be fixers, approaching ugly messes with varying success. The title character in the movie "Michael Clayton" - a morally-compromised lawyer for a firm with evil clients - found a way to square his conscience, if not quite his bank account. Nick George, the would-be philanthropist in ABC's "Dirty Sexy Money," had less success corralling the whims of a wealthy and ill-behaved family. And in the year's saddest saga of a would-be fixer, Ed Tom Bell, the wistful sheriff in "No Country for Old Men," concludes that he's powerless to fight - or even comprehend - a growing undercurrent of raw violence.

It was a stunning, artful statement of futility, a vision of the fixer as a sad and lonely soul. "I'm not a miracle worker. I'm a janitor," Michael Clayton says wearily at one point in that film. And it wasn't such a stretch to feel frustration this year, a sense of groundlessness and loneliness in a world that's ever-more fragmented. This year seemed, at times, to mark the continued demise of collective culture. In music, record sales were lackluster. There was no transcendent album, and barely a transcendent single (though Rihanna's "Umbrella" came close, only because you couldn't avoid it). Radiohead's experiment in label-free living - an album released online, and sold on a pay-what-you-think-you-should basis - generated buzz, but no fortune.

On TV, network viewership is down, though some of that could be blamed on this fall's lackluster crop of new shows. In movies, virtually all of the blockbusters were sequels. In books, Harry Potter raised some thrill, but his tale is over now, and the publishing industry is afraid. Studies show that young people don't read for pleasure anymore.

And while we still had cultural glue, our collective whims were hard to reconcile - two halves of a split personality, caught in a tug of war. Half of the time, we were drawn most to the most salacious stuff. This was the year when Perez Hilton edged his way into the mainstream, when the scandal-sheet TMZ gave us such briefly consuming news as Alec Baldwin's nasty voice mail to his daughter. We got blanket coverage of Anna Nicole Smith's death and its aftermath. We savored the details of Britney Spears's spiral and miserably failed comeback. We talked endlessly about Paris Hilton's short-term stint in jail.

But half of the time, we yearned for something more uplifting. Television's most striking successes tended to be wholesome family fare: "American Idol." "Dancing With the Stars." "High School Musical 2." We swooned over fresh-faced, clean-cut boys: Zac Efron, Sanjaya Malakar. We gushed over celebrities with charity missions (Esquire declared Angelina Jolie "the best woman in the world") and inspired a sort of celebrity-civic-duty arms race. This year, Oprah Winfrey launched her sometimes-troubled school for African girls and is now trying to lead the public in the presidential campaign.

Whether the public will listen is another, open question; if her candidate of choice, Barack Obama, prevails in early primaries next month, he might owe as much credit to "Obama Girl." That was the YouTube video sensation that solidified his image as someone hip, handsome, and new. And Obama was smart enough not to protest. Like other politicians who came to terms with the Internet this season, he learned that you can't control the snarks. You can only ride the wave.

If there was a way out of any dilemma this year - a lesson for would-be fixers - it was the need to be fluid. Don't try to change your situation. Just adapt. This year, TV networks took some giant steps toward embracing the technology they used to fear. Since viewers clearly want to watch shows online, the networks have now launched better media players. Producers, once afraid of losing viewers to online content, are starting to produce shows directly for the Internet.

The movies are seeking a fix, as well. Multiplexes, fearing audience erosion, are making plans for bigger theatrical experiences, from 3-D movies to more IMAX screens, including one that's coming to downtown Boston. Even in high culture, convergence is the catchword. New York's Metropolitan Opera was one of several companies that simulcast its shows in movie theaters.

It's heartening stuff, watching solutions start to form. It will feel even better if some of those efforts actually turn out to work. And there's hope. Some of the most enduring cultural moments of 2007 were born of impossible situations and ingenious resolutions. David Chase, faced with the challenge of ending 'The Sopranos' with a surprise, came up with a conclusion that was as deep and layered as it was unexpected - and striking for its lack of resolution. Of all of the songs to halt mid-chorus, Journey's "Don't Stop Believin' " seemed the best possible choice. Hope and hopelessness were balanced. It was our job to decide.

So page Ed Tom Bell, and tell him that all is not lost. We do have some choice in the matter. The sad, helpless would-be fixer had a pop culture counterpoint this year: the heroine who finds her own solutions. That was the running theme in a spate of unplanned-pregnancy films, culminating in the critical darling "Juno." The title character, a 16-year-old pregnant girl, thinks she's found a dream scenario for her unborn child, watches her plans unravel, and devises an alternative. She acts as her own fixer. And by the end of the movie, it looks as if things are going to work out fine.

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http://www.boston.com/ae/theater_arts/articles/2007/12/29/in_a_year_of_fragmentation_no_easy_fix?mode=PF

Technologies on the rise in 2008
A number of technologies have exploded throughout 2007, from Facebook and the iPhone to the Nintendo Wii.

But what will be making the headlines over the next 12 months?

Here the BBC News website gives its predictions for five technologies that could become big in 2008.

THE WEB TO GO

One of the biggest drawbacks of web applications is that they can only be used when there is an internet connection.

Although mobile working is becoming increasingly common, ubiquitous connectivity is still a long way off.

But there are tools that are beginning to blur the online and offline worlds.

Over the last 12 months a number of technologies that could have a significant impact on the way people use the web.

Search giant Google announced its Gears application whilst Adobe launched Air and Microsoft released Silverlight.

All the technologies have the ability to take rich web content and make some of it available offline.

For example Adobe has shown off an Ebay desktop application built using Air that would allow users to do much of the legwork required in setting up auctions offline.

The next time the user connects to the internet the listing would be posted to the website.

Silverlight offers the reverse - the ability to build desktop applications and allow them to

run in a web browser.

Google Gears does not allow the creation of new applications but does allow web applications to be taken offline.

For example, the developers of the free online office package Zoho use Gears to allow users to use their applications in a similar way to a normal desktop office program.

2008 should see more examples of applications built with or using one of the three tools to make a truly seamless computing experience.

ULTRA MOBILE PCs

Various devices have tried to fill the role between a PDA and a full-blown laptop over the years, but none has taken off.

But 2008 could be the year when the Ultra Mobile PCs (UMPCs) finally have their day.

The first devices were launched in 2006, but they have never gone mass market - partly because of a combination of high prices and poor battery life.

But towards the end of 2007 a series of new products started to hit shelves.

The most talked about was the Asus EEE, a sub-£200 laptop about the size of a hardback book.

The Taiwanese manufacturer has predicted it will sell five million of the tiny machines in 2008.

The low-cost laptop runs open source Linux software and weighs less than one kilogram.

To cut down on weight it does away with a hard drive in favour of just 4GB of flash memory.

Whilst the storage is small, its use of flash highlights another trend of 2008.

Flash memory has been gradually increasing in power. For example, electronics giant Samsung recently showed off chips that could be used to make 128GB memory cards.

As a result the technology is now starting to challenge hard drives as the storage of choice on laptops.

Apple is even rumoured to be launching ultra-thin Macbooks using flash in 2008.

IPTV

Internet TV has been hampered in the past because broadband speeds were not fast enough to deliver a reliable service.

But today more than half of all UK homes have a broadband connection, at an average speed of four megabits a second (Mbps), according to the Organisation for Economic Co-operation and Development (OECD).

And speeds are increasing. Next year, ADSL2+ comes online, promising broadband speeds of up to 24Mbps.

As a result, more and more internet protocol television services are being launched.

Alongside established services from BT vision and Virgin Media, other operators are getting in on the business.

Following the launch of a successful service in the Czech Republic, mobile phone operator O2 plans to launch a UK service in 2008.

Others such as Orange are expected to follow suit.

The BBC will also be pushing its iPlayer in 2008, a service that allows people to catch up on the corporation's output over the web. Whilst in November, the BBC partnered with rivals ITV and Channel 4 to launch a joint on-demand service.

Existing firms are also predicting rapid growth through 2008.

Mary Turner, the chief executive of Tiscali UK said in December that its service is currently signing up 250 people each day and expects to have 50,000 users by the end of the year

It is aiming for 200,000 by the end of 2008.

WIMAX

Wimax is a wireless technology that can deliver high speed broadband over long distances.

It is already big in the US with companies such as Sprint and Intel backing the technology.

Some areas of the developed world, such as Abuja in Nigeria, are also trialling the technology.

But, according to analyst Mike Roberts of

research firm Informa Media and Telecoms, it has never taken off in Europe. But, he said, that could all change in 2008.

"Next year could be the first year that we see some of the major deployments of Wimax in Europe," he said.

Milton Keynes has just launched what it claims if the first commercial Wimax service in the UK.

The aim, according to a spokesperson was to "make Milton Keynes the first WiMax-powered wireless internet city."

According to Mr Roberts others could follow suit particularly if a big player such as BT was "able to get its hands on the right spectrum".

MOBILE VOIP

VoIP is a technology that allows users to make cheap phone calls over the internet.

Although some firms such as Jajah and Truphone have offered VoIP on mobiles the technology is still relatively nascent.

However, 2008 could be the year the technology takes off.

Towards the end of 2007, network operator 3 launched a Skype phone that allows users to make calls using the service, already popular for making calls from PCs.

Handset-maker Nokia also offers four phones with the ability to use the technology.

"We plan to add VoIP enabled devices to the existing range," said Mark Squires of the firm.

But even with the backing of a heavyweight such as Nokia, not everyone is convinced that 2008 will be the year of mobile VoIP.

"Mobile VoIP is still at a very early stage," said Mike Roberts of analysts Informa Media and Telecoms. "It's very disruptive but it will be a slow burn, to my mind,"

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/1/hi/technology/7147804.stm

Published: 2008/01/01 13:48:58 GMT

Parents urged to read to children
Parents are being urged to make a New Year's resolution to spend more time reading to their children.

Schools Secretary Ed Balls is spearheading the initiative ahead of the National Year of Reading 2008, which officially starts in April.

Mr Balls said reading a child a bedtime story every night could have a huge impact on their development.

"Reading can bring fun to their lives, feed their imagination, and develop their curiosity about the world."

Too many children today are not reading for pleasure - and this is harming not just our children's reading skills, but also their imagination and general knowledge
Ed Balls, Children, Schools and Families Secretary

"As parents we need to make reading a part of everyday life for our children - whether that is reading stories to younger children or talking about books and magazines with older kids," he said.

A recent survey found the reading performance of children in England had fallen from third to 19th in the world. The Progress in International Reading Literacy Study, published in November, highlighted significant increases in the proportion of English 10-year-olds with the "least positive" attitudes to reading and who said they very seldom read stories or novels outside school.

Mr Balls said it could make "all the difference" if parents set aside 10 minutes a day before bedtime to read with their children.

Reading tips

"Too many children today are not reading for pleasure - and this is harming not just our children's reading skills, but also their imagination and general knowledge," he said. The National Year of Reading is being run by the National Literacy Trust, which has some ideas to encourage reading in different age groups.

These include:

For babies to 3-year-olds - make a scrapbook about your child full of pictures and words. Read the words with your child and get them to say what else should be in their story.

For three to five-year-olds - cut out pictures from catalogues or magazines of objects that all begin with the same letter, plus a few that do not. Write down the names of the objects and get your child to match the picture to the name.

For five to eight-year-olds. - find your family's top five reads. Ask everyone in your family to name their favourite reads - it could be a book, magazine, comic or newspaper. Involve grandparents, cousins etc. And see if the neighbours agree.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/1/hi/education/7163172.stm

Published: 2007/12/31 00:47:38 GMT

Internet Opens Elite Colleges to All

By JUSTIN POPE
AP Education Writer

Gilbert Strang is a quiet man with a rare talent: helping others understand linear algebra. He's written a half-dozen popular college textbooks, and for years a few hundred students at the elite Massachusetts Institute of Technology have been privileged to take his course.

Recently, with the growth of computer science, demand to understand linear algebra has surged. But so has the number of students Strang can teach.

An MIT initiative called "OpenCourseWare" makes virtually all the school's courses available online for free - lecture notes, readings, tests and often video lectures. Strang's Math 18.06 course is among the most popular, with visitors downloading his lectures more than 1.3 million times since June alone.

Strang's classroom is the world.

In his Istanbul dormitory, Kemal Burcak Kaplan, an undergraduate at Bogazici University, downloads Strang's lectures to try to boost his grade in a class there. Outside Calcutta, graduate student Sriram Chandrasekaran uses them to brush up on matrices for his engineering courses at the elite Indian Institute of Technology.

Many "students" are college teachers themselves, like Sheraz ali Khan at a small engineering institute in Peshawar, Pakistan, and Noorali Jiwaji, at the Open University of Tanzania. They use Strang and other MIT professors as guides in designing their own classes, and direct students to MIT's courses for help.

Others are closer to MIT's Cambridge, Mass., campus. Some are MIT students and alumni, while others have no connection at all - like Gus Whelan, a retiree on nearby Cape Cod, and Dustin Darcy, a 27-year-old video game programmer in Los Angeles who uses linear algebra regularly in his work.

"Rather than going through my old, dusty books," Darcy said, "I thought I might as well go through it from the top and see if I learn something new."

There has never been a more exciting time for the intellectually curious.

The world's top universities have come late to the world of online education, but they're arriving at last, creating an all-you-can eat online buffet of information.

And mostly, they are giving it away.

MIT's initiative is the largest, but the trend is spreading. More than 100 universities worldwide, including Johns Hopkins, Tufts and Notre Dame, have joined MIT in a consortium of schools promoting their own open courseware. You no longer need a Princeton ID to hear the prominent guests who speak regularly on campus, just an Internet connection. This month, Yale announced it would make material from seven popular courses available online, with 30 more to follow.

As with many technology trends, new services and platforms are driving change. Last spring marked the debut of "iTunes U," a section of Apple's popular music and video downloading service now publicly hosting free material from 28 colleges. Meanwhile, the University of California, Berkeley recently

announced it would be the first to make full course lectures available on YouTube. Berkeley was already posting lectures, but YouTube has dramatically expanded their reach.

If there isn't yet something for everyone, it's only a matter of time. On iTunes, popular recent downloads include a climate change panel at Stanford, lectures on existentialism by Cal-Berkeley professor Hubert Dreyfus, and a performance of Mozart's requiem by the Duke Chapel Choir. Berkeley's offerings include 48 classes, from "Engineering Thermodynamics" to "Human Emotion."

"It's almost as good as being there," said Whelan, the Massachusetts retiree, of the MIT classes he has sampled. "The only thing that's lacking is the pressure." He says he usually doesn't do the homework assignments, but adds: "Now that I'm not in school, I don't have to do that anymore."

YouTube, iTunes, OpenCourseWare - none are the full college experience. You can't raise your hand and ask a question. You can't get a letter of recommendation.

And most importantly, almost everywhere, you can't get credit or earn a degree.

That caveat, however, is what has made all this possible.

When the Internet emerged, experts predicted it would revolutionize higher education, cutting its tether to a college campus. Technology could help solve one of the fundamental challenges of the 21st century: providing a mass population with higher education at a time when a college degree was increasingly essential for economic success.

Today, the Internet has indeed transformed higher education. A multibillion-dollar industry, both for-profit and nonprofit, has sprung up offering online training and degrees. Figures from the Sloan Consortium, an online learning group, report about 3.5 million students are signed up for at least one online course - or about 20 percent of all students at degree-granting institutions.

But it hasn't been as clear what role - if any - elite universities would play in what experts call the "massification" of higher education. Their finances are based on prestige, which means turning students away, not enrolling more. How could they teach the masses without diminishing the value of their degree?

But MIT's 2001 debut of OpenCourseWare epitomized a key insight: Elite universities can separate their credential from their teaching - and give at least parts of their teaching away as a public service. They aren't diminishing their reputations at all. In fact, they are expanding their reach and reputation.

It turns out there is extraordinary demand for bits and pieces of the education places like MIT provide, even without the diploma.

OpenCourseWare's site gets more than 1 million hits per month, with translated versions getting 500,000 more. About 60 percent of users are outside the United States. About 15 percent are educators, and 30 percent students at other universities. About half have no university affiliation.

"I think the fundamental realization is that distance learning will solve the problem of access to certification, but there's a larger problem, which is access to information," says Steve Carson, director of external relations for the MIT initiative.

"If you're going to work as a public health professional, you need the certification," Carson says. "If you're working in a community" - say, in Africa - "you don't need the certification. You just need access to the information."

About 7,200 miles from Cambridge, the Polytechnic of Namibia in is the kind of place eager to learn from MIT. Though barely a decade old, the school in the young African nation's capital Windhoek, is

poised to play a key role in the country's development. It's one of 84 sites in Africa where MIT has shipped its course materials on hard drives for institutions to store locally on their own networks. With bandwidth costing about 1,000 times its price in the United States, patching into OpenCourseWare over the Internet would crash the school's fragile networks.

CIO Laurent Evrard says Polytechnic takes pride in standards on par with top global peers - he notes how U.S. exchange students get credit for work there - and says students like using OpenCourseWear to see how they stack up.

"Everybody here knows about MIT," he says, though it doesn't hurt that the school rector - its top official - is an alumnus.

On the opposite coast of southern Africa, Jiwaji says most of his Tanzanian students have never heard of MIT. Students use the courses "because it gives them a tool. They feel lost and they don't have good books," Jiwaji says. "They need a guide to help them."

His distance university - with 30,000 registered students - has OpenCourseWare available at centers around the capital of Dar es Salaam. There, it gets an impressive 600 hits per day, mostly in management classes.

Though it's found a wider audience, OpenCourseWare was originally intended for teachers. The idea wasn't just to show off MIT's geniuses but to share its innovative teaching methods. After examining an MIT course called "Machine Structures," Khan, the Pakistani professor, redesigned his lab assignments for a computer science class to get students more involved, asking them to design and build their own microprocessors.

"It really encourages the students to discover and try something new," he said. "Normally the stress here is on how things work, not on creating things of your own."

MIT's free offerings focus mostly on well-organized texts like syllabuses and readings, along with an expanding video lecture collection. Others, like Stanford and Bowdoin College in Maine, provide more polish, editing and features.

Berkeley, meanwhile, is focused less on bells and whistles than on ramping up its ability to roll out content with a system that automatically records and posts lectures. Berkeley's eight YouTube courses drew 1.5 million downloads in the first month, said Ben Hubbard, co-manager of the webcast.berkeley program, and the school is being inundated with requests to post more.

"That's why we're so focused on automation," he said. "Our motto is 'Fiat Lux' - 'let there be light.' We feel like this is a great way to let the light of Berkeley shine out on the world."

A big obstacle is cost. Professors are reluctant to participate unless staff are provided to help with logistics. A major expense is video camera operators, unless schools can persuade lecturers to stand still at the lectern. MIT estimates OpenCourseWear costs a hefty $20,000 per course. Money from the William and Flora Hewlett Foundation started the project, but from now on it will rely mostly on contributions from MIT's budget and endowment, and from visitor donations.

But there are direct benefits. Small schools like Bowdoin can use iTunes to show prospective students the richness of their offerings. MIT reports half its incoming students have already checked out OpenCourseWare.

Meanwhile, half of MIT alumni use OpenCourseWare, too. And alumni who stay connected with the intellectual life at their alma maters are more likely to donate.

MIT and other schools also emphasize the services benefit their paying customers - the students. On-

campus use at MIT and Berkeley spikes during exams, as students review lectures. Fears that technology would hurt class attendance have proved unfounded, at least at MIT, where 96 six percent of instructors reported no decline.

Will the free offerings of elite universities ever reduce demand for the full - and full-price - experience at places like MIT? Carson doubts it. Networking, late-night arguments over pizza, back-and-forth with professors - that's where the real value lies, and even MIT's technology may never catch up with that.

For teachers like Strang, his expanded reach is no more than a minor inconvenience - occasional e-mailed questions from "students." And it's a major reward.

"My life is in teaching," he says. "To have a chance do that with a world audience is just wonderful."

http://news.wired.com/dynamic/stories/M/MEGAUNIVERSITY_WORLD_CLASSROOM?SITE=WIRE&SECTION=HOME&TEMPLATE=DEFAULT&CTIME=2007-12-29-12-49-41

Weblogs rack up a decade of posts
The word "weblog" celebrates the 10th anniversary of it being coined on 17 December 1997.

The word was created by Jorn Barger to describe what he was doing with his pioneering Robot Wisdom web page.

The word was an abbreviation for the "logging" of interesting "web" sites that Mr Barger featured on his regularly updated journal.

A decade on and blog-watching firm Technorati reports it is tracking more than 70 million web logs.

Fast growth

While many people maintained regular journals or diaries before the word was coined, 1997 marked the point when they started to become a particular online pursuit.

For some time after Mr Barger coined the term, the numbers of people who could be said to be actually writing one was small.

Official numbers are hard to find but some estimate that the size of the blogosphere in late 1998 encompassed only 23 sites.

In 1999 the phenomenon took off as easy to use tools started to appear which made it much easier to write and maintain these sorts of websites. Also in 1999 the word "blog" was coined as a shortened form of the original term.

Blogs arose to partly solve the problem of finding interesting sites on the rapidly expanding world wide web.

Many blogs, then as now, specialised in one subject and kept those interested up to date with new sites or up-to-date information about developments or breakthroughs in that field.

Many bloggers attach comments to the web links they post and many become well-known for their particular view of events or way with words.

Technorati, which keeps an eye on the blogosphere, estimates that there are now 120,000 new blogs being created every day. Posts are being added to blogs at a rate of 17 per second - a total of 1.5 million per day, says the firm.

Not all blogs are now about what people find online. Many people, artists, industry figures and professionals, use them to keep people up to date with their movements or thoughts.

The rising popularity of social network sites such as MySpace, Facebook and Bebo has arguably grown out of the blogging phenomenon.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/technology/7147728.stm

Published: 2007/12/17 13:20:54 GMT

Lung cancer 'link to lack of sun'
Lack of sunlight may increase the risk of lung cancer, a study suggests.

Researchers found lung cancer rates were highest in countries furthest from the equator, where exposure to sunlight is lowest.

It is thought vitamin D - generated by exposure to sunlight - can halt tumour growth by promoting the factors responsible for cell death in the body.

The University of California, San Diego study appears in the Journal of Epidemiology and Community Health.

Experts warn that exposure to sunlight is still the major cause of skin cancer - a disease which is on the increase around the world.

Lung cancer kills more than one million people every year around the globe.

The researchers examined data from 111 countries across several continents.

Cell glue

They found smoking was most strongly associated with lung cancer rates - accounting for up to 85% of all cases.

But exposure to sunlight, especially UVB light, the principal source of vitamin D for the body, also seemed to have an impact.

We know that vitamin D is essential for good health, but the time in the sun needed to get enough vitamin D is much less than the time it takes to tan or burn
Dr Kat Arney
Cancer Research UK

The amount of UVB light increases with proximity to the equator. The analysis showed lung cancer rates were highest in those countries furthest away from the equator and lowest in those nearest.

Higher cloud cover and airborne aerosol levels were also associated with higher rates of the disease.

Lead researcher Dr Cedric Garland said lung cancer, in common with many other forms of the disease, usually began in the epithelial cells that line the surface of the tissues in the organ.

Cancer results when cells start to divide in an uncontrolled fashion.

He said vitamin D stimulated the release of chemicals which, in combination with calcium, formed a glue-like substance which bind these cells tightly together, and put a brake on their division.

There was also evidence that vitamin D may also slow the progress of cancer once it develops.

Skin cancer risk

Dr Garland also stressed that moderate exposure to sunlight did not significantly raise the risk of the most serious form of skin cancer, melanoma.

He said the only form of skin cancer that was related to ordinary, moderate exposure to sunlight was squamous cell carcinoma, which killed far fewer people than lung cancer, and other forms of the disease which might also be prevented by moderate exposure to the sun.

Moderate exposure would be five to 15 minutes per day within two hours of midday, on mainly clear days, when season and temperature allow, with 40% of skin area exposed.

A hat with a wide brim should be worn when in the sun for more than a few minutes, but sunscreen should be skipped during this period, as it prevents vitamin D synthesis.

Dr Kat Arney, of the charity Cancer Research UK, stressed that smoking was by far the biggest cause of lung cancer.

She said: "There is growing evidence that vitamin D could help to reduce the risk of some cancers, such as bowel cancer, but the link between vitamin D and lung cancer is still unclear.

"In this case, the researchers have not actually measured people's vitamin D levels, and there may be several other factors that need to be taken into account.

"These include differences in sun protection behaviour in various countries, as well as differences in the way that cancer cases are registered.

"We know that vitamin D is essential for good health, but the time in the sun needed to get enough vitamin D is much less than the time it takes to tan or burn."

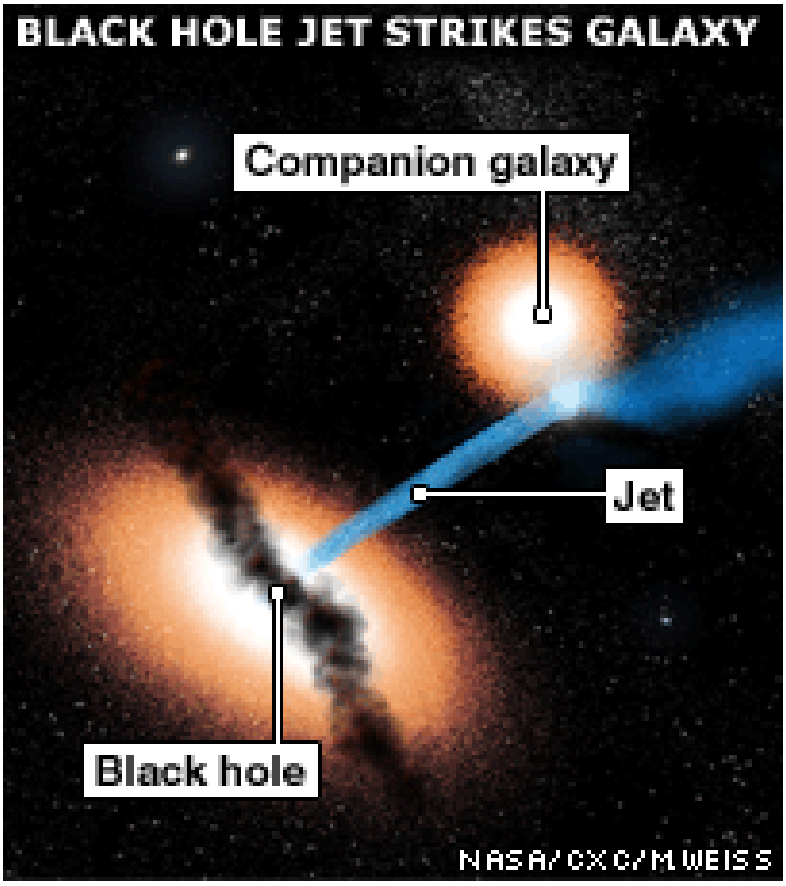
Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7145080.stm

Published: 2007/12/18 00:05:15 GMT

Black hole 'bully' blasts galaxy

By Paul Rincon
Science reporter, BBC News

A powerful jet of particles from a "supermassive" black hole has been seen blasting a nearby galaxy, according to the US space agency (Nasa).



Galaxies have been seen colliding before, but this form of galactic violence is rarely witnessed by astronomers.

The jet could have a profound effect on any planets in the jet's path and could also trigger a burst of star formation.

The findings are to be published in the Astrophysical Journal.

They were obtained using Nasa's space-based Chandra X-ray Observatory, its Hubble Space Telescope, and Spitzer Space Telescope, as well as the Very Large Array (VLA) and Merlin radio telescopes on the ground.

It is like a black hole bully, punching the nose of a passing galaxy
Neil Tyson, Hayden Planetarium

The event took place in a system called 3C321, which lies 1.4 billion light-years from Earth. It contains two galaxies in orbit around one another which are in the process of merging.

Most, if not all, galaxies - including our own Milky Way - are thought to host supermassive black holes at their galactic centres. A handful of these galaxies eject powerful jets from the vicinities of their black holes, and are known as radio galaxies - because jets are very "visible" at radio wavelengths.

The larger of the two galaxies in 3C321 - dubbed the "death star galaxy" by the astronomers - has a jet emanating from the vicinity of the black hole at its centre. The unfortunate smaller galaxy has apparently swung into the jet's line of fire.

Destructive force

A bright spot in some images shows where the jet has slammed into the side of the companion galaxy, dissipating some of its energy. After striking it, the jet has become disrupted and deflected.

Jets can race out at close to the speed of light and can travel vast distances. The jet in 3C321 was about 1,000 light-years across and might have travelled one or two million light-years from its origin.

These jets consist of high energy particles and magnetic fields. They produce enormous amounts of radiation, especially in the form of high-energy X-rays and gamma-rays.

"This jet could be causing all sorts of problems for the smaller galaxy it is pummeling," said Dan Evans, lead author from the Harvard-Smithsonian Center for Astrophysics in Cambridge, US.

The combined effects of this radiation and particles travelling at almost the speed of light could have disastrous consequences for the atmospheres of any Earth-like planets lying in the path of the jet.

Although we call it a death star galaxy, it might eventually be a source of new life in the more distant galaxy
Martin Hardcastle, University of Hertfordshire

For example, protective layers of ozone in the planet's upper atmosphere could be destroyed, which could result in the mass extinction of any life that had evolved on the planet.

Neil Tyson, director of the Hayden Planetarium in New York commented: "Black holes are famous for wreaking havoc on their environment. This particular black hole is disrupting its local region by dining on matter that wanders too close - which is the source of the energy for this jet.

"It also fires a jet out of the galaxy. So it is like a black hole bully, punching the nose of a passing galaxy."

Basic properties

"There are still basic unanswered questions about how these jets work," said co-author Martin Hardcastle of the University of Hertfordshire, UK.

"We don't know how exactly they're generated close to the black hole, what they're made of, how fast they're going, or how they evolve with time. So an object like 3C321 can act as an experiment which can give us an insight into the inner working of the jet."

The effect of the jet on the companion galaxy is likely to be substantial, because the galaxies in 3C321 are extremely close to one another. At only about 20,000 light years apart, these galaxies lie approximately the same distance as the Earth is from the centre of the Milky Way.

It is possible that it would not all be bad news for the galaxy struck by the jet. The massive influx of energy and radiation from the jet may induce the formation of large numbers of stars and planets once its initial wake of destruction is complete.

"Although we call it a death star galaxy, in the end it might be a source of new life in the more distant galaxy," said Dr Hardcastle.

Features seen in images from the VLA and Chandra indicate that the jet started hitting the smaller galaxy about one million years ago. This is a blink of the eye in the lifetime of 3C321, which marks it out as an important opportunity to study a rare astronomical phenomenon, say the astronomers.

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Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/science/nature/7148671.stm

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Workplace Opportunities And Stresses Are Both Increasing

ScienceDaily (Dec. 16, 2007) — Teamworking and other modern employment practices can put as much strain on a woman's family relationships as working an extra 120 hours a year, an extensive study of the British workforce funded by the Economic and Social Research Council suggests.

The research finds that while British employers have maintained long-term career relationships with employees in spite of competitive market pressures, they have devised ways of extracting more effort and higher performance. These practices include team-based forms of work organization, individual performance-related pay, and policies that emphasize the development of individual potential.

Such human resource management practices are thought to be good for staff morale as well as an essential ingredient of successful modern business performance. Yet, finds the research, the pressure to perform which they generate has a knock-on effect on employees' families.

Women's family relationships are more adversely affected by such employment practices than men's. In addition, both women and men are more likely to become anxious about childcare arrangements when placed under pressure by workplace practices. Women are also less likely to get help at home from male partners if the men have jobs in which they face the pressures of modern human resource management.

A significant new source of stress in the modern workplace is ICT surveillance. The research shows that more than half -- 52 per cent -- of all British employees report that a computerised system keeps a log or record of their work. This picture is confirmed by employers, with managements of one in five workplaces reporting that all employees are now covered by computer-based monitoring systems.

The spread of ICT surveillance has led to a sharp increase in work strain, reflected by feelings of exhaustion, anxiety and work-related worry. There is an overall 7.5 per cent rise in strain among employees whose work is checked by ICT systems compared with those in similar jobs which are controlled by more traditional methods. Evidence of work strain is particularly strong among administrative and white-collar staff in places such as call centres, where it rises by 10 per cent among employees whose work is continually checked by ICT systems.

"Computers and IT systems are bringing surveillance to most workplaces," comments Michael White, who co-directed the research study. "Now for the first time we can see how this development is damaging employees' well-being."

The research, funded as part of the ESRC's Future of Work research programme, covers the period 1984-2004 and shows significant changes in the prospects and job conditions of British employees: the results are published this week in a book "Market, Class, and Employment" co-authored by Patrick McGovern, Stephen Hill, Colin Mills and Michael White.

On the basis of US experience, it had been widely supposed that the highly competitive market environment in which most businesses and much of the public sector now operate would lead to moves towards hire and fire practices, temporary jobs and a decline in training and the concept of careers. But the research finds that, although British employers use redundancy as a normal way of adjusting staff numbers, in general they have not abandoned the retention and long-term development of employees.

The proportion of employees in permanent employment remains above 90 per cent and rose during the 1990s. Fixed-term or casual employment grew in the 1980s but declined during the 1990s. Increased use by employers of communication techniques, employee participation, team organization, training and development, and rewards for performance all point to efforts to maintain a long-term workforce.

A decline in trade union recognition and membership, say the researchers, could expose employees to unfair treatment. But this has in part been balanced by a growth in alternative forms of employee engagement such as meetings with management and consultation with individuals over work changes.

By 2000, about one in three employees was taking part in individual bargaining over pay. This is more likely to occur in workplaces where there are no unions and, note the researchers, it is leading to increasing inequality. Managers and professionals are more likely than other employees to strike personal pay bargains. Women are less likely than men to bargain over pay when they are recruited. They are also less likely to be represented by a union, so the ability of women to challenge the gender gap in pay is limited on both sides.

The research concludes that class differences in job rewards have increased since the early 1990s. Earnings inequality, for instance, increased during the 1992-2000 period. This reflected large real increases in the average earnings of higher managers and lower but still substantial gains for other managers, while the earnings of those in semi-routine and routine occupations remained static or declined.

The research examined a wide range of fringe benefits including occupational pensions, sickness pay and paid holidays. There was a marked class gradient in favour of higher managerial and professional groups across all these. Moreover, the gap was tending to increase rather than decrease over time. Job desirability -- reflecting not only pay but also non-financial factors that are valued by employees, such as flexible hours and autonomy in planning tasks -- also differed greatly by class.

It is likely, conclude the researchers, that inequality in pay and benefits will continue to grow because of other developments identified by the research. Managerial and professional staff are more able to benefit from the expanding opportunities for personal bargaining over pay increases. They are also the group most involved in pay-for-performance deals which bring opportunities for substantial bonuses or salary increases.

Summing up the research lead author Patrick McGovern says: "The major story about work in Britain is not that it has become more precarious or fragmented, rather it has become more demanding while the returns have become more unequal. The major winners in the so-called new economy are professional and managerial employees who have actually moved further ahead of the rest of the labour force."

The results are reported in "Market, Class, and Employment" published by Oxford University Press. The authors are Patrick McGovern, Senior Lecturer in Sociology at the London School of Economics and Political Science; Stephen Hill, Principal of Royal Holloway, University of London, and Professor of Management; Colin Mills, University Lecturer in Sociology and Fellow of Nuffield College, University of Oxford and Michael White, Emeritus Fellow at the Policy Studies Institute, University of Westminster.

The research was funded by the Economic and Social Research Council. It included a specially commissioned national survey of employees carried out in 2000-01, a survey of employers carried out in 2002, and a review of information from other national surveys between 1984-2004.

Adapted from materials provided by Economic & Social Research Council.

http://www.sciencedaily.com/releases/2007/12/071214094036.htm

Ape To Human: Walking Upright May Have Protected Heavy Human Babies

For safety, all nonhuman primates carry their young clinging to their fur from birth, and species survival depends on it. (Credit: iStockphoto/Graeme Purdy)

ScienceDaily (Dec. 17, 2007) — The transition from apes to humans may have been partially triggered by the need to stand on two legs, in order to safely carry heavier babies. This theory of species evolution presented by Lia Amaral from the University of São Paulo in Brazil has just been published online in Springer's journal, Naturwissenschaften.

For safety, all nonhuman primates carry their young clinging to their fur from birth, and species survival depends on it. The carrying pattern changes as the infant grows. Newborns are carried clinging to their mother's stomach, often with additional support. Months later, infants are carried over the adult body usually on the mother's back, and this carrying pattern lasts for years in apes. However, this necessity to carry infants safely imposes limits on the weight of the infants.

Through a detailed mechanical analysis of how different types of apes - gibbons, orangutans and gorillas - carry their young, looking at the properties of ape hair, infant grip, adult hair density and carrying position, Amaral demonstrates a relationship between infant weight, hair friction and body angle which ensures ape infants are carried safely.

Amaral also shows how the usual pattern of primate carrying of heavy infants is incompatible with bipedalism.African apes have to persist with knuckle-walking on all fours, or 'quadruped' position, in order to stop their young from slipping off their backs.

The author goes on to suggest that the fall in body hair in primates could have brought on bipedality as a necessary consequence, through the strong selective pressure of safe infant carrying, as infants were no longer able to cling to their mother's body hairs. In the author's opinion, safe carrying of heavy infants justified the emergence of the biped form of movement. Although an adult gorilla is much heavier than an adult human, its offspring is only half the weight of a human baby.

Amaral concludes that this evolution to bipedality has important consequences for the female of the species. Indeed, it frees the arms and hands of males and juveniles, but females have their arms and

hands occupied with their young. This restriction of movement placed limits on food gathering for biped females carrying their infants, and may have been at the origin of group cooperation.

Reference: Amaral LQ (2007). Mechanical analysis of infant carrying in hominoids. Naturwissenschaften (DOI 10.1007/s00114-007-0325-0).

Adapted from materials provided by Springer.

http://www.sciencedaily.com/releases/2007/12/071212201347.htm

Skin Color Evolution In Fish And Humans Determined By Same Genetic Machinery

Ocean sticklebacks are dark colored fish that often migrate into new environments. Multiple stickleback populations have evolved lighter gill and skin colors following colonization of new lakes and streams at the end of the last ice age

ScienceDaily (Dec. 17, 2007) — When humans began to migrate out of Africa about 100,000 years ago, their skin color gradually changed to adapt to their new environments. And when the last Ice Age ended about 10,000 years ago, marine ancestors of ocean-dwelling stickleback fish experienced dramatic changes in skin coloring as they colonized newly formed lakes and streams. New research shows that despite the vast evolutionary gulf between humans and the three-spined stickleback fish, the two species have adopted a common genetic strategy to acquire the skin pigmentation that would help each species thrive in their new environments.

The researchers, led by Howard Hughes Medical Institute investigator David Kingsley, published their findings in the December 14, 2007, issue of the journal Cell. Kingsley and first author Craig Miller are at the Stanford University School of Medicine, and other co-authors are from the University of Porto in Portugal, the University of British Columbia, the University of Chicago, and the Pennsylvania State University Further studies of stickleback, they say, may reveal other malleable pieces of genetic machinery both fish and humans have used for adaptation.

The stickleback has become a premier model organism for studying evolution because of its extraordinary evolutionary history, said Kingsley. "Sticklebacks have undergone one of the most recent and dramatic evolutionary radiations on earth," he said. When the last Ice Age ended, giant glaciers melted and created thousands of lakes and streams in North America, Europe, and Asia. These waters were colonized by the stickleback's marine ancestors, which subsequently adapted to life in freshwater. "This created a multitude of little evolutionary experiments, in which these isolated populations of fish adapted to the new food sources, predators, water color, and water temperature that they found in these new environments," Kingsley explained.

Among those adaptations were new colorations that helped the fish camouflage themselves, distinguish species, and attract mates in their new environments. Until now, however, scientists had not understood what genetic factors drove the changes in skin pigmentation.

Human populations have also undergone pigmentation changes as they have adapted to life in new environments. The ecological reasons for those changes may be quite different from the forces driving the evolution of pigmentation in sticklebacks, said Kingsley. As human populations migrated out of Africa into northern climates, the need for darker pigmentation necessary to protect against the intense tropical sun diminished. With skin that was more transparent to sunlight, humans were better able to produce sufficient vitamin D in their new climate.

To begin to understand the genetic basis of skin pigmentation changes in fish, Kingsley and his colleagues crossed stickleback species that had different pigmentation patterns and used genetic markers and the recently completed sequence map of the fish's genome to search for the mechanism regulating stickleback pigmentation. They searched for chromosome segments in the offspring that were always associated with inheritance of dark or light gills and skin. Through detailed mapping of one such segment, Kingsley and his colleagues found that a gene called Kitlg (short for "Kit ligand") was associated with pigmentation inheritance. Kitlg was an excellent candidate for regulating pigmentation because mutant forms of the corresponding gene in mice produce changes in fur color, said Kingsley.

The Kitlg gene is involved in a variety of biological processes, including germ cell development, pigment cell development, and hematopoiesis. Light-colored fish have regulatory mutations that reduce expression of the Kitlg gene in gills and skin, but that do not reduce the gene's function in other tissues. "By altering expression of this gene in one particular place in the body, the fish can fine tune the level of expression of that factor in some tissues but not others," said Kingsley. "That lets evolution produce a big local effect on a trait like color while preserving the other functions of the gene."

Humans also have a Kitlg gene, and Kingsley and his colleagues wondered if it played a role in regulating the pigmentation of human skin. One clue they had came from previous research by other groups that had revealed that the human Kitlg gene has undergone different changes among different human populations, suggesting that it is evolutionarily significant.

Kingsley and his colleagues tested whether the different human versions of the Kitlg gene are associated with changes in skin color. Humans with two copies of the African form of the Kitlg gene had darker skin color than people with one or two copies of the new Kitlg variant that is common in Europe and Asia.

Knowing that people had also adapted lighter skin when they migrated north, Kingsley wondered whether mutations in the same gene accounted for light pigmentation in people living in northern climes. In the north, where less sunlight reaches the ground, lighter coloring helps people absorb enough sunlight to produce vitamin D.

Kingsley and his colleagues collected DNA from people with a variety of skin colors to look for alterations in the *Kit ligand* gene. Sure enough, people with lighter skin had an altered form of the gene. He said this gene isn't alone in controlling a person's skin color, but it does seem to account for about 20 percent of the differences in pigmentation between people of African and northern European descent.

"It is the same genetic mechanism between organisms that are very different from each other," Kingsley said. This gene is known to make a protein that plays a role in maintaining the melanocyte skin cells that control pigmentation.

In terms of how evolution progresses, this gene would be a large ladle of dye that helps set the paint color apart from the original. Additional genetic changes account for the exact color of each person's skin.

"Although multiple chromosomal regions contribute to the complex trait of pigmentation in both fish and humans, we have identified one gene that plays a central role in color changes in both species," said Kingsley.

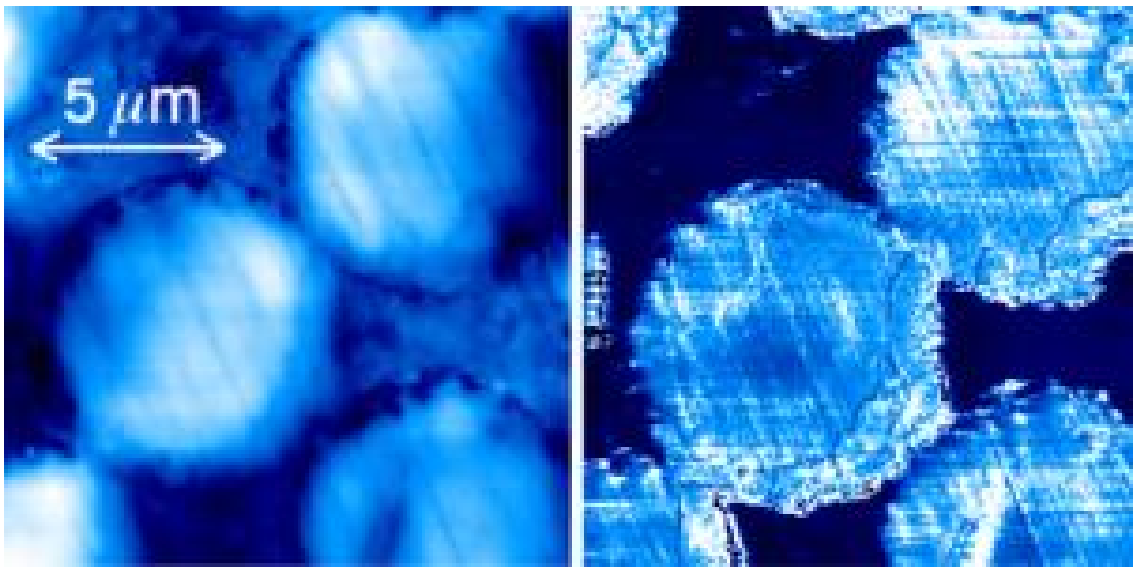
"Since fish and humans look so different, people are often surprised that common mechanisms may extend across both organisms," he said. "But there are real parallels between the evolutionary history of sticklebacks and humans. Sticklebacks migrated out of the ocean into new environments about ten thousand years ago. And they breed about once every one or two years, giving them five thousand to ten thousand generations to adapt to new environments."

Although modern humans arose in Africa, they are thought to have migrated out of Africa in the last 100,000 years. "Humans breed about once every 20 years, giving them about 5,000 generations or so to emerge from an ancestral environment and colonize and adapt to new environments around the world," Kingsley added. "So despite the difference in total years, the underlying process is actually quite similar. Whether it be fish or humans, there were small migrating populations encountering new environments and evolving significant changes in some traits in a relatively short time. And the genetic mechanisms that can produce these changes may be so constrained that evolution will tend to use the same sorts of genes in different organisms."

Kingsley and his colleagues are now exploring the genetic basis of other evolved traits in the stickleback that could find a parallel in humans. "And given the degree to which evolutionary mechanisms appear to be shared between populations and organisms, we're optimistic about finding the particular genes that underlie other recent adaptations to changing environments in both fish and humans," he said.

Adapted from materials provided by Howard Hughes Medical Institute.

New Imaging System Maps Nanomechanical Properties



An atomic force microscope normally reveals the topography of a composite material (l.) NIST's new apparatus adds software and electronics to map nanomechanical properties (r.) The NIST system reveals that the glass fibers are stiffer than the surrounding polymer matrix but sometimes soften at their cores. (Credit: DC Hurley/NIST) ScienceDaily (Dec. 17, 2007) — The National Institute of Standards and Technology (NIST) has developed an imaging system that quickly maps the mechanical properties of materials--how stiff or stretchy they are, for example--at scales on the order of billionths of a meter. The new tool can be a cost-effective way to design and characterize mixed nanoscale materials such as composites or thin-film structures.

The NIST nanomechanical mapper uses custom software and electronics to process data acquired by a conventional atomic force microscope (AFM), transforming the microscope's normal topographical maps of surfaces into precise two-dimensional representations of mechanical properties near the surface. The images enable scientists to see variations in elasticity, adhesion or friction, which may vary in different materials even after they are mixed together. The NIST system, described fully for the first time in a new paper,* can make an image in minutes whereas competing systems might take an entire day. The images are based on measurements and interpretations of changes in frequency as a vibrating AFM tip scans a surface. Such measurements have commonly been made at stationary positions, but until now 2D imaging at many points across a sample has been too slow to be practical. The NIST DSP-RTS system (for digital signal processor-based resonance tracking system) has the special feature of locking onto and tracking changes in frequency as the tip moves over a surface. Mechanical properties of a sample are deduced from calculations based on measurements of the vibrational frequencies of the AFM tip in the air and changes in frequency when the tip contacts the material surface.

NIST materials researchers have used the system to map elastic properties of thin films with finer spatial resolution than is possible with other tools. The DSP-RTS can produce a 256 × 256 pixel image with micrometer-scale dimensions in 20 to 25 minutes. The new system also is modular and offers greater flexibility than competing approaches. Adding capability to map additional materials properties can be as simple as updating the software.

* A.B. Kos and D.C. Hurley. Nanomechanical mapping with resonance tracking scanned probe microscope. Measurement Science and Technology 19 (2008) 015504.

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

http://www.sciencedaily.com/releases/2007/12/071212201229.htm

Software Help Mars Rovers Find Winter Havens

ScienceDaily (Dec. 17, 2007) — New software is helping NASA find safe places for the Spirit rover to ride out future Martian winters -- and also plan where Spirit and its companion rover, Opportunity, will explore in the future.

The steep Martian mesa dubbed “Von Braun” would be a safe haven, the software and data analysis determined -- but the path that Spirit would have to follow to get there is a little too risky to travel with winter on the way, explained Ron Li, professor of civil and environmental engineering and geodetic science at Ohio State University.

That's one reason why Spirit is currently headed to the northern rim of a depression called “Home Plate” for the winter -- though, as of early December, it was rolling through loose soil that was hampering its progress.

Li and his research team are developing several software programs to help the rovers navigate. The latest program used satellite images, as well as rover images, to determine that Von Braun's more than 25-degree incline is steep enough for the rover's solar panels to gather critical energy from the low winter sun. But it also determined that there are no safe winter sites on the route to Von Braun where the rover could hide out in a pinch.

Should Spirit set out on the 400-foot journey to Von Braun and not be able to reach it, there are not enough bail out spots along the route where it could take refuge, the software found. Even in ideal driving conditions, the trip would take a number of days. And with the winter approaching, Spirit might need to stop at steep slopes where it could better angle its solar panels to gather light.

“Once we identified Von Braun as a good winter site, our job was to help the rover find a safe path there from Home Plate, and identify a few ‘bail out' spots in case anything happened in between,” Li said. “But we couldn't find any bail out spots with a steep enough slope.”

The Ohio State software uses images from the High Resolution Imaging Science Experiment (HiRISE) camera onboard the Mars Reconnaissance Orbiter. It compares those images to panoramas taken by the rovers on the ground to precisely map features on the surface.

Li described the software December 12, 2007, in a poster session at the American Geophysical Union meeting in San Francisco .

Previously, his team used similar software to map Opportunity's path as it descended into Victoria Crater. The new software does more, by helping scientists identify Martian surface features that the rovers can investigate.

“HiRISE gives us 0.3-meter (one foot) resolution on the ground, so we can combine those orbital images with ground images to identify rocks from the orbiter and the ground,” Li said.

The key, he said, is to combine panoramas taken by the rovers to give a wide view of the terrain. The rover takes one panorama, then travels a distance from several feet to 300 feet, depending on the terrain and tasks it's performing at the time.

The software combines two or more rover panoramas in a way analogous to how our brain combines the images from our left eye and right eye to give us a stereo view of our surroundings. Only the software is able to calculate where features on the landscape are located, and match them to features on HiRISE images at high accuracy.

One of the new functions of the software is this so-called wide baseline stereo. “It's as if the rover had a baseline view that was bigger than the rover itself,” Li said.

The Mars Exploration Rover team expects it may find some very interesting geologic features on Von Braun, so Spirit may travel there next year -- after winter's danger has passed.

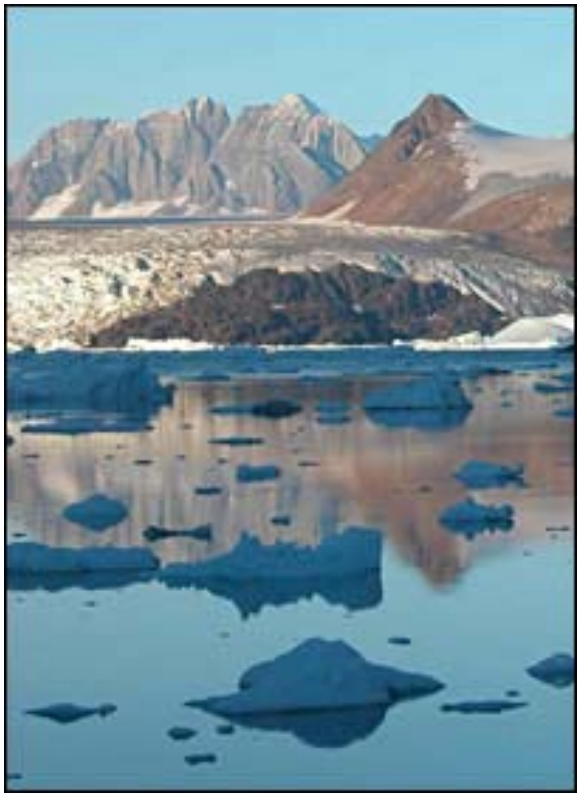
This continuing research is funded by NASA. The Ohio State scientists are working to further develop the software so that future rovers can use it to navigate automatically.

In the meantime, they have joined the European Space Agency mission ExoMars, which will launch a Mars mission with a rover of its own in 2013. Li will be working on the science team for the PanCam instrument, which will let the ExoMars rover take 3D panoramas of the red planet.

Adapted from materials provided by Ohio State University.

http://www.sciencedaily.com/releases/2007/12/071211233023.htm

Rising seas 'to beat predictions'
The world's sea levels could rise twice as high this century as UN climate scientists have previously predicted, according to a study.



The Intergovernmental Panel on Climate Change proposes a maximum sea level rise of 81cm (32in) this century.

But in the journal Nature Geoscience, researchers say the true maximum could be about twice that: 163cm (64in).

They looked at what happened more than 100,000 years ago - the last time Earth was this warm.

The results join other studies showing that current sea level projections may be very conservative.

Sea level rise is a key effect of global climate change. There are two major contributory effects: expansion of sea water as the oceans warm, and the melting of ice over land.

In the latest study, researchers came up with their estimates by looking at the so-called interglacial period, some 124,000 to 119,000 years ago, when Earth's climate was warmer than it is now due to a different configuration of the planet's orbit around the Sun.

That was the last time sea levels reached up to 6m (20ft) above where they are now, fuelled by the melting of ice sheets that covered Greenland and Antarctica.

'Robust' work

The researchers say their study is the first robust documentation of how quickly sea levels rose to that level.

"Until now, there have been no data that sufficiently constrain the full rate of past sea level rises above the present level," lead author Eelco Rohling, of Britain's National Oceanography Centre in Southampton, said in a statement.

Rohling and his colleagues found an average sea level rise of 1.6m (64in) each century during the interglacial period.

Back then, Greenland was 3C to 5C (5.4F to 9F) warmer than now - which is similar to the warming period expected in the next 50 to 100 years, Dr Rohling said.

Current models of ice sheet activity do not predict rates of change this large. However, they also do not include many of the dynamic processes already being observed by glaciologists, the researchers said.

"The average rise of 1.6m per century that we find is roughly twice as high as the maximum estimates in the IPCC Fourth Assessment Report, and so offers the first potential constraint on the dynamic ice sheet component that was not included in the headline IPCC values," explained Dr Rohling.

Last year, a separate study found sea level rise projections could be under-estimating the impact of human-induced climate change on the world's oceans.

Stefan Rahmstorf, from the Potsdam Institute for Climate Impact Research, Germany, and colleagues plotted global mean surface temperatures against sea level rise, and found that levels could rise by 59% more than current forecasts.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/science/nature/7148137.stm

Published: 2007/12/17 15:42:09 GMT

Approval for once-a-day HIV pill

By Jane Dreaper
Health correspondent, BBC News

The first HIV medication which involves taking just one pill a day has been approved by the European authorities.

The go-ahead for Atripla represents what some experts say is a revolution in treatment for the virus that causes Aids, although it is not a cure.

People using the earliest HIV drugs in 1996 had to take up to 30 pills on an empty stomach at different times.

The decision means Atripla can be used in the UK but local health bodies must decide whether the NHS will provide it.

This is a big advance for patients - it almost normalises HIV
Dr Simon Portsmouth
HIV consultant

Taking Atripla does not reduce the risk of transmitting the virus.

The drugs regime has already reduced to just several pills a day for people newly diagnosed with HIV.

Rival companies

But it is highly symbolic that managing the condition will, for some patients, now become almost as simple as taking a daily statin tablet.

Atripla combines three existing drugs (efavirenz, tenofovir and emtricitabine). It has come into existence as a result of collaboration between three rival drug companies - Gilead Sciences, Bristol-Myers Squibb and Merck.

The single pill was licensed in the US in July last year - and is now given to half of all patients who are newly diagnosed there.

Approval by the European Commission means Atripla will soon be available to people with HIV in Germany, Austria and the UK.

In the UK, it will be available through the NHS, but this will be at the discretion of primary care trusts (PCTs)and GPs.

Dr Simon Portsmouth, a leading HIV consultant, said: "This is a big advance for patients. It almost normalises HIV.

"They can just take this pill before they go to bed at night, and it doesn't take over their whole life."

Dr Portsmouth, based at St Mary's Hospital in west London, added: "Because we've been using the components of Atripla for some time, we know what side effects to expect.

"Probably more than half of patients initially will get some dizziness, or abnormal dreams, or sleep disturbance. But generally this medicine is pretty well-tolerated.

"And we'll spend lots of time with each person, explaining the drug and why they need to take it carefully all the time."

Not straightforward

Gilead senior vice-president Paul Carter said: "There has been a huge amount of manufacturing work to bring this drug to the market.

"Trying to get three drugs into one pill isn't a straightforward procedure.

"But nevertheless we anticipate that across Europe, Atripla will be available at a price which is in parity with the sum of its component parts."

Merck, meanwhile, is taking a lead in trying to make the pill available to people with HIV in Africa, at a lower price.

Mr Carter pointed out that drug development in this field is a never-ending task.

"We see plenty of room for better treatments in the years ahead," he said.

"It's a key issue that HIV builds up resistance, and therefore the industry needs a continual pipeline of new drugs."

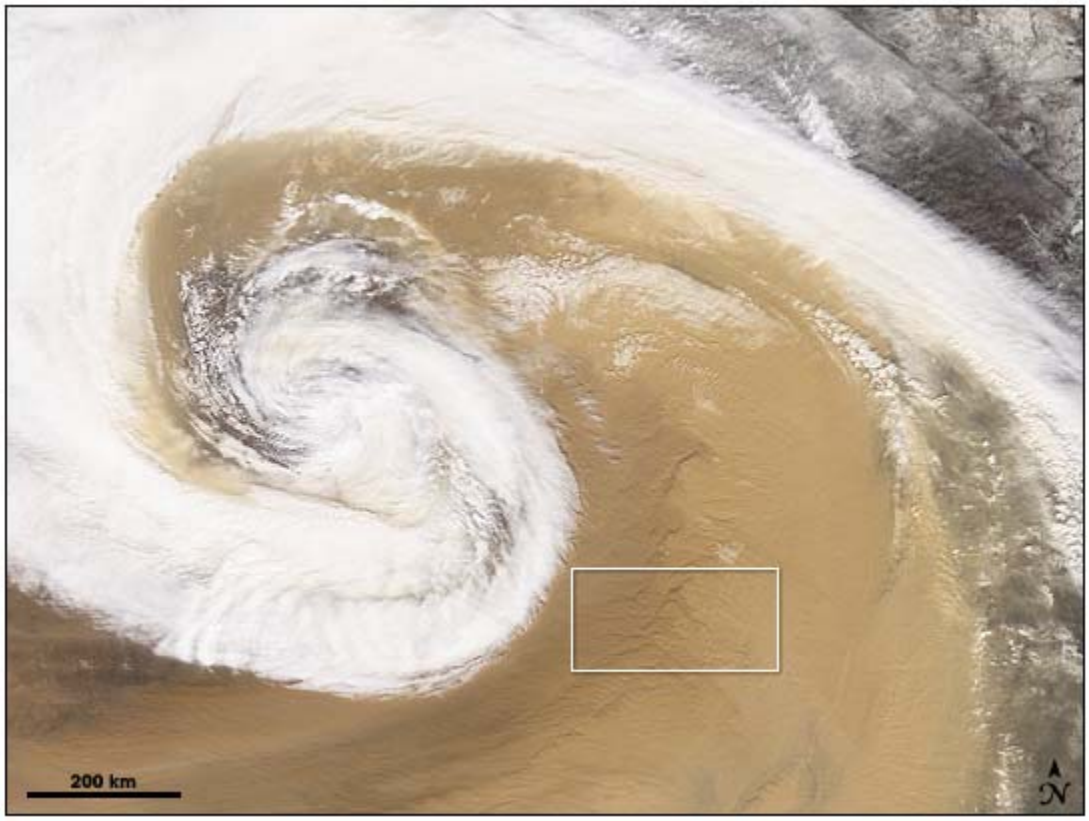
Lisa Power, of the HIV charity Terrence Higgins Trust, said: "Most people have trouble with a week's worth of antibiotics - imagine taking them for life.

"So combining an already widely used combination of treatments into one pill, once a day will help many people with HIV maintain a normal life at work and home."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7140565.stm

Published: 2007/12/17 19:22:57 GMT

A Perfect (Dust) Storm



Scientists who study dust storms have long known that Saharan dust can travel all the way across the Atlantic to the Americas. Asian dust, however, must travel much farther to reach the same destination. In April 2001, researchers watched with surprise as dust from an Asian storm crossed the Pacific reaching as far east as the Great Lakes and even Maryland.

An eye-witness to the dust storm, who visited Jilin Province in northeastern China, reported that around 7 a.m. local time on April 7, 2001, the dust blocked enough sunlight to leave the skies as dark as midnight, and reduced visibility to roughly 20 meters (65 feet). The Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Terra satellite captured these images of the dust storm as it swirled over China the same day. The bottom image shows a close-up view of the area outlined in white in the top image.

In early April of 2001 a strong temperate cyclone spun counter-clockwise over China, pushing a wall of dust as it moved. The deep tan dust is not only thick enough to completely hide much of the land surface below, but it almost forms its own topography, with ridges of dust rising up below the clouds, visible in the bottom image.

Besides tracking the dust's movement, the U.S. Navy Aerosol Analysis and Prediction System (NAAPS) modeled where it would travel and predicted its trans-Pacific journey. To produce the models, NAAPS relied partly on data from NASA's Sea-viewing Wide Field-of-view Sensor (SeaWiFS) sensor.

The 2001 dust storm that traveled across the Pacific to North America was not likely to be the last. A 2005 paper by Jianguo Liu and Jared Diamond described the increased incidence of dust storms in China. From AD 300 to 1949, China experienced a dust storm on average every 31 years. After 1990, a dust storm occurred almost every year. The authors attributed the increase in such storms partly to deforestation and changes in water usage.

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NASA image by Jesse Allen and Robert Simmon, based on data from the MODIS science team.

http://earthobservatory.nasa.gov/Newsroom/NewImages/images.php3?img_id=17874

2006 Census: Immigration, citizenship, language, mobility and migration

Statistics Canada today releases detailed analyses of data from the 2006 Census on immigration and citizenship, as well as the composition of Canada's language groups.

These analyses are now available in two online documents: *Immigration in Canada: A Portrait of the Foreign-born Population, 2006 Census* and *The Evolving Linguistic Portrait, 2006 Census.*

Also available are several tables that contain new census data on mobility and migration.

Immigration and citizenship

Proportion of foreign-born highest in 75 years

The 2006 Census enumerated 6,186,950 foreign-born people in Canada. They accounted for virtually one in five (19.8%) of the total population, the highest proportion in 75 years.

Between 2001 and 2006, Canada's foreign-born population increased by 13.6%. This was four times higher than the growth rate of 3.3% for the Canadian-born population during the same period.

The census estimated that 1,110,000 immigrants came to Canada between January 1, 2001 and May 16, 2006. These newcomers made up 17.9% of the total foreign-born population, or 3.6% of Canada's total population of 31.2 million.

Recent immigrants born in Asia (including the Middle East) made up the largest proportion (58.3%) of newcomers to Canada. This was virtually unchanged from 59.4% in 2001. In contrast, in 1971, only 12.1% of recent immigrants for this period were born in Asia.

Newcomers born in Europe made up the second largest group (16.1%) of recent immigrants. Europe used to be the main source region of immigrants. In 1971, they accounted for 61.6% of newcomers to Canada.

In addition, an estimated 10.8% of recent immigrants were born in Central and South America and the Caribbean, up slightly from 8.9% in 2001. Another 10.6% of newcomers to Canada in 2006 were born in Africa, also up slightly from 8.3% in 2001.

A majority (70.2%) of the foreign-born population in 2006 reported a mother tongue other than English or French. (Mother tongue is defined as the first language learned at home in childhood and still understood by the individual at the time of the census.) Among the foreign-born who had a non-English, non-French mother tongue, the largest proportion reported Chinese languages (18.6%), followed by Italian (6.6%), Punjabi (5.9%), Spanish (5.8%), German (5.4%), Tagalog (4.8%) and Arabic (4.7%).

The Toronto, Montreal and Vancouver census metropolitan areas (CMAs) were home to 68.9% of the recent immigrants in 2006. In contrast, slightly more than one-quarter (27.1%) of Canada's total population lived in these three CMAs.

Between 2001 and 2006, higher proportions of recent immigrants chose to settle in smaller CMAs. Fully 16.6% of newcomers in 2006 settled in the CMAs of Calgary, Ottawa–Gatineau, Edmonton, Winnipeg, Hamilton and London. In 2001, by comparison, 14.3% of newcomers lived in these CMAs.

In 2006, 5.2% of newcomers chose to live in Calgary, 3.2% chose Ottawa–Gatineau, 2.9% chose Edmonton and 2.2% chose Winnipeg.

Within the Toronto, Montreal and Vancouver CMAs, newcomers tended to live in the central municipalities, but an increasing share of newcomers chose the surrounding municipalities.

In the Toronto CMA, 59.8% of its newcomers resided in the city of Toronto. Its surrounding municipalities, such as Mississauga, Brampton and Vaughan, had an increased share of newcomers; 28.8% of recent immigrants in 2006 lived in these surrounding municipalities, up from 21.4% in 2001.

In the Montreal CMA, a majority of newcomers (76.3%) lived in the city of Montreal. Its surrounding municipalities, such as Laval, Longueuil, Brossard, Dollard-des-Ormeaux and Côte-Saint-Luc, saw an increased share of new immigrants; 15.0% of newcomers in 2006 lived in these surrounding municipalities, up from 11.2% in 2001.

In the Vancouver CMA, nearly three-quarters (74.7%) of recent immigrants lived in just four municipalities: the cities of Vancouver, Richmond, Burnaby and Surrey.

The majority (85.1%) of the foreign-born who were eligible for Canadian citizenship in 2006 had become naturalized. The census enumerated 863,100 individuals, or 2.8% of the population, who reported a Canadian citizenship in addition to at least one other citizenship. Four out of every five of these individuals were foreign-born.

Language

For the first time, one Canadian in five was allophone

For the first time, allophones, that is, people whose mother tongue is neither English nor French, represented fully one-fifth of the population of Canada, according to the census. These include Aboriginal languages, which will be featured in the 2006 analytical document on Aboriginal Peoples that will be released on January 15, 2008.

Anglophones—those people who reported English as their mother tongue—still accounted for the majority of Canadians. Although their numbers rose, their share of the population declined. The same was true of francophones, or people who reported French as their mother tongue.

In 2006, allophones represented 20.1% of the population, up from 18.0% in 2001. The proportion of francophones decreased from 22.9% to 22.1%, while the proportion of anglophones in 2006 was 57.8%, down from 59.1% in 2001.

The increase in the share of allophones is mainly related to the number of immigrants who arrived in Canada between 2001 and 2006. During this period, an estimated 1,110,000 newcomers settled here, and four out of five of them were allophone.

In total, the census enumerated 6,293,110 allophones, an increase of 18.0%, or 958,265, from 2001. This increase was three times the growth rate of 5.4% for the population as a whole between 2001 and 2006, and well above the 12.5% gain in allophones during the previous five-year period.

At the same time, the census counted 18,056,000 anglophones, up 3.0%, and 6,892,000 francophones, an increase of only 1.6%. Both increases were slightly higher than the growth rates registered during the previous five years.

Canadians reported more than 200 languages in completing the census question on mother tongue. These include languages long associated with immigration to Canada, such as German, Italian, Ukrainian, Dutch and Polish.

However, between 2001 and 2006, language groups from Asia and the Middle East recorded the largest gains. These language groups include the Chinese languages, Punjabi, Arabic, Urdu, Tagalog and Tamil.

The 2006 Census reaffirmed the position of the Chinese languages as Canada's third most common mother tongue group, behind English and French.

For the first time, more than 1 million people—an estimated 1,034,000—reported one of the Chinese languages as their mother tongue. This was an increase of 18.5%, or 162,000, from 2001. In 2006, they accounted for 3.3% of the total population of Canada, up from 2.9% five years earlier.

Italian remained in fourth place, although its numbers declined, and German fifth. Punjabi solidified its hold on sixth, with a strong 34.4% increase. These were followed by Spanish, Arabic, Tagalog and Portuguese.

The census showed that 9 out of 10 people speak English or French most often at home. Other languages are not spoken at home as often as they are reported as mother tongues.

Just over one-fifth (21.4%) of the population spoke French most often at home at the time of the census, down from 22.0% in 2001. Two-thirds (66.7%) of the population spoke English most often at home in 2006, down from 67.5% in 2001.

Only 11.9% of the population spoke a non-official language most often at home. However, this was up from 10.4% in 2001, mainly the result of the increase in immigration.

In Quebec, 81.8% of the population spoke French most often at home, a decrease from 83.1% in 2001. About 10.6% spoke English most often at home, virtually unchanged from 2001. The remaining 7.6% spoke a language other than English or French most often at home, an increase from 6.5% in 2001. Again, this was mainly the result of immigration.

Mobility and migration

Statistics Canada makes available today several tables containing 2006 Census data on mobility and migration. These tables provide an overview of mobility in Canada between 2001 and 2006 by age, sex, marital status and mother tongue.

A short analysis on mobility and migration can be found in the analytical document *The Evolving Linguistic Portrait, 2006 Census*, released today. This analysis focuses on, among other things, interprovincial mobility of the main language groups (i.e., anglophones, francophones and allophones).

An in-depth analysis on mobility and migration in Canada will be part of a report to be released in June 2008 in the publication *Report on the Demographic Situation in Canada* (Catalogue no. 91-209-XWE). This analysis will take into account socio-economic variables such as occupation, education and income. These census variables, to be released in the coming months, will shed significant additional light on the nature of mobility in Canada.

Users interested in the most recent trends in interprovincial migration can refer to the last release of the population estimates, available in *The Daily* of September 27, 2007 or in *Quarterly Demographic Estimates* (Catalogue no. 91-002) available from the *Publications* module of our website.

For more information or to enquire about the concepts, methods, or data quality of this release, contact Client Services (toll-free 1-866-767-5611; 613-951-2320; fax: 613-951-2307; *demography@statcan.ca*), Demography Division.

2006 Census sub-module

Also released today are various products and services available from the *2006 Census* sub-module on our website. By clicking on the *Release topics and dates* link, then on *Immigration and citizenship*, *Language*, or *Mobility and migration*, users will find 2006 Census information on the immigration, citizenship, language, and mobility and migration of the Canadian population.

The information on this web page is organized into three broad categories: *Data products*, *Analysis series*, and *Geography*.

The *Data products* category presents the immigration, citizenship, language, mobility and migration data for a wide range of standard geographic areas.

Data are available through the *Immigration and citizenship highlight tables*, the *Language highlight tables*, the *Topic-based tabulations*, the *Profile release components*, the *2006 Community Profiles* and the *Census tract (CT) profiles*. As well, the new *Census Trends* product (phase 1 released today), presents a series of summary data trends spanning the 2006, 2001 and 1996 censuses. The product is designed to facilitate the analysis and comparison of the changing demographic and socio-economic composition of selected geographic areas across Canada. The second set of summary data trends (phase 2) will be released on May 1, 2008. The product, in total, will include approximately 85 key data indicators.

The *Analysis series* category presents the language analytical perspective report *The Evolving Linguistic Portrait, 2006 Census*, and the immigration and citizenship analytical perspective report *Immigration in Canada: A Portrait of the Foreign-born Population, 2006 Census*.

The *Geography* category presents thematic maps containing language, immigration and citizenship data for standard geographic areas in Canada.

By using GeoSearch2006, an interactive mapping tool, users can find any area in Canada, as well as a corresponding map of the area with its population count. A large collection of supplementary geography reference material and maps is also available.

The next release of data from the 2006 Census, scheduled for January 15, 2008, will provide information on Aboriginal peoples. Three more major census data releases are scheduled through to May 2008.

Definitions, data sources and methods: survey number 3901.

For more information, please contact Media Relations (613-951-4636), Communications and Library Services Division.

http://www.statcan.ca/Daily/English/071204/d071204a.htm

The Government of Canada Announces Contribution to New International Fund for Cultural Diversity

OTTAWA, December 10, 2007 - The Honourable Josée Verner, Minister of Canadian Heritage, Status of Women and Official Languages, today announced that Canada will contribute to the UNESCO International Fund for Cultural Diversity.

Minister Verner made the announcement of a $500,000 contribution for 2008-09 during the inaugural session of the Intergovernmental Committee for the Protection and Promotion of the Diversity of Cultural Expressions, taking place in Ottawa until December 13.

"The International Fund for Cultural Diversity is essential to the success of the Convention on the Protection and Promotion of the Diversity of Cultural Expressions," said Minister Verner. "The Fund will support cooperation on sustainable development and foster the emergence of a dynamic cultural sector, while addressing the specific needs of developing countries."

During this first Committee session, Canada is working closely with other member states, particularly to prepare guidelines for the International Fund for Cultural Diversity, which will help to bring about the objectives of the Convention. The Committee is mandated to promote the Convention and ensure its implementation.

"The Government of Canada is proud to host the first session of the Intergovernmental Committee for the Protection and Promotion of the Diversity of Cultural Expressions," said Minister Verner. "The Convention is of vital importance for Canada. It recognizes the specific nature of the cultural activities, goods, and services through which our artists and creators express their ideas, make their voices heard, and celebrate their differences. The Convention recognizes the immense value of that contribution."

Canada was the first country to ratify the Convention on the Protection and Promotion of the Diversity of Cultural Expressions and continues to play a leading role in promoting its ratification by a growing number of countries around the world. The Convention entered into force on March 18, 2007, and now has over 75 signatory states on five continents.

Under the Canada-Quebec Agreement Concerning UNESCO, the Government of Quebec has full representation within the Canadian delegation during this important international forum.

For more information about the UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions, please see the attached fact sheet and list of frequently asked questions or visit the Department of Canadian Heritage website at www.canadianheritage.gc.ca

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FACT SHEET

Canada recognizes cultural diversity as a source of creativity, innovation, social cohesion, and economic development. In addition to welcoming diverse cultural expressions from abroad, Canada firmly believes

that it is also essential for Canadians to have access to their own culture through books, magazines, music, television, film, and new media.

The UNESCO *Convention on the Protection and Promotion of the Diversity of Cultural Expressions* is an important international legal instrument that reaffirms the right of countries to adopt cultural policies to promote the diversity of cultural expressions. The Convention also recognizes the dual economic and social nature of cultural goods and services.

The Convention was adopted by UNESCO on October 20, 2005, and officially entered into force on March 18, 2007. It now has over 75 signatory states, and several more have indicated their intention to sign in the near future. The Convention gives our artists and cultural professionals the means to develop and promote their work and artistic expressions, both in Canada and abroad.

In keeping with the spirit of open federalism, the Government of Canada has been working closely with the governments of Quebec and the other provinces and territories, as well as with civil society, to achieve concrete results that will benefit all Canadians.

Canada is proud to host **the first session of the Intergovernmental Committee for the Protection and Promotion of the Diversity of Cultural Expressions**, taking place in Ottawa from December 10 to 13, 2007. This Committee is mandated to ensure implementation of the Convention.

The Committee is elected by the Conference of Parties to the Convention, and consists of representatives of 24 party states to the Convention. The agenda for the first session of the Committee includes the election of the members of the Bureau of the First Session of the Committee; the creation of a work plan for the Committee's four meetings; the preparation of guidelines on the use of the resources of the International Fund for Cultural Diversity; international cooperation; and the role and participation of civil society in implementing the Convention.

The International Fund is intended to support cooperation on sustainable development, thereby fostering the emergence of a dynamic cultural sector, particularly by addressing the specific needs of developing countries. Canada believes that the International Fund for Cultural Diversity is essential to the success of the Convention, and has reaffirmed its intention to support the implementation of the Convention by contributing to the Fund.

FREQUENTLY ASKED QUESTIONS

What are the rights of states that join or ratify the Convention?
The Convention allows states to enact policies and measures that foster the creation, production, presentation, and distribution of national cultural expressions and that enable access to diverse cultural expressions. States can therefore establish, for example, funding programs, content regulations, tax measures, measures to protect intellectual property, and publicly funded cultural institutions in order to support national artists and cultural industries.

What are the benefits of the Convention?

- **For citizens:** It gives them access to their own stories and to the broad and rich diversity of cultural expressions the world has to offer, and promotes the spread of culture around the world.
- **For cultural industries:** It establishes an international marketplace conducive to the free and dynamic exchange of their products.
- **For governments:** It acknowledges their legitimate role in supporting creativity through cultural policy and it strengthens international cooperation so as to support the development of cultural expressions of all countries.

What are signatory states' obligations under the Convention?
States that have joined the Convention must adhere to the principles of international law and to the universally recognized international human rights instruments. To protect and promote the diversity of

cultural expressions, member states must encourage the sharing of their expertise, information and statistics, and best practices. They must cooperate in matters of education, public awareness, training, and cultural exchanges and encourage active participation by civil society in their efforts to implement the Convention.

Does the Convention affect relations between states?
In the Convention, international cooperation is of central importance, and states are encouraged to create the conditions conducive to promoting cultural diversity by:

- Facilitating dialogue on cultural policy;
- Building public-sector strategic and management capacities with respect to cultural institutions by way of professional and international cultural exchanges, and by sharing best practices, in particular with developing countries;
- By strengthening partnerships with civil society, non-governmental organizations, and the private sector;
- Promoting the use of new technologies;
- Fostering partnerships to strengthen information sharing and cultural understanding, in particular by signing joint production and distribution agreements; and
- Establishing an International Fund for Cultural Diversity.

http://www.pch.gc.ca/newsroom/index_e.cfm?fuseaction=displayDocument&DocIDCd=CJV072065

Overeating And Obesity Triggered By Lack Of One Gene

According to the Centers for Disease Control and Prevention, close to one-third of the population in the United States is obese and another third is overweight. Excessive weight gain is elicited by alterations in energy balance, the finely modulated equilibrium between caloric intake and expenditure. But what are the factors that determine how much food is consumed? (Credit: iStockphoto/Brian Toro)

ScienceDaily (Dec. 31, 2007) — According to the Centers for Disease Control and Prevention, close to one-third of the population in the United States is obese and another third is overweight. Excessive weight gain is elicited by alterations in energy balance, the finely modulated equilibrium between caloric intake and expenditure. But what are the factors that determine how much food is consumed?

Part of the mystery is unfolding in the laboratory of Maribel Rios, PhD, at the Sackler School of Graduate Biomedical Sciences at Tufts University School of Medicine in Boston. Through their work, Rios and colleagues have demonstrated for the first time that a protein called brain-derived neurotrophic factor (BDNF) is critical in mediating satiety in adult mice.

Mice in which the BDNF gene was deleted in two of the primary appetite-regulating regions of the brain ate more and became significantly heavier than their counterparts. "Prior to this study, we knew that the global lack of BDNF and/or its receptor during development leads to overeating and obesity in young mice. However, it remained unclear and controversial whether BDNF mediated satiety in adult animals. Our recent findings demonstrate that BDNF synthesis in the ventromedial (VMH) and dorsomedial hypothalamus (DMH) is required for normal energy balance. Additionally, because the mice examined in this study were genetically altered in adulthood, we were able to establish that BDNF acts as a satiety signal in the mature brain independently from its putative actions during development of the brain. This important distinction might help define disease mechanisms and critical periods of intervention for the treatment and prevention of obesity disorders," says Rios, corresponding author and an assistant professor of neuroscience at the Sackler School.

The obesity exhibited by BDNF-depleted mice appears to arise solely from overconsumption of calories. "Normal body weight was restored in mutant mice when food access was limited to that of

normal mice, indicating that deletion of the Bdnf gene in the VMH and DMH does not affect the expenditure side of the energy balance equation," adds Rios.

In a series of related experiments, the researchers used advanced molecular and surgical techniques to measure levels of BDNF mRNA, a precursor of active BDNF protein, in relation to nutritional status. Thaddeus Unger, a graduate student at the Sackler School and the study's first author, describes the results of these analyses. "The amount of BDNF mRNA produced decreased during periods of fasting. However, when the mice were exposed to glucose, a macronutrient," Unger notes, "we observed a rapid, but transient, increase in the expression of BDNF and its receptor. These changes occurred specifically in the VMH, which is known to be involved in the regulation of food intake."

The researchers confirmed that glucose acts directly in the brain, rather than through peripheral pathways, to increase BDNF expression. "Direct administration of BDNF into the brain," states Rios, "also led to an immediate increase in the levels of an early-response gene and marker of nerve-cell activation in both the VMH and the DMH. These results suggest that BDNF is a fast-acting signal inducing neuronal activity within neural circuits involved in appetite control."

"Mice with site-specific perturbation of BDNF expression did not exhibit behavioral abnormalities typically observed in mice with global deletion of the Bdnf gene throughout the brain, such as hyperaggression, depressive-like behavior, and hyperactivity," notes Rios. "The absence of these behaviors suggests that BDNF expression in the VMH and DMH is not required for regulation of non-appetite-related behaviors."

"Our results establish that BDNF plays a prominent and direct role in the regulation of energy balance in adult mice." states Rios. "It appears that this signaling pathway acts, at least partly, through short-term mechanisms and that BDNF synthesis in the VMH and DMH is required for suppression of appetite."

While she notes that additional studies are needed to further pinpoint the cellular and molecular targets of BDNF action, Rios says, "This work brings us closer to elucidating the brain pathways that rely on BDNF to modulate food intake." She adds that "the relevance of the BDNF signaling pathway in human disease is highlighted by the obesity exhibited by certain humans carrying mutations or abnormalities in the genes coding for BDNF or its receptor. This is bound to be an important area of obesity research as more than a quarter on the American population has been estimated to carry mutations in the Bdnf gene."

This research was supported by grants from the National Institute of Diabetes and Digestive and Kidney Diseases and National Institute of Mental Health at the National Institutes of Health.

Journal reference: Unger T, Calderon G, Bradley L, Sena-Esteves M, Rios M. Journal of Neuroscience. 2007 (December 26); 27(52): 14265-14274. "Selective Deletion of Bdnf in the Ventromedial and Dorsomedial Hypothalamus of Adult Mice Results in Hyperphagic Behavior and Obesity."

Adapted from materials provided by Tufts University, Health Sciences.

http://www.sciencedaily.com/releases/2007/12/071227183853.htm

Sshhh, It's Listening: Totally New Computer Interfaces

Keyboards are a necessary part of today's computers, right? Maybe not for much longer. A group of European scientists have used acoustic sensors to turn wooden tabletops and even three-dimensional objects into a new type of computer interface. (Credit: Image courtesy of ICT Results)

ScienceDaily (Dec. 30, 2007) — Keyboards are a necessary part of today's computers, right? Maybe not for much longer. A group of European scientists have used acoustic sensors to turn wooden tabletops and even three-dimensional objects into a new type of computer interface.

Sound vibrating a windowpane or through a tabletop is something most people experience daily. Sound waves travel well through most solid materials. Now, European researchers have exploited the excellent propagation of sound waves through solids to turn everyday objects – including 3D objects – into a new kind of computer interface.

By attaching sensors to solid materials, researchers from TAI-CHI, a project working with Tangible Acoustic Interfaces for Computer-Human Interaction, were able to locate exactly and track acoustic vibrations. Tapping on discrete areas of a whiteboard could generate musical notes on a computer. Tracking the sound of a finger scrawling words on a sheet of hardboard could translate, in real time, into handwriting on a computer screen. There is no need for overlays or intrusive devices.

Sensing vibrations in a solid and converting them to electrical pulses is the easy bit. Exactly locating the source of that vibration in a solid material is where it gets complicated. The problem is that the complex structures of solids make wave propagation difficult to model. Wood knots in a desktop, for instance, will alter how acoustic vibrations disperse.

Reading the signals

The TAI-CHI team investigated four main technologies. Time Delay of Arrival (TDOA) uses three or more sensors and compares the difference in arrival times of an acoustic wave at each of the sensors to establish location. In fact, the concept of TDOA has been around for about 100 years. Provided you know the propagation velocity of acoustic waves through the solid material, TDOA provides a very practical, if rather expensive, solution.

Time reversal, on the other hand, needs only a single sensor. It works on the notion that each location on the surface of a solid generates a unique impulse response which can be recorded and used to calibrate the object. Time reversal works on 3D objects just as well as flat surfaces.

MUlti-Sensor Tracking through the Reversal of Dispersion (MUST-RD) requires a deep understanding of the wave-dispersion properties of the solid. The dispersion curve of acoustic waves moving through the material under test is compared to a database of dispersion curves for common materials. From the comparison, the location of the vibration source can be calculated. (MUST-RD can also be used to give a crude estimation of a material type.)

Finally, TAI-CHI researchers worked with in-solid acoustic holography. Using sound pressure, sound intensity or particle velocity to calculate position and time, a sound source can be mapped and visualised in much the same way as an infrared camera can map heat sources. Some of the TAI-CHI researchers also experimented with a combination of acoustic localisation and Doppler tracking to locate and track sound sources moving through the air.

The range of researchers brought together by the project, part-funded by the European Commission – in Germany, France, Italy, England, Wales and Switzerland – was an important factor in its success, according to TAI-CHI coordinator, Dr Ming Yang of the University of Cardiff.

Specialist solution

Tangible acoustic interfaces like this are not going to replace keyboards and computer mice in the near future, says Dr Ming Yang. But in specific environments where keyboards are impractical – perhaps in very dirty environments or in hospitals where a keyboard might be a hiding place for bugs – TAIs could provide an elegant solution.

“Time reversal is a beautiful technology,” he says. “Unlike TDOA, it works with any object and it does not require special materials. Because it needs only a single sensor and a normal computer, it is very simple and cost-effective. One spin-off company from the University of Paris is working on commercial applications for this.”

Other technologies, such as acoustic holography, show great promise but are not ready for commercialisation.

CeTT, a Swiss member of the consortium, has put together a TAI-CHI Developer’s Kit, comprising algorithms developed during the project, software and hardware, as a one-stop-shop for application developers looking to build on TAI-CHI breakthroughs.

Other applications include a wireless sensor using Bluetooth technology that Dr Ming Yang would like to develop with commercial partners.

The time-reverse technology is the project’s major breakthrough, according to Dr Ming Yang. “Before, people were only working on easy materials. We have developed it for metal, plastic and board. We have a really interactive interface.”

Adapted from materials provided by ICT Results.

http://www.sciencedaily.com/releases/2007/12/071221225708.htm

Culinary Shocker: Cooking Can Preserve, Boost Nutrient Content Of Vegetables

Contrary to conventional wisdom, a new study by Italian researchers finds that cooking vegetables can preserve or even boost their nutrient content. (Credit: USDA-ARS photo by Scott Bauer)

ScienceDaily (Dec. 30, 2007) — In a finding that defies conventional culinary wisdom, researchers in Italy report that cooking vegetables can preserve or even boost their nutritional value in comparison to their raw counterparts, depending on the cooking method used.

Their study is scheduled for the Dec. 26 issue of ACS' Journal of Agricultural and Food Chemistry, a bi-weekly publication.Nicoletta Pellegrini and colleagues note that although many people maintain that eating raw vegetables is more nutritious than eating cooked ones, a small but growing number of studies suggest that cooking may actually increase the release of some nutrients. However, scientists are seeking more complete data on the nutritional properties of cooked vegetables, the researchers say.

In the new study, the researchers evaluated the effects of three commonly-used Italian cooking practices — boiling, steaming, and frying — on the nutritional content of carrots, zucchini and broccoli. Boiling and steaming maintained the antioxidant compounds of the vegetables, whereas frying caused a significantly higher loss of antioxidants in comparison to the water-based cooking methods, they say. For broccoli, steaming actually increased its content of glucosinolates, a group of plant compounds touted for their cancer-fighting abilities. The findings suggest that it may be possible to select a cooking method for each vegetable that can best preserve or improve its nutritional quality, the researchers say.

Adapted from materials provided by American Chemical Society.

http://www.sciencedaily.com/releases/2007/12/071224125524.htm

Adult Male Chimpanzees Don't Stray Far From The Home

Chimpanzee in Tanzania. When it comes to choosing a place to live, male chimpanzees in the wild don't stray far from home. (Credit: iStockphoto/Gary Wales)

ScienceDaily (Dec. 30, 2007) — When it comes to choosing a place to live, male chimpanzees in the wild don't stray far from home, according to a new report. The researchers found that adult male chimps out on their own tend to follow in their mother's footsteps, spending their days in the same familiar haunts where they grew up. Male chimpanzees are generally very social, but how they use space when they are alone might be critical to their survival, the researchers said.

"We have found that, like females, male chimpanzees have distinct core areas in which they forage alone and to which they show levels of site fidelity equal to those of females," said Anne Pusey of the University of Minnesota. "Moreover, males remain faithful to the area in which they grew up with their mother, even 20 years after she has died. Even alpha males, who could presumably compete successfully to forage in the most productive areas, instead continue to forage in the areas in which they grew up, even in cases where this area is of poor quality."

They suspect that sticking to places they know well might give chimpanzees an advantage when searching for food. The new findings therefore suggest that, even for males, the need to eat can sometimes trump sex. Because males' reproductive success depends on the number of females they can fertilize, their ranging patterns were generally thought to be driven more by access to females than to food, she said. This study demonstrates that food and members of the opposite sex both affect male space use.

The majority of studies on site fidelity have focused upon strictly territorial species in which individuals range in well-defined, exclusive areas, the researchers said. By comparison, little is known about species, including chimpanzees, that form more transient groups, lending them greater flexibility in individual space use.

Earlier studies based on indirect measures of ranging indicated that young adult male chimps seemed to continue to range near their mothers. In the new study, the researchers analyzed space use of male

chimpanzees living in Gombe National Park, Tanzania, over four years. They compared the males' ranges to those in which their mothers had travelled in years past.

"Our study shows that male site fidelity persists for years after the mother has died and probably for the whole life of the male," Pusey said.

The findings raise interesting questions for future studies, she said. They plan to test whether chimpanzees really do find food more efficiently in familiar areas. They would also like to know whether males learn to follow particular diets from their mothers.

This research was published in the Dec. 27th issue of Current Biology.

The researchers include Carson M. Murray, Jane Goodall Institute's Center for Primate Studies and Department of Ecology, Evolution, and Behavior, University of Minnesota, St. Paul, Minnesota, USA, and Lester E. Fisher Center for the Study and Conservation of Apes, Lincoln Park Zoo, Chicago, IL, USA; Ian C. Gilby, Department of Anthropology, Harvard University, Cambridge, MA, USA; Sandeep V. Mane, Department of Computer Science, University of Minnesota, Minneapolis, MN; and Anne E. Pusey, Jane Goodall Institute's Center for Primate Studies and Department of Ecology, Evolution, and Behavior, University of Minnesota, St. Paul, MN, USA.

Adapted from materials provided by Cell Press.

http://www.sciencedaily.com/releases/2007/12/071227184054.htm

Photo-monitoring Whale Sharks: Largest Fish In The Sea Appear To Thrive Under Regulated Ecotourism

Whale sharks (Rhincodon typus) are known to travel extensively across the oceans, but their demographics, migratory patterns and reproductive behavior are still a mystery. (From Ningaloo Marine Park, Australia, 2006) (Credit: Copyright Rolex Awards/Kurt Amsler)

ScienceDaily (Dec. 29, 2007) — Up to 20 meters long and weighing as much as 20 tons, its enormous size gives the whale shark (Rhincodon typus) its name. Known as the 'gentle giant' for its non-predatory behavior, this fish, with its broad, flattened head and minute teeth, eats tiny zooplankton, sieving them through a fine mesh of gill-rakers. Listed as a rare species, relatively little is known about whale sharks, which live in tropical and warm seas, including the western Atlantic and southern Pacific.

However, a new study combines computer-assisted photographic identification with ecotourism to study the rare species and suggests whale shark populations in Ningaloo, Western Australia are healthy. The study appears in the Ecological Society of America's January issue of Ecological Applications.

West Australian marine scientist Brad Norman (ECOCEAN/Murdoch University) began the study in 1995. Photographs were taken while swimming alongside each whale shark and photographing or video-taping the white lines and spots along the flanks of the animal. Norman teamed up with U.S. computer programmer Jason Holmberg (ECOCEAN, Portland, Oregon) and astronomer Zaven Arzoumanian (USRA/NASA, Greenbelt, Maryland) who adapted software originally used with the Hubble space telescope. The pattern-recognition software developed by Holmberg and Arzoumanian allowed the group to positively identify individual whale sharks. Like a human fingerprint, the speckles and stripes pattern on the skins of whale sharks are believed to be unique to each individual.

Ningaloo Reef, in Western Australia, is one of the best locations to find whale sharks, especially between April and June. The authors found that more whale sharks are returning to the northern area of Ningaloo Marine Park from season to season, suggesting the population is growing. In addition, they

found that about two-thirds of the sharks were repeat visitors while one-third were sighted only once during the study period.

The authors say their study suggests that the management guidelines for whale shark ecotourism at Ningaloo appear to be on target.

"Applying these guidelines to other locations along whale shark migration routes may offer a viable alternative to hunting these fish, one that yields both economic and conservation benefits," says Norman.

As a rare and highly migratory fish, whale sharks are a big draw for Ningaloo's ecotourism industry, where tourists pay to get close views and even swim with the sharks. In spite of their gargantuan size, whale sharks are fairly docile; the main risk comes from getting in the way of their very large and powerful tails.

Based on 5100 underwater images contributed by hundreds of researchers, divers, and ecotourists, the authors obtained almost ten times more data than any previous study.

"To study whale sharks in a meaningful way, we really had to rethink how we collect data and how we analyze it," says Holmberg. "The results surpassed our expectations, allowing hundreds of individuals to contribute and providing the necessary data to obtain a closer look at the population's health."

Norman and colleagues note that while their study is encouraging for the Ningaloo whale shark populations, global concern over their future is justified, especially in areas where the sharks continue to be hunted for their fins and meat. The researchers hope others will apply their techniques to other whale shark populations, as well as to other species.

Adapted from materials provided by Ecological Society of America.

http://www.sciencedaily.com/releases/2007/12/071226003604.htm

Two 'Noses' Are Necessary For Flies To Navigate Well

By genetically manipulating flies to express odorant receptors in one olfactory organ or both, researchers have shown that the brains of Drosophila melanogaster larvae not only make use of stereo cues to locate odors but also to navigate toward them -- a behavior called chemotaxis. (Credit: iStockphoto)

ScienceDaily (Dec. 29, 2007) — Animals and insects communicate through an invisible world of scents. By exploiting infrared technology, researchers at Rockefeller University just made that world visible. With the ability to see smells, these scientists now show that when fly larvae detect smells with both olfactory organs they find their way toward a scented target more accurately than when they detect them with one.

"Having two eyes allows us to have depth perception and two ears allows us to pinpoint a noise precisely," says Leslie Vosshall, head of the Laboratory of Neurogenetics and Behavior. "Sensing odors in stereo is equally important."

In research to be published in the December 23 online issue of Nature Neuroscience, Vosshall and her colleagues show that odor information is easier to perceive when it is smelled with both olfactory organs. By genetically manipulating flies to express odorant receptors in one olfactory organ or both, they show that the brains of Drosophila melanogaster larvae not only make use of stereo cues to locate odors but also to navigate toward them -- a behavior called chemotaxis.

To study this behavior, Vosshall and her colleagues had to figure out which direction the larvae move with respect to the source of the odor. But since odors are invisible, the researchers could neither predict how the flies would move in relation to these scents nor guess whether the odors were concentrated in patches or along a gradient. To complicate matters, odors whisk to and fro at the mercy of the slightest stir, making it impossible to determine their concentrations at particular locations.

"We needed to create an environment in which we knew something about the spatial arrangement of the odors," says Vosshall. "We needed to see the smells."

In collaboration with colleagues in Thomas P. Sakmar's Laboratory of Molecular Biology and Biochemistry, the researchers used a novel spectroscopic technique that exploited infrared light to

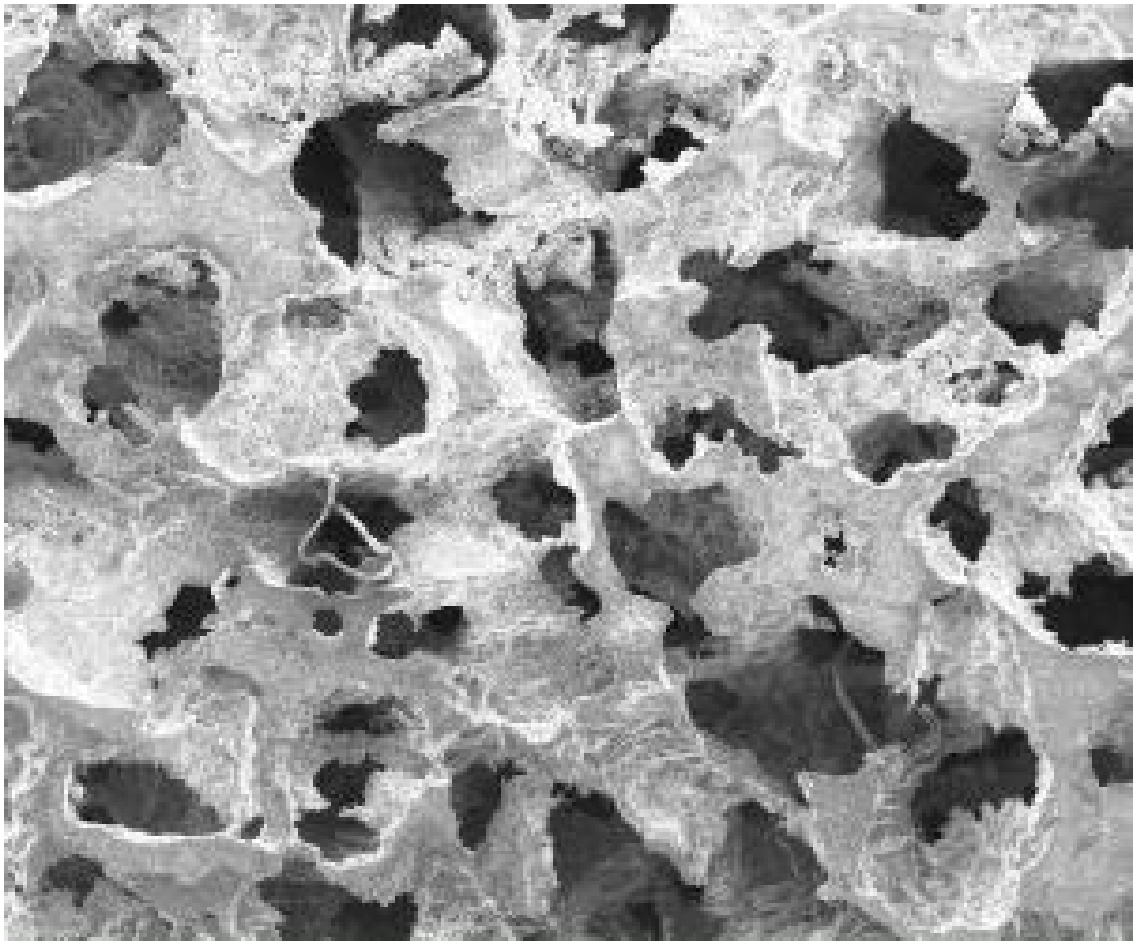
create environments where they could see, control and precisely quantify the distribution of these smells.

When Vosshall and her colleagues observed the animals' behavior, they found that although animals with one functional nose or two were both able to sense odors, only the ones with both olfactory organs working accurately navigated toward the odor source. "A left-right comparison isn't necessary for flies to smell," says Vosshall, "but it is necessary for them to do it well."

Adapted from materials provided by Rockefeller University.

http://www.sciencedaily.com/releases/2007/12/071226230117.htm

Metal Foam Has A Good Memory



The porous nature of nickel-manganese-gallium alloy gives it "shape-memory" properties. The material lengthens, or strains, up to 10 percent when subjected to a magnetic field. The NSF-funded researchers believe the porous alloy has great potential for uses that require light weight and a large strain, such as space and automotive applications and tiny motion control devices or biomedical pumps with no moving parts. (Credit: P. Müllner, M. Chmelius and S. Donovan, Boise State University, and D. Dunand and Y. Boonyoungmaneerat, Northwestern University)

ScienceDaily (Dec. 28, 2007) — In the world of commercial materials, lighter and cheaper is usually better, especially when those attributes are coupled with superior strength and special properties, such as a material's ability to remember its original shape after it's been deformed by a physical or magnetic force.

A new class of materials known as "magnetic shape-memory foams" has been developed by two research teams headed by Peter Müllner at Boise State University and David Dunand at Northwestern University.

The foam consists of a nickel-manganese-gallium alloy whose structure resembles a piece of Swiss cheese with small voids of space between thin, curvy "struts" of material. The struts have a bamboo-like grain structure that can lengthen, or strain, up to 10 percent when a magnetic field is applied. Strain is the degree to which a material deforms under load. In this instance, the force came from a magnetic field rather a physical load. Force from magnetic fields can be exerted over long range, making them advantageous for many applications. The alloy material retains its new shape when the field is turned off, but the magnetically sensitive atomic structure returns to its original structure if the field is rotated 90 degrees--a phenomenon called "magnetic shape-memory."

Making large single crystals of the alloy material is too slow and expensive to be commercially viable -- one of the reasons why gems are so costly -- so the researchers make polycrystalline alloys, which contain many small crystals or grains. Traditional polycrystalline materials are not porous and exhibit near zero strains due to mechanical constraints at the boundaries between each grain.

In contrast, a single crystal exhibits a large strain as there are no internal boundaries. By introducing voids into the polycrystalline alloy, the researchers have made a porous material that has less internal mechanical constraint and exhibits a reasonably large degree of strain.

The researchers created the new material by pouring molten alloy into a piece of porous sodium aluminate salt. Once the material cooled, they leached out the salt with acid, leaving behind large voids. The researchers then exposed the porous alloy to a rotating magnetic field. The level of strain achieved after each of the over 10 million rotations is consistent with the best currently used magnetic actuators, and Müllner and Dunand expect to significantly improve the strain when they have further optimized the foam's architecture.

"The base alloy material was previously known, but it wasn't very effective for shape-memory applications," Dunand said. "The porous nature of the material amplifies the shape-change effect, making it a good candidate for tiny motion control devices or biomedical pumps without moving parts."

NSF Program Director Harsh Deep Chopra agrees. "It's the first foam to exhibit magnetic shape memory - it has great potential for uses that require a large strain and light weight such as space applications and automobiles. These materials are able to do more with less material given their foamy structure and provide a sustainable approach to materials development."

The work was funded by the National Science Foundation.

Adapted from materials provided by National Science Foundation.

http://www.sciencedaily.com/releases/2007/12/071220111513.htm

Deep-sea Species' Loss Could Lead To Oceans' Collapse, Study Suggests

In a global-scale study, researchers found some of the first evidence that the health of the deep sea, as measured by the rate of critical ecosystem processes, increases exponentially with the diversity of species living there. (Credit: NASA)

ScienceDaily (Dec. 28, 2007) — The loss of deep-sea species poses a severe threat to the future of the oceans, suggests a new report publishing early online on December 27th and in the January 8th issue of Current Biology, a publication of Cell Press. In a global-scale study, the researchers found some of the first evidence that the health of the deep sea, as measured by the rate of critical ecosystem processes, increases exponentially with the diversity of species living there.

"For the first time, we have demonstrated that deep-sea ecosystem functioning is closely dependent upon the number of species inhabiting the ocean floor," said Roberto Danovaro of the Polytechnic University of Marche, in Italy. "This shows that we need to preserve biodiversity, and especially deep-sea biodiversity, because otherwise the negative consequences could be unprecedented. We must care about species that are far from us and [essentially] invisible."

Ecosystem functioning involves several processes, which can be summarized as the production, consumption, and transfer of organic matter to higher levels of the food chain, the decomposition of organic matter, and the regeneration of nutrients, he explained.

Recent investigations on land have suggested that biodiversity loss might impair the functioning and sustainability of ecosystems, Danovaro said. However, the data needed to evaluate the consequences of biodiversity loss on the ocean floor had been completely lacking, despite the fact that the deep sea covers 65% of the Earth and is "by far the most important ecosystem for the cycling of carbon, nitrogen, and phosphorus of the biosphere." The deep sea also supports the largest "biomass" of living things, including a large proportion of undiscovered species.

In the new study, Danovaro's team examined the biodiversity of nematode worms and several independent indicators of ecosystem functioning and efficiency at 116 deep-sea sites. Nematodes are the most abundant animals on earth and account for more than 90% of all life at the bottom of the sea. Earlier studies have also suggested that nematode diversity is a good proxy for the diversity of other deep-sea species.

They found that sites with a higher diversity of nematodes support exponentially higher rates of ecosystem processes and an increased efficiency with which those processes are performed. Efficiency reflects the ability of an ecosystem to exploit the available energy in the form of food sources, the researchers said. Overall, they added, "our results suggest that a higher biodiversity can enhance the ability of deep-sea benthic systems to perform the key biological and biogeochemical processes that are crucial for their sustainable functioning."

The sharp increase in ecosystem functioning as species numbers rise further suggests that individual species in the deep sea make way for more species or facilitate one another, Danovaro said. That's in contrast to terrestrial-system findings, which have generally shown a linear relationship between diversity and ecosystem functioning, he noted, suggesting complementary relationships among species.

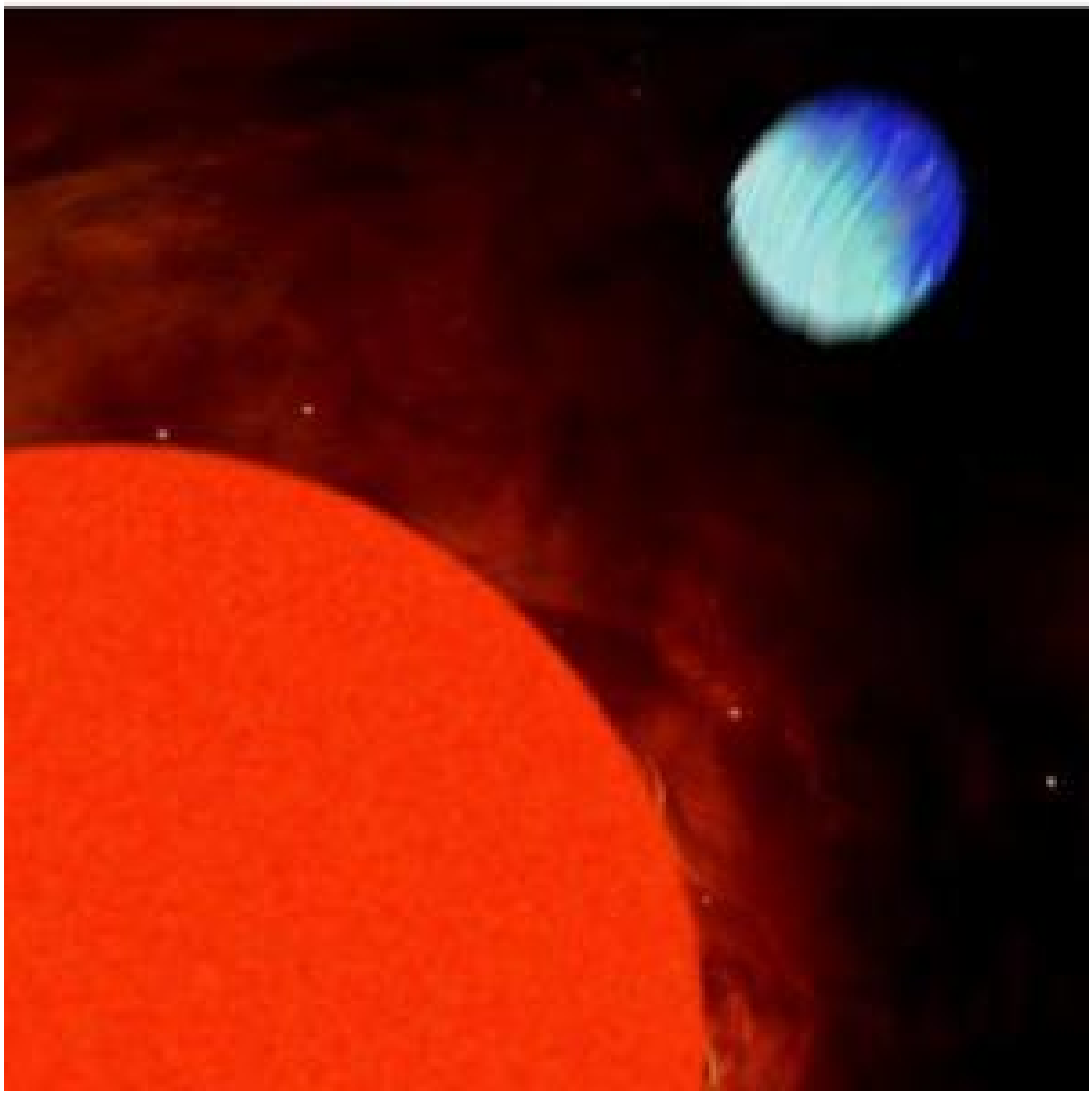
"Deep-sea ecosystems provide goods (including biomass, bioactive molecules, oil, gas, and minerals) and services (climate regulation, nutrient regeneration and supply to the [upper ocean], and food) and, for their profound involvement in global biogeochemical and ecological processes, are essential for the sustainable functioning of our biosphere and for human wellbeing," the researchers concluded. "Our results suggest that the conservation of deep-sea biodiversity can be crucial for the sustainability of the functions of the largest ecosystem" on the planet.

The researchers include Roberto Danovaro, Department of Marine Science, Faculty of Science, Polytechnic University of Marche, Via Brecce Bianche, Ancona, Italy; Cristina Gambi, Department of Marine Science, Faculty of Science, Polytechnic University of Marche, Via Brecce Bianche, Ancona, Italy; Antonio Dell'Anno, Department of Marine Science, Faculty of Science, Polytechnic University of Marche, Via Brecce Bianche, Ancona, Italy; Cinzia Corinaldesi, Department of Marine Science, Faculty of Science, Polytechnic University of Marche, Via Brecce Bianche, Ancona, Italy; Simonetta Fraschetti, Ann Vanreusel, Marine Biology Section, University of Ghent, Ghent, Belgium; Magda Vincx, Marine Biology Section, University of Ghent, Ghent, Belgium; and Andrew J. Gooday, National Oceanography Centre, Southampton, UK.

Adapted from materials provided by Cell Press.

http://www.sciencedaily.com/releases/2007/12/071227184100.htm

Exoplanet Reflected Light Detected For The First Time



An artistic view of the HD189733 star-planet system near a half-moon phase when polarization of the light reflected by the planet reaches the maximum. (Credit: ETH Zurich, S.V. Berdyugina)

ScienceDaily (Dec. 28, 2007) — An international team of astronomers, led by Professor Svetlana Berdyugina of ETH Zurich's Institute of Astronomy, has for the first time ever been able to detect and monitor the visible light that is scattered in the atmosphere of an exoplanet.

Employing techniques similar to how Polaroid sunglasses filter away reflected sunlight to reduce glare, the team of scientists were able to extract polarized light to enhance the faint reflected starlight 'glare' from an exoplanet. As a result, the scientists could infer the size of its swollen atmosphere. They also directly traced the orbit of the planet, a feat of visualization not possible using indirect methods.

Hot Jupiter

The transiting exoplanet under study circles the dwarf star HD189733 in the constellation Vulpecula and lies more than 60 light years from the earth. Known as HD189733b, this exoplanet was discovered two years ago via Doppler spec-troscopy. HD189733b is so close to its parent star that its atmosphere expands from the heat. Until now, astronomers have never seen light reflected from an exoplanet,

although they have deduced from other observations that HD189733b probably resembles a 'hot Jupiter' -- a planet orbiting extremely closely to its parent star. Unlike Jupiter, however, HD189733b orbits its star in a couple of days rather than the 12 years it takes Jupiter to make one orbit of the sun.

Two half-moon phases

The international team, consisting of Svetlana Berdyugina, Dominique Fluri (ETH Zurich), Andrei Berdyugin and Vilppu Piirola (Tuorla Observatory, Finland), used the 60cm KVA telescope by remote control. The telescope, which belongs to the Royal Swedish Academy of Science, is located at La Palma, Spain and was modernised by scientists in Finland. The researchers obtained polarimetric measurements of the star and its planet. They discovered that polarization peaks near the moments when half of the planet is illuminated by the star as seen from the earth. Such events occur twice during the orbit, similar to half-moon phases.

The polarization indicates that the scattering atmosphere is considerably larger (>30%) than the opaque body of the planet seen during transits and most probably consists of particles smaller than half a micron, for example atoms, molecules, tiny dust grains or perhaps water vapour, which was recently sug-gested to be present in the atmosphere. Such particles effectively scatter blue light -- in exactly the same scattering process that creates the blue sky of the earth's atmosphere. The scientists were also able for the first time to recover the orientation of the planet's orbit and trace its motion in the sky.

"The polarimetric detection of the reflected light from exoplanets opens new and vast opportunities for exploring physical conditions in their atmospheres", Pro-fessor Svetlana Berdyugina said. "In addition, more can be learned about radii and true masses, and thus the densities of non-transiting planets."

Reference: Svetlana V. Berdyugina, Andrei V. Berdyugin, Dominique M. Fluri, Vilppu Piirola: First detection of polarized scattered light from an exoplanetary atmosphere, Astrophys. J. Lett., online publication 24. December 2007.

Adapted from materials provided by ETH Zurich/Swiss Federal Institute of Technology.

http://www.sciencedaily.com/releases/2007/12/071226225432.htm

New Research Promises Personalized Dietary Guidelines

ScienceDaily (Dec. 31, 2007) — Better diets for fighting diabetes, obesity and heart disease may soon be only a finger-prick away. By analyzing the unique metabolic changes in an individual's body, researchers hope to develop more personalized dietary guidelines for improving health, according to an article scheduled for the Dec. 10 issue of Chemical & Engineering News.

In the article, C&EN Assistant Editor Carmen Drahl explains that not all people respond to diet in the same way: What makes some people healthy may in fact make others worse. Metabolomics, an emerging field whose practitioners study how foods affect metabolism, may provide new tools and data for customizing today's one-size-fits-all dietary guidelines for an individual's own body, the article notes.

For example, a routine blood test that measures hundreds of compounds or more could detect shifts in a person's metabolic balance to predict future health problems. Physicians then could develop a customized diet designed to work with that patient's metabolism, while follow-up blood tests could allow caregivers to track improvements in a person's health status, the article notes.

But the field is not quite ready for prime time. Academic and industry researchers alike are hard-at-work deciphering the complex science of how foods affect metabolism with the goal of building up a framework in which sound guidance for specifying personalized diet would become possible.

The article title is "Science Diet."

Adapted from materials provided by American Chemical Society.

http://www.sciencedaily.com/releases/2007/12/071230093708.htm

Choreographers to Watch in the New Year

by Elizabeth Blair

Kumiko Tsuji of the Pittsburgh Ballet landed a spot on the cover of *Dance Magazine*'s "25 to Watch" issue this year.

Morning Edition, December 27, 2007 · For one Broadway musical as many as 1,000 dancers will show up to audition for — at most — 20 spots. What makes a dancer or choreographer stand out among the rest? A handful of taste-makers in the dance world have nominated exceptional artists who they believe will emerge from the crowd in 2008.

'Detailed, Fluid Movement'

As editor-in-chief of *Dance Magazine*, Wendy Perron estimates she sees about 20 dance performances per month. She is constantly on the look out for special talents. Perron and her staff recently finished Dance Magazine's annual "25 to Watch" issue, which covers a wide range of styles, from tango to hip-hop. One of those dancers, Pittsburgh Ballet's Kumiko Tsuji, landed a spot on the cover.

"She looks like a little springy doll so you can't miss her on stage," says Perron, who has been keeping an eye on Tsuji ever since she first saw her in 2005. This year Perron caught a glimpse of Tsuji in an impromptu solo performance of a jazzy piece by Dwight Rhoden called *Smoke 'n' Roses*.

"She just kind of slithered through it," Perron says, "She would do this little twist in her hips and then the leg would extend and then she'd be pirouetting and you wouldn't really know what happened but you'd seen this very detailed, fluid movement. She just fascinated me."

In August, Tsuji was promoted to principal dancer with the Pittsburgh Ballet.

'A Dream-Like Fantasy'

Much like a writer and director of a movie, a choreographer crafts the ideas and storylines of a dance.

Choreographer Shen Wei has a background in Chinese opera and is also a painter. Those influences make him one of today's most exciting artists, says Jodee Nimerichter, artistic director of the American Dance Festival.

"When you go to see one of his works, you're taken to a world that is a dream-like fantasy, someplace you haven't gone before," says Nimerichter.

In 2008, Shen Wei Dance Arts performs a piece called *Re-* as in "revisit" or "rediscover," inspired by Wei's travels to Tibet. Wei was awarded a MacArthur Foundation grant in 2007.

'A Unique Way of Putting It All Together'

American choreographer Alvin Ailey founded what became one of the most iconic modern dance institutions in the world. Years after Ailey's death, his company continues to churn out stars.

Lula Washington — founder of the Lula Washington Dance Theater in Los Angeles — singles out Christopher Huggins, an Ailey alumnus, as someone to watch in 2008.

"His work is very rooted in ballet, modern and jazz," Washington says. "He has a unique way of putting it all together that's breathtaking when you see it."

This spring, the junior company Ailey II premieres Christopher Huggins' newest work, *When Dawn Comes*. Huggins describes it as "a lyrical piece about searching for something better."

'Images That Have a Dream-Like Logic'

At the wildly imaginative company Pilobolus, everyone contributes choreography ideas, and the result is a stunning mix of intertwining bodies and muscular leaps. The choreography creates the illusion of a moving sculpture changing shapes seamlessly.

For choreographers to watch in 2008, Pilobolus co-founder Robby Barnett nominates the equally adventurous Israeli choreographers Inbal Pinto and Avshalom Pollak.

"When I first saw Inbal and Avshalom's work," says Barnett, "I was struck immediately by what I can only call their metabolism. It's a quick, very content-rich body of work. They dart from one idea to another and create wonderful images that have a dream-like logic."

This year Pilobolus and the Inbal Pinto Co. collaborated on an absurdist work called *Rushes*. One writer said that it is like what would happen if "Samuel Beckett met the Three Stooges."

'Vibe of the Street'

The most lucrative jobs in dance are in television — choreographing music videos and commercials. Dance coach and Tony winner Grover Dale runs answers4dancers.com, an information clearinghouse from Los Angeles. According to Dale, the hottest young dancer in Hollywood right now is a 20-year-old from Fort Collins, Colo., named Tony Testa, who is currently choreographing for Janet Jackson. Dale says Testa brings formal training in jazz, tap and ballet to his work.

"There's a freedom in his hip-hop," Dale says. "It has this vibe of the street. At the same time he installs moments in it that show real line and real technique. Hip-hop itself is morphing into so many different styles. It's getting influenced by people like Tony who have real dance training."

Testa's breakthrough career move was making a video of himself dancing his own choreography when he was 16. The film wound up in the hands of Jackson.

That stroke of luck made all the difference in a world where talent alone is not enough to get noticed.

http://www.npr.org/templates/story/story.php?storyId=17499090&ft=1&f=1008

Hi, my name's Louis, and I'm an arts addict

It's all too easy to overdose on culture. Regain control with Louis Wise's 10-step detox plan for the new year

Detox is a buzz word that, even if it makes you flinch, is firmly part of our vocabulary. We are gluttons, and not just for food and booze; we consume the arts, too. Of course, we live in a country brimming with culture, and that's no bad thing. But sometimes you need to split the wheat from the chaff. Think it over: you have the best intentions, but, each year, your cultural diary seems an accumulation of heavy costs, disappointing experiences, long slogs and a sense of d jà vu. So, here are some tips for a 2008 "arts detox": not to do less, but to do better. John Carey asked What Good Are the Arts? – and the answers weren't always reassuring. But, since we are inevitably drawn to them, let's at least try to choose the most nutritious options.

DOWNSIZE

Bigger is not always better, so consume in moderation. Blockbuster movies, exhibitions, biographies, deluxe DVD box sets: all are getting larger, in a bid to be more comprehensive and to give us that all-important value for money. But there's no virtue in being knackered by art, with the exception of the odd Ring cycle. Don't be ashamed to choose the shorter works. It could be a selection of short stories, Zadie Smith's The Book of Other People and Granta's Book of the American Short Story having recently revived the form. Or it could be a tiny exhibition – one of the best this year was the Courtauld's show on Cranach's Adam and Eve, centred on one room. If someone comments, say you're not lazy, you're gourmet.

KNOW YOUR INTERNET

Well, obviously – but how many of us stretch beyond e-mail and a few favourite sites? Among what Doris Lessing recently called the "inanities" of the net, you can find rare pearls. Film-lovers can read the very first film reviews at rottentomatoes.com (uk.rottentomatoes.com); music fans can hear all the latest music blogged via the Hype Machine (hypem.com). What's more, social networking is not solely about embarrassing photos and stalking former partners. We all know MySpace's ability to reveal new artists, but what is less well known is that there are groups on Facebook, such as the National Theatre's, that provide exclusive ticket offers.

THE WEB IS THE NEW TV

Accept what media types are now bleating in PowerPoint presentations across the world. This is not the merging of two evils. Amid the singing hamsters and self-immolating teenagers on YouTube, there's also a wealth of film, TV and music clips. Joost, a sleeker service offering a selection of channels (and better screen quality) was launched in October. Then there's the BBC's iPlayer and 4 OnDemand. Use them to pick out the TV programming that really matters and watch it at your leisure.

GO OFF PISTE

We already know that a high proportion of those who listen to Radio 4's Woman's Hour are, in fact, men. This implies either a large amount of gender confusion among Britain's middle classes, or the brilliance of the programme. For the sake of the late Mary Whitehouse, let's say it's the latter. And while Lord Reith's Radio 4 was the original example of this kind of cultural serendipity, there's no reason why other stations might not take the baton now. In a digital age, there is a wealth of stations to tune in to (through radioand iTunes), and at no cost. A personal favourite is Radio Astronomy (www.radio-astronomy.net), a station that broadcasts live sounds from our cosmos. Not many melodies, but something different, you'll agree.

ONE TO AVOID

What can only be described as "moral pornography". Take the misery memoir, in which it is somehow assumed that the amount of abuse the author received as a child correlates with the quality of their writing. Reader, it does not. The excuse was tired when the Bront s were pulling it, and it is exhausted now. This also includes big films with an apparently moral edge, such as the Brad Pitt vehicle Babel. Much as you may appreciate being sermoned by the world's most privileged people – "The world is unfair!"; "Sometimes what we do hurts other people!" – are you really enlightened? You get depressed; they go to the Oscars on the proceeds. Yes, the world is unfair.

CULTURE IS NOT DIY THERAPY

It can help the head, it can mend the heart, but it is not a navel to gaze at. Are you one of those stressed and affluent thirtysomethings who, strangely enough, like nothing more than a good book/TV programme/album about what it's like being a stressed and affluent thirtysomething? What fun. Examine instead the wealth of African literature that was applauded this year: Chimamanda Ngozi Adichie's Half a Yellow Sun or Dinaw Mengestu's Children of the Revolution. Or Romania's new wave of cinema, with the Cannes laureate 4 Months, 3 Weeks and 2 Days, or 12:08 East of Bucharest.

BUNK OFF

Weekend queues are exhausting – so take a day off and avoid them. If feeble excuses such as careers or children mean you can't take a full day, even a well-padded lunch break can do wonders for your cultural fitness. The LSE is organising a series of lunchtime arts talks at the start of 2008, called Talking Pictures (tinyurl.com/2yufol); similar events occur at the Ashmolean Museum, in Oxford, and the National Museum Cardiff.

GO SOLO

Similarly, it might be best to do some things on your own. Nothing is more self-defeating than paying a fortune to see a unique exhibition, stepping in with a friend, then having a good chinwag as you blithely mosey past a priceless set of previously unseen Caravaggios. And skipping the last two rooms to get a mochaccino and a Judith and Holofernes mouse mat in the gallery shop isn't good, either.

GET BOOKED

You may often be found frantically ripping the "Richard & Judy Book Club" sticker off the volume you've just bought, but it does not alter the fact that it was, at one point, chewed over by Richard

Madeley, Kerry Katona and Christine Hamilton at 5.45pm on Channel 4, and you thought Kerry was actually pretty perceptive, if you're honest ...

Yet nothing beats the company of a good book group. Most know this already: they are springing up all over the country at a stunning rate. World Book Day is upon us on March 6, and you can prepare by helping them select The Book to Talk About – the one you think is most likely to spark a discussion (www.worldbookday.com/spreadtheword). Still, don't go liberally tangling your lives up with the books: The Jane Austen Book Club is not a path to follow. Any group who find their lives echoing that of Fanny Price deserve a good shake and several bottles of wine.

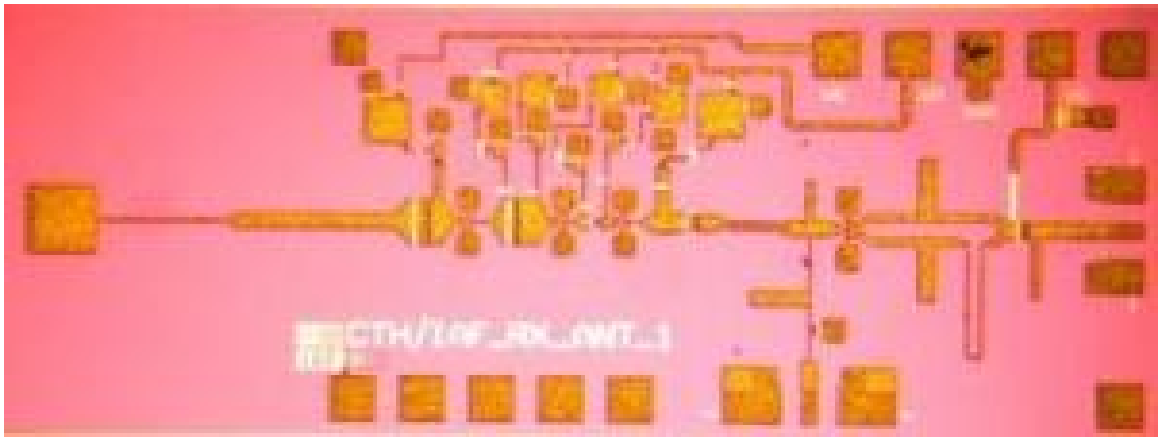
STAY SOBER

On the other hand, this being a detox programme, we should probably namecheck Winehouse, Spears and Doherty. It's alarming that as these popstrels' lives go into meltdown, they produce some of their best work. Getting into a similar state will not make you enjoy them any more. Choose your evils carefully, and make a mental note not to be ripped off by those corporate cider stalls and wine bars that permeate every festival and theatre in the country.

Finally, a postscript on merchandise. Sadly, I can't disapprove: every night, I go to sleep with a Prince pillow against my face, a memento from his gigs last summer. It's not right, I know, so it is my personal resolution to stop this habit in 2008, and it should be yours, too. Just think: for the price of that Egon Schiele apron, you could see the exhibition again; instead of buying my pillow, I could have gone to another gig. Savings such as these should help you sleep more soundly. Detoxed and refreshed, may yours be a healthy, enlightened 2008.

http://entertainment.timesonline.co.uk/tol/arts_and_entertainment/film/article3099640.ece

Integrated Receiver For High Frequency Applications On A Tiny Chip



The receiver is just a few square millimetre and is suitable for new safety systems, image sensors, and radio communication for high bitrates. The receiver is an electronic circuit including antenna, low noise amplifier, and frequency converter monolithically integrated on gallium arsenide. (Credit: Image courtesy of Chalmers University)

ScienceDaily (Dec. 31, 2007) — Researchers at Chalmers University in Sweden have succeeded in combining a receiver for high frequencies with an antenna on a small chip.

The receiver is just a few square millimetre and is suitable for new safety systems, image sensors, and radio communication for high bitrates. The receiver is an electronic circuit including antenna, low noise amplifier, and frequency converter monolithically integrated on gallium arsenide."This is a breakthrough in our research. Our result opens the possibility to manufacture systems for very high frequencies within the so called 'THZ-electronics' area, to a relatively low cost. In the next phase of this project even more functions can be integrated on the same chip", according to Herbert Zirath, professor at the department of Microwave Electronics.

This circuit can be used, for instance, in radiometer systems in future safety systems looking for concealed weapons without personal intrusive search. Other applications for this circuit are imaging sensors that can look through darkness, smoke or fog. This is an important safety function for vehicles such as cars and aircrafts. "Thanks to this technology, we now have the possibility of integrating imaging sensors by using circuits of a few square millimetre which is much smaller that the present technology at a lower cost. For automotive applications such as cars, aircrafts and satellites, the size and weight is of utmost importance. The present systems consist of many pieces and demands several cubic decimetres volume", says Herbert Zirath.

The new circuit is designed to work at the frequency of 220 gigahertz, but this is not an upper limit. According to professor Zirath, the technology can be used up to and above 300GHz in a near future.

The technology is also interesting for wireless data communication because, due to the very high bandwidth, data rate well above 10 Gbit/s is possible to realize in future radio links. Together with Omnisys Instruments in Gothenburg, we are also implementing receivers for future earth observation satellites for environmental studies and weather forecasts at frequencies 118 and 183 GHz, using the same technology. This work is the results of a co-operation between Chalmers, Saab Microwave Systems, Omnisys Instruments AB, FOI, The Fraunhofer Institute IAF in Freiburg and FGAN, Germany, within the project "nanoComp".

Adapted from materials provided by Chalmers University.

http://www.sciencedaily.com/releases/2007/11/071128092106.htm

Hazards Of CT Scans Overstated, According To Physicist

ScienceDaily (Dec. 31, 2007) — Concerns over possible radiation effects of CT scans detailed in a report November 29 in the New England Journal of Medicine should not scare people away from getting medically needed CT scans, as the scans play a critical role in saving the lives of thousands of people every day, according to an official with the American Association of Physicists in Medicine (AAPM).

In a statement issued November 30, Dr. John M. Boone, chairman of AAPM's science council, says that the "science community remains divided" over the radiation dose effects of CT scans and that the findings in the Journal article were based on "flawed assumptions" and were not conclusive. While agreeing with the Journal article's authors, Drs. David Brenner and Eric Hall, that CT scans should only be used judiciously and when medically necessary, Boone says CT experts in the AAPM "feel that much of the message of this article may be misconstrued or misunderstood by the press or by the public who may not be experts in CT."

Brenner and Hall, in their article, said that while they save lives and speed diagnosis, the 62 million CT scans done in the United States each year may soon be responsible for 2 percent of all cancers. They further suggested that their "back of the envelope" estimate is that about a third of all CT scans are unnecessary.

Boone responds in his statement that the assumptions about the hazards of CT scan radiation exposure "remain controversial, even among experts in radiation biology." The method of determining risk used in the article is derived from Japanese citizens exposed to large amounts of radiation during the atomic bomb attacks on Hiroshima and Nagasaki in World War II, and the extrapolation of those extremely high radiation exposure rates down to the low CT exposures "remains very controversial," Boone says.

Another "significant flaw" in the article was the attempt to compare the Japanese bomb victims to "patients receiving CT in the US in 2007," Boone says. The article "did not correct for the many underlying confounding age dependent variables that differ between (the Japanese population) and older Americans, such as the incidence of obesity and diabetes."

Boone encourages patients who have had CT scans, or are slated for CT exams in the next few weeks, to "discuss with their physicians not only the radiation risks of the CT examination, but the risks of not having the diagnostic information that CT provides."

While Boone notes that Brenner and Hall are "esteemed scientists and respected experts in radiation risk . . . the conclusions of the Brenner article are based on statistics and many statistical assumptions (and not) on the actual observation of somebody dying from having a CT scan."

The complete statement of Dr. Boone, the vice chairman of radiology at the University of California, Davis, Medical Center, is available at: http://www.aapm.org/announcements/CTScans.asp

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

http://www.sciencedaily.com/releases/2007/11/071130173233.htm

New Ship Breaks New Grounds, And Old Ice

ScienceDaily (Dec. 31, 2007) — It can crush ice sideways and stay precisely on station to an accuracy of a metre. It can drill a hole 1,000 metres deep into the seabed while floating above 5,000 metres of ocean and it can generate 55 megawatts of power. So far, Aurora Borealis is the most unusual ship that has never been built, and it represents a floating laboratory for European science, a breakthrough for polar research and a very big headache for international lawyers.

Aurora Borealis will be the first ever international ship, the brainchild of the European Science Federation, the Alfred Wegener Institute for Polar and Maritime Research in Germany and the Germany Federal Ministry of Research and Education. Russia has announced that it will be a partner in launching this state-of-the-art research vessel, but other European nations may soon join the project. But a European ship represents a metaphorical voyage into unknown waters, the ESF Science Policy Conference learned.

“We do not have a European flag at the moment so one nation has to be responsible. And if it is internationally owned, you can imagine the difficulty,” said Nicole Biebow, manager of the project, and a scientist at the Alfred Wegener Institute. “We have to agree where this ship should have its home port. And what happens if there is an accident? Who is responsible if you have an oil spill on the ice, for instance?”

The ice over the polar seas masks millions of years of the planet’s history: drilling is difficult in freezing conditions. Aurora Borealis will be the world’s first icebreaker that is also a drilling ship. This sets unusual challenges for marine engineers: a vessel poised on top of 5000 metres of drilling rig cannot afford to move very much in any direction. But ice drifts, and currents and winds can alter in moments. So the ship will be designed not just to break the ice as it moves forward and astern, but also to port and starboard.

“We had some early ice tanks tests and they came up with a design that is able to break ice sideways,” said Paul Egerton, head of the European Polar Board within the European Science Federation. “As the ice continually presses against the side of the ship, the pieces of ice go underneath the hull and are washed away by the propulsion system. There is also a kind of damping system so the ship can raise itself up and down vertically to break the ice. It has a propeller that can turn 360 degrees, linked to satellite navigation. A lot of the cruise ships now have this so they can navigate in a very small area. But the propeller also has to break ice: it has to be strengthened.”

Not only will the diesel-electric ship be the floating equivalent of a 55 megawatt power station, it will be an intellectual powerhouse as well. It will be probe the role of polar waters in global climate change. Drill cores from the sea floor could answer questions about the geological history of the Arctic ocean, and other instruments will measure the transport of contaminants through the air, water and ice. The vessel could be home to 120 people, more than half of them scientists who need to go to sea to study the ice, the ocean beneath and the history of the deep sea floor.

It will be equipped with two "moon pools" in the bottom of the hull to give direct access to the open water beneath the ice, so that drillers can work in freezing conditions and biologists can launch underwater vehicles to study the mysterious processes that trigger an explosion of life in the polar seas every spring. The design and preparation of Aurora Borealis will continue until 2011. Builders could start assembling the hull in 2012, it could be cruising the oceans from 2014 – and it could begin answering some of the great questions of ocean science for the next 40 years.

Adapted from materials provided by European Science Foundation.

http://www.sciencedaily.com/releases/2007/11/071130101036.htm

Which Intervention Would Do The Most To Improve The Health Of The Extreme Poor?

ScienceDaily (Dec. 31, 2007) — For PLoS Medicine's special issue on poverty and health, the journal asked thirty commentators, including some of the world's most respected global health experts, to name the one intervention that would improve the health of those living on less than $1 a day.

The collected responses--from health researchers and activists, journalists, academics, and communities living in poverty--highlight effective, low tech, and remarkably cheap ways to make a profound difference to the lives of the poorest people on the planet.

Paul Farmer (Partners in Health and Harvard University) chose training of village health workers as the most effective intervention. "If we train village health workers, and make sure they're compensated," he said, "then the resources intended for the world's poorest--from vaccines, to bed nets, to prenatal care, and to care for chronic diseases like AIDS and tuberculosis--would reach the intended beneficiaries."

Other commentators, including Mushtaque Chowdhury (Bangladesh Rural Advancement Committee, Dhaka, Bangladesh) and Murugi Murekio (a health reporter in Ethiopia) stressed the crucial role of hunger alleviation. In Ethiopia, said Murekio, "antiretrovirals are free, but mostly women can barely afford a meal a day and so this diminishes their capacity to live healthily with HIV."

Jeffrey Sachs (Director of the United Nations Millennium Project) focused his response on prevention and treatment of malaria: "In tropical Africa, a mass distribution of free long-lasting insecticide-treated bed nets to fight malaria accompanied by free access to artemisinin-based combination anti-malaria medicines." But he added that he has "spent years objecting to posing the question this way, since at low cost we could achieve major health advances through more comprehensive approaches."

Many of the responses note the importance of the rich world fulfilling its obligations to the global poor, while other commentators highlighted the empowerment of women ("There's a saying that when you educate a woman you have educated a whole village," said reporter Rosebell Kagumire in Uganda), promotion of breastfeeding, provision of clean water, and childhood vaccination. Members of poor rural communities in Ayacucho, Peru, talked about the importance of housing, food, family, and social interactions--a view of health promotion that goes far beyond a strictly biomedical approach.

In a related Editorial, the PLoS Medicine editors argue that the global community "easily has the financial and technical means to scale up all of these interventions immediately--it has more than enough resources, for example, to distribute insecticide-treated bed nets and artemisinin-based combination therapy for malaria, train community health workers, promote breastfeeding, and vaccinate all children."

Citation: Yamey G on Behalf of the Interviewees (2007) Which single intervention would do the most to improve the health of those living on less than $ per day? PLoS Med 4(0): e303.

Adapted from materials provided by Public Library of Science.

http://www.sciencedaily.com/releases/2007/10/071022203138.htm

Cardiac Stem Cell Therapy Closer To Reality

ScienceDaily (Dec. 30, 2007) — Since the year 2000, much has been learned about the potential for using transplanted cells in therapeutic efforts to treat varieties of cardiac disorders. “Cardiac stem cell therapy involves delivering a variety of cells into hearts following myocardial infarction or chronic cardiomyopathy,” says Amit N. Patel, MD, MS, director of cardiac cell therapy at the University of Pittsburgh Medical Center and lead author of an overview and introductory article, Cardiac Stem Cell Therapy from Bench to Bedside. “Many questions remain, such as what types of cells may be most efficacious. Questions about dose, delivery method, and how to follow transplanted cells once they are in the body and questions about safety issues need answers. The following studies, contribute to the growing body of data that will move cell transplantation for heart patients closer to reality.”

According to Patel, special editor for this issue, suitable sources of cells for cardiac transplant will depend on the types of diseases to be treated. For acute myocardial infarction, a cell that reduces myocardial necrosis and augments vascular blood flow will be desirable. For heart failure, cells that replace or promote myogenesis, reverse apoptopic mechanisms and reactivate dormant cell processes will be useful.

“Very little data is available to guide cell dosing in clinical studies,” says Patel. “Pre-clinical data suggests that there is a dose-dependent improvement in function.”

Patel notes that the availability of autologous (patient self-donated) cells may fall short.

Determining optimal delivery methods raise issues not only of dose, but also of timing. Also, assessing the fate of injected cells is “critical to understanding mechanisms of action.”

Will cells home to the site of injury? Labeling stem cells with durable markers will be necessary and new tracking markers may need to be developed.

Improved cell survival drugs

Adult bone marrow-derived mensenchymal stem cells (MSCs) have shown great signaling and regenerative properties when delivered to heart tissues following a myocardial infarction (MI). However, the poor survival of grafted cells has been a concern of researchers. Given the poor vascular supply after a heart attack and an active inflammatory process, grafted cells survive with difficulty. Transmyocardial revasularization (TMR), a process by which channels are created in heart tissues by laser or other means, can enhance oxygenated blood supply.

“We hypothesized that using TMR as a scar pretreatment to cell therapy might improve the microenvironment to enhance cell retention and long-term graft success,” said Amit N. Patel, lead author of a study titled Improved Cell Survival in Infarcted Myocardium Using a Novel Combination Transmyocardial Laser and Cell Delivery System. “TMR may act synergistically with signaling factors to have a more potent effect on myocardial remodeling.”

Patel and colleagues, who used a novel delivery system to disperse cells in the TMR-generated channels in an animal model, report significant cell survival in the TMR+Cell group versus Cells or TMR alone. The researchers speculated that there was an increase in local production of growth factors that may have improved the survival of transplanted cells.

Stem cells depolarize

Recent studies have suggested that there are stem cells in the heart. In this study, researchers engineered mesenchymal stem cells (MSC) to over express stromal cell-derived factor-1 (SDF-1), a chemokine.

"Our study suggests that the prolongation of SDF-1 expression at the time of an acute myocardial infarction (AMI) leads to the recruitment of what may be an endogenous stem cell in the heart," says Marc Penn, MD, PhD, director of the Skirball Laboratory for Cardiovascular Cellular Therapeutics at the Cleveland Clinic Foundation. "These cells may contribute to increased contractile function even in their immature stage."

In the study titled SDF-1 Recruits Cardiac Stem Cell Like Cells that Depolarize in Vivo, researchers concluded that there is a natural but inefficient stem cell-based repair process following an AMI that can be manipulated through the expression of key molecular pathways. The outcome of this inefficient repair can have a significant impact on the electrical and mechanical functions of the surviving myocardium.

Grafting bioartifical myocardium for myocardial assistance

While the object of cell transplantation is to improve ventricular function, cardiac cell transplantation has had limited success because of poor graft viability and low cell retention. In a study carried out by a team of researchers from the Department of Cardiovascular Surgery, Pompidou Hospital, a matrix seeded with bone marrow cells (BMC) was grafted onto the infarcted ventricle to help support and regenerate post-ischemic lesions.

"Our study demonstrated that bone marrow cell therapy associated with the surgical implantation onto the epicardium of a cell-seeded collagen type 1 matrix prevented myocardial wall thinning, limited post-ischemic remodeling and improved diastolic function," says Juan Chachques, MD, PhD, lead author for Myocardial Assistance by Grafting a New Bioartificial Upgraded Myocardium (MAGNUM Clinical Trial): One year follow-up.

"The use of the biomaterial appears to create a micro atmosphere where both exogenous and endogenous cells find an optimal microenvironment to repair tissues and maintain low scar production," explains Chachques.

According to Chachques, the favorable effects may be attributed to several mechanisms. The BMC seeded in the collagen matrix may be incorporated into the myocardium through epicardial channels created at the injection sites. Too, the cell-seeded matrix may help prevent apoptosis.

"This biological approach is attractive because of its potential for aiding myocardial regeneration with a variety of cell types," concluded Chachques.

Those cell types include skeletal myoblasts, bone marrow-derived mensenchymal stem cells, circulating blood-derived progenitor cells, endothelial and mesothelial cells, adipose tissue stem cells and, potentially, embryonic stem cells.

The full research articles are published in Cell Transplation (Vol.16 No. 9).

Adapted from materials provided by Cell Transplantation.

http://www.sciencedaily.com/releases/2007/12/071227183950.htm

New Ingredients In Drug-like Anti-aging Products Improve Skin

ScienceDaily (Dec. 30, 2007) — Cosmecueticals, beauty aids that reportedly work like prescription drugs, are providing new ways to treat aging skin. A study recently published in the Journal of Cosmetic Dermatology explores a variety of new ingredients in cosmeceuticals that provide a visibly noticeable improvement in maturing skin.

The most dramatic and apparent signs of aging include the lack of skin surface regularity, formation of wrinkles, and increased presence of abnormal pigmentation. Zoe Diana Draelos, MD, of Dermatology Consulting Services, High Point, North Carolina, assessed the ingredient efficacy in a variety of cosmeceuticals on each of these areas of aging skin.

Draelos found that skin surface irregularity can be improved through the topical application of niacin, while the appearance of fine lines can be diminished through the application of moisturizers containing engineered peptides and over-the-counter retinoids. Skin pigmentation can become more regular with the use of photoprotective ingredients. Furthermore, combining cosmeceutical ingredients in a moisturizing agent can magnify benefits and improve skin appearance.

“Evidence-based cosmeceutical ingredients can provide anti-aging benefits,” Draelos concludes. “This new generation of cosmeceuticals can provide valuable skin benefits.”

Journal reference: Zoe Diana Draelos MD (2007).The latest cosmeceutical approaches for anti-aging. Journal of Cosmetic Dermatology 6 (s1), 2–6. doi:10.1111/j.1473-2165.2007.00313.x

Adapted from materials provided by Blackwell Publishing Ltd..

http://www.sciencedaily.com/releases/2007/12/071228215557.htm

New Therapy Reduces Mortality In Patients With Severe COPD

ScienceDaily (Dec. 30, 2007) — Patients with severe COPD may benefit more from therapy that combines salmeterol and fluticasone [SFC] than treatment with tiotropium, according to results from a long-term, multi-center study that directly compared the two therapies.

"Although we found no difference in the overall rate of exacerbations between treatment groups, SFC treatment was associated with better health status, fewer patient withdrawals, and a lower mortality rate than occurred during tiotropium therapy," said lead author if the study, Jadwiga Wedzicha, M.D., of the Royal Free & University College Medical School in London

This was the first large-scale trial to directly compare the two different treatment approaches. The researchers recruited 1,323 patients with severe COPD and randomized them to receive one of two treatments--either SFC or tiotropium--for two years. They analyzed number and type of exacerbations, health status as measured by the St. George's Respiratory Questionnaire (SGRQ), lung function (post-dose forced expiratory volume in one second) and study withdrawal rate. The study was double-blinded and double-dummy controlled, and all patients underwent identical intensification of treatment before beginning the trial to standardize their clinical conditions.

While exacerbation rates between the two treatment groups were statistically indistinguishable, there were differences in the treatment that the exacerbations required. Oral corticosteroids were used more often to treat the tiotropium group, whereas patients on SFC required antibiotics more frequently.

"This finding provides indirect evidence that these treatments affect apparently similar patients in different ways that affect clinical judgment," wrote Dr. Wedzicha in the article. "This difference warrants further study to determine the factors that affect therapeutic choice."

There was also a small but statistically significant improvement in the SGRQ scores for patients on SFC. While this difference did not reach the standard of clinical significance, it did indicate that overall, SFC patients experienced a slightly higher overall quality of life and a post-hoc analysis revealed that more patients on SFC had a clinically significant improvement in health status than those on tiotropium therapy

Most strikingly, mortality was significantly lower in the SFC group during the study period, even though the trial was not powered to detect such a difference. There was more than a 50 percent reduction in the risk of on-therapy all-cause death at any time during the study period for the SFC patients. Patients undergoing SFC treatment were also significantly less likely to withdraw from the trial than others.

"Our study raises several important questions," noted Dr. Wedzicha. "Why is there a difference between treatments" What is the biological basis of the differential effect on exacerbations, and is it related to the difference in mortality between the two treatments?"

Despite no difference in the overall rate of exacerbations between treatment groups, SFC treatment was associated with better health status, fewer patient withdrawals, and a lower mortality rate than occurred during tiotropium therapy and this may have important implications for the clinical management of COPD.

The article "Investigating New Standards for Prophylaxis in Reducing Exacerbations," is published in the first issue for January of the American Journal of Respiratory and Critical Care Medicine, published by the American Thoracic Society.

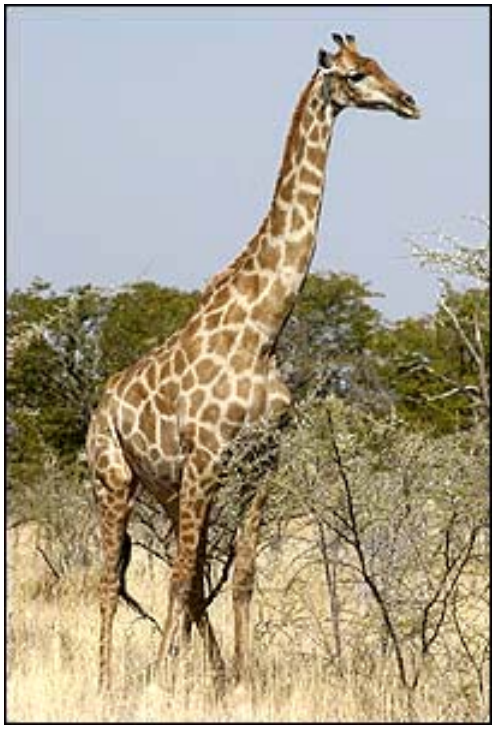
Adapted from materials provided by American Thoracic Society.

http://www.sciencedaily.com/releases/2007/12/071228215629.htm

Not one but 'six giraffe species'

Anna-Marie Lever
Science and nature reporter, BBC News

The world's tallest animal, the giraffe, may actually be several species, a study has found.



A report in BMC Biology uses genetic evidence to show that there may be at least six species of giraffe in Africa.

Currently giraffes are considered to represent a single species classified into multiple subspecies.

The study shows geographic variation in hair coat colour is evident across the giraffe's range in sub-Saharan Africa, suggesting reproductive isolation.

"Using molecular techniques we found that giraffes can be classified into six groups that are reproductively isolated and not interbreeding," David Brown, the lead author of the study and a geneticist at the University of California Los Angeles (UCLA), told BBC News.

"The results were a surprise because although the giraffes look different, if you put them in zoos, they breed freely."

Spots and maple leaves

The study also found that the two giraffe subspecies that live closest to each other - the reticulated giraffe (Currently: *Giraffa camelopardalis reticulate*) in North Kenya, which has reddish round spots; and the Maasai giraffe (Currently: *Giraffa camelopardalis tippelskirchi*) in South Kenya - separated 0.5 to 1.5 million years ago.

SOME GIRAFFE FACTS
The familiar animals can grow up to 6m (20ft) in height

Their remarkable tongues grow up to 45cm (18in) long
Adult giraffes can weigh in excess of 1,000kg (2,200lbs)
Long legs enable speeds of up to 35miles/hour (55km/h)

These results are interesting as giraffes are highly mobile animals. They frequently range over several hundred square kilometres and are capable of long distance movements of some 50-300km (30-170 miles), which means different populations are likely to meet.

Mr Brown added: "There are no rivers or forests to prevent breeding, but some evolutionary process is keeping the two groups reproductively separated."

The researchers have suggested this separation may be being driven by ecological differences, such as differences in vegetation at a micro-level, or even sexual selection.

"The female Maasai giraffe may be looking at the male reticulated giraffe and thinking, 'I don't look like you; I don't want to mate with you'," Mr Brown explained.

Need for conservation

Mr Brown also highlighted the conservation implications of this study: "Lumping all giraffes into one species obscures the reality that some kinds of giraffe are on the brink.

"Some of these populations number only a few hundred individuals and need immediate protection."

Over the past decade there has been a 30% drop in giraffe numbers, with total numbers under 100,000.

It is hoped that classifying current subspecies as fully fledged species will help inform conservation plans to save the most threatened populations. These include:

The Nigerian giraffe (Currently: *Giraffa camelopardalis peralta*). The last 160 individuals are found in West and Central Africa.
The Rothschild giraffe (Currently: *Giraffa camelopardalis rothschildi*). The last few hundred can only be found in a few protected areas in Kenya and in Murchison Falls National Park, Uganda.

The animals' status is currently under review by an International Giraffe Working Group (IGWG). Its evidence will inform the IUCN Red List of threatened and endangered species.

The genetic research was supported by the US-based Wildlife Conservation Society.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/science/nature/7156146.stm

Published: 2007/12/21 23:38:27 GMT

Beetles and dinos living together

Anna-Marie Lever
Science and nature reporter, BBC News

Most modern day groups of beetles have been around since the dinosaurs.

It was thought that today's beetle lineages evolved alongside the arrival of flowering plants, some 140 million years ago.

But researchers, writing in the journal Science, have pre-dated the creatures appearance by 110 million years, back to the Jurassic period.

Very soon after beetles originated, they evolved into the lines that persist today, researchers say.

Co-author Dr Johannes Bergsten from Imperial College London, UK, told BBC News: "We found that five small families, that are the oldest lineages to the rest of the major beetle group, go back over 250 million years."

There are more than 300,000 species of beetles on Earth, accounting for a quarter of all living things.

The reason for this large number of beetle species has been debated for many years and never resolved.

Co-evolution with plants?

Prior to this study, the diversification of beetles was attributed to the arrival of flowering plants, in the Cretaceous Period (145-65 million years ago).

Dr Bergsten said: "Each species of plant could be a separate niche for a species of beetle. So the more plants there are, the more niches there are for different species of beetles."

However, the study found that more than 100 families of today's beetles were already present before that.

What causes this high speciation rates remains unknown and continues to puzzle researchers. "We don't have the answer to that," Dr Bergsten says.

Beetles have displayed an exceptional ability to seize new habitats and have developed novel ways of feeding to exploit different vegetation.

Lead author Professor Volger added: "Unlike the dinosaurs which dwindled to extinction, beetles survived because of their ecological diversity and adaptability."

Key innovation

This ability is mainly attributed to their key innovation of a hard casing. "[Beetles] were able to exploit very narrow niches, live under rock and live under bark, and still protect their hind membranous wings so they could disperse and exploit habitats," Dr Bergsten explained.

The scientific team believes that understanding the evolution of beetles is an important part of understanding the natural world.

"If we try to understand how beetles diversified we have understood at least one fourth of how the biodiversity of the world came about," Dr Bergsten said.

"Beetles have a good track record of being around for some 300 million years, and are still prosperous. I think they will be around for a long time to come."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/science/nature/7154642.stm

Published: 2007/12/21 23:42:27 GMT

300 children saved by new vaccine
Over 300 children have avoided serious illness since the introduction of the pneumococcal vaccine in England 12 months ago, estimates show.

The jab, given to infants at two and four months with a booster dose at 13 months of age, protects against pneumonia and meningitis.

Experts are calling for more children to be vaccinated, as one in six remain unvaccinated.

Health Protection Agency data show that 86% of children have received the jab.

It is so important for a child to get all their vaccinations
Director of Immunisation Professor David Salisbury

The government target is 95% uptake.

Director of Immunisation Professor David Salisbury said: "That about 300 young children have already been saved the trauma of suffering from a major illness like meningitis shows the importance of vaccinating children against serious illness.

"It is so important for a child to get all their vaccinations and this success story should serve as a reminder to check that your child's vaccines are up to date."

He said parents should not be put off immunising their children.

"We do not see serious side effects caused by this vaccine."

Sue Davie, chief executive at The Meningitis Trust, said: "Pneumococcal meningitis is a devastating disease and vaccination is the only way to prevent it. That means it is important for parents to immunise their children."

Younger children, particularly those under one year of age, are particularly vulnerable to pneumococcal infection. Of those young children who survive pneumococcal meningitis, up to half are left with permanent disability, including deafness, intellectual impairment, speech and language problems, paralysis, cerebral palsy, epilepsy and blindness.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7155563.stm

Published: 2007/12/21 11:30:33 GMT

Sea cucumber 'new malaria weapon'
Sea cucumbers could provide a potential new weapon to block transmission of the malaria parasite, a study suggests.

The slug-like creature produces a protein, lectin, which impairs development of the parasites.

An international team genetically engineered mosquitoes - which carry the malaria parasite - to produce the same protein in their gut when feeding.

The PLoS Pathogens study found the protein disrupted development of the parasites inside the insects' stomach.

> **Ultimately, one aim of our field is to find a way of genetically engineering mosquitoes so that the malaria parasite cannot develop inside them**
> Professor Bob Sinden
> Imperial College London

Malaria causes severe illness in 500 million people worldwide each year, and kills more than one million.

It is estimated that 40% of the world's population are at risk of the disease.

To stimulate the mosquitoes to produce lectin, the researchers fused part of the gene from the sea cucumber which produces the protein with a gene from the insect.

The results showed that the technique was effective against several of the parasites which cause malaria.

Lectin is poisonous to the parasites when they are still in an early stage of development called an ookinete.

Usually, the ookinetes migrate through the mosquito's stomach wall, and produce thousands of daughter cells which invade the salivary glands, and infect a human when the mosquito takes a blood meal.

But when exposed to lectin the ookinetes are killed before they can start their deadly journey.

Work left

Researcher Professor Bob Sinden, from Imperial College London, said: "These results are very promising and show that genetically engineering mosquitoes in this way has a clear impact on the parasites' ability to multiply inside the mosquito host."

However, he said much more work still had to be done before the technique could be used to curb the spread of malaria.

"Although the sea cucumber protein significantly reduced the number of parasites in mosquitoes, it did not totally remove them from all insects.

"At the current stage of development, the genetically modified mosquitoes would remain dangerous to humans.

"Ultimately, one aim of our field is to find a way of genetically engineering mosquitoes so that the malaria parasite cannot develop inside them."

Professor Sanjeev Krishna, an expert in malaria at St George's Hospital Medical School, London, said new treatments for malaria were vital, as there was some sign that the parasites which cause the disease were developing resistance to the current artemisinin drugs.

He said: "This is a very important first step in developing a potential new way to control this infection."

Dr Ron Behrens, of the London School of Hygiene and Tropical Medicine, said the technique showed promise in theory - but he warned that introducing genetically modified mosquitoes could be fraught with practical difficulties.

"You would have to get the modified version to become the predominant species, and that has never been done in any setting before," he said.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7155398.stm

Published: 2007/12/23 00:02:01 GMT

Asthma risk 'rises in menopause'
Women who are going through the menopause have a higher risk of developing respiratory diseases such as asthma, researchers say.

In a study of more than 1,200 women, those who had not had a period in the past six months had worse lung function and more respiratory symptoms.

The findings, thought to be due to the effects of falling oestrogen levels, were most pronounced in thin women.

The study is published in the Journal of Allergy and Clinical Immunology.

An international team of researchers measured lung function and asked questions about respiratory health.

They also measured hormone levels in the women who were aged between 45 and 56 years.

The results were similar when the analysis was limited to women who had never smoked.

Weight

Women with a body mass index lower than 23 had four times the risk of respiratory symptoms.

> **We do know that some women find that their asthma gets worse when they are in a period of hormonal change so it is important to keep an eye on your asthma at these times**
> Dr Victoria King, Asthma UK

Problems were also pronounced in women who were overweight.

Although oestrogen is reduced in all women following menopause, thinner women have the lowest amounts, the researchers said.

At the menopause, the fat cells become the main source of oestrogen, and those who have more fat cells will have higher levels of the hormone, which seems to protect the lungs.

But in very overweight women, it appears that the protective effects of oestrogen are outweighed by other factors.

Dr Francisco Gomez Real, from the University of Bergen, Norway, said: "Clinicians should be aware of increased asthma risk and lower lung function in women reaching menopause.

"These problems appeared to be less pronounced among women with a BMI of 25."

Dr Victoria King, research development manager at Asthma UK, said: "Research is beginning to show a link between menopause and asthma however it is too early to say exactly how menopause affects asthma symptoms and who is likely to be affected.

"What is interesting about this study is that it supports previous findings which show that the effect the menopause may have on lung function is greater in lean women that have a lower body mass index.

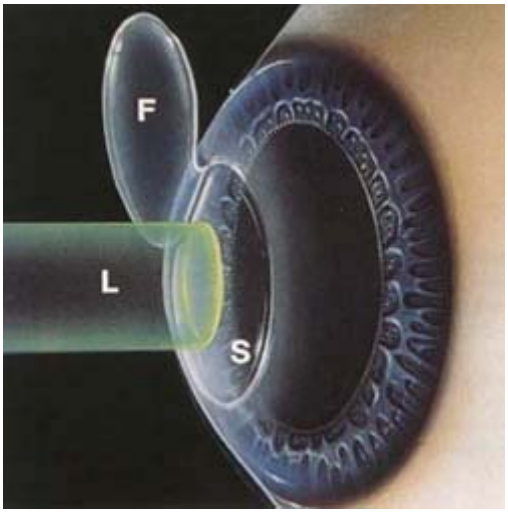
"We do know that some women find that their asthma gets worse when they are in a period of hormonal change so it is important to keep an eye on your asthma at these times and discuss any problems you have with your doctor or asthma nurse specialist."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7156280.stm

Published: 2007/12/24 01:33:28 GMT

LASIK Works Well, According To Long-term Study Of Highly Myopic Patients

ScienceDaily (Dec. 30, 2007) — Laser surgery to correct vision problems has been in use since the early 1990s. Photorefractive Keratotomy (PRK) is typically used to correct low to moderate myopia, while laser in-situ keratomileusis (LASIK) is preferred for high myopia corrections. Although over 18 million LASIK procedures have been performed worldwide, there is still some controversy regarding the maximum correction possible and efficacy with this technique.



Researchers from Miguel Hernandez University, Medical School, Alicante, Spain; and Ankara University School of Medicine, Ankara, Turkey report on a study* of high myopia patients ten years after LASIK surgery. The findings show that LASIK for myopia over -10 D is a safe and effective procedure in the long-term.

196 high myopic eyes of 118 patients, preoperatively needing at least 10 diopter (10 D) corrections to achieve 20/20 vision, were evaluated ten years following surgery. Uncorrected vision was 77% of best-corrected vision (BSCVA) before surgery. BSCVA improved 1 line. Only 5% of eyes lost more than 2 lines of BSCVA and 40% avoided the use of glasses. 119 (61 %) of eyes were within ± 2.00 Diopters at 10 years. Only 2 eyes (1%) developed corneal ectasia. The retreatment rate was 27%.

According to lead investigator Jorge L. Alió, "These results are extremely encouraging considering that this refractive correction implies the maximum limit of application of this technique. This study has allowed us to demonstrate that, in spite of the prejudices about the limits of LASIK technique, the results regarding predictability, efficacy and safety for high myopic patients are very good in the long term. The optimum limit of predictability for this technique is around 10 D of myopia. This reference study, with a long time perspective, allows us to know the safety, precision and limits of LASIK in highly myopic eyes."

*The article is "Ten-year Follow-up of Laser In Situ Keratomileusis for High Myopia" by Jorge l. Alió, Orkun Muftuoglu, Dolores Ortiz, Juan Jose Pérez-Santonja, Alberto Artola, Maria-Jose Ayala, Maria Jose Garcia, and Gracia Castro De Luna. It appears in the American Journal of Ophthalmology, Volume 145, Issue 1, (January 2008), and is published by Elsevier.

Adapted from materials provided by Elsevier Health Sciences.

http://www.sciencedaily.com/releases/2007/12/071228215645.htm

Fisheries Should Be Regarded As Part Of Maritime Environment, Experts Urge

To have an sustainable fishery, there has to be a balance between ecological and economic interests. (Credit: André Künzelmann/UFZ)

ScienceDaily (Dec. 28, 2007) — Helsinki/Leipzig. Professional fishery is in many sea areas a serious ecological threat to the maritime environment. On the other hand, changes in the environment, e.g. the increase of fish-eating animals like seals and cormorants, may impact the fisheries. One of the new guiding principles of political decision-making in fishery issues is that a holistic "ecosystems approach" should be used instead of traditional protection of fish populations.

The international research project IBEFish, which was led by the Finnish Environment Institute, surveyed the role of participation and interaction in decision-making in new circumstances.

The environmental perspective has already been established in legislation and international conventions on fisheries. However, on the implementation level the ecosystems approach is still in an elementary phase. If fisheries are to be sustainable in the future, new decision-making approaches and structures are needed for ecosystems threatened by fisheries and for regions in which environmental changes threaten the profitability of fisheries. By such measures it is possible to support interaction between various interests and perspectives and to promote versatile use of new information about the maritime environment.

The new ecosystems approach to fishery regulation is a great challenge. Fisheries must be regarded in relation to numerous other uses of maritime resources. The interactions between those other uses, as well as many other ecological, economical and social factors, must be taken into account. The observations on the role of participation in decision-making on fishery issues proved that major decision-makers and actors can be found in several different sectors and on all levels - from the EU to the local level.

The decision-making process is therefore very complicated, and such processes as production and propagation of information, or distribution of costs, may be difficult to organize. As a consequence, the

development of constructive interaction may be retarded, and the credibility of politicians who speak for the protection of marine ecosystems may suffer.

The IBEFish project was funded by the European Union´s 6th framework programme for research. The project was carried out by SYKE and its partners, the universities in Aalborg, Gothenburg and Newcastle, and the Helmholtz Centre for Environment Research (UFZ) in Germany.

Adapted from materials provided by Helmholtz Association of German Research Centres.

http://www.sciencedaily.com/releases/2007/12/071220103659.htm

On Architecture: AIA slams Seattle, but we pretty much deserve it

Last updated December 24, 2007 8:54 a.m. PT

By LAWRENCE W. CHEEK
SPECIAL TO THE P-I

Last month, an out-of-town jury spent a whirlwind weekend reviewing new Seattle buildings for the local American Institute of Architects' annual honor awards. They delivered some sobering judgments:

"For a city with such strengths -- education, culture, natural environment, wealth -- the jury hoped to see more evidence of leadership and risk, and less comfort with an already well-digested regional design language. Great architecture occurs when a great designer creates new opportunity."

Well, first, consider the source: one of the three jurors was Joshua Prince-Ramus, who in concert with Rem Koolhaas co-designed our dysfunctional Central Library. It certainly bristles with leadership and risk, but the more we use the building, the more obvious its deficiencies and perversities become.

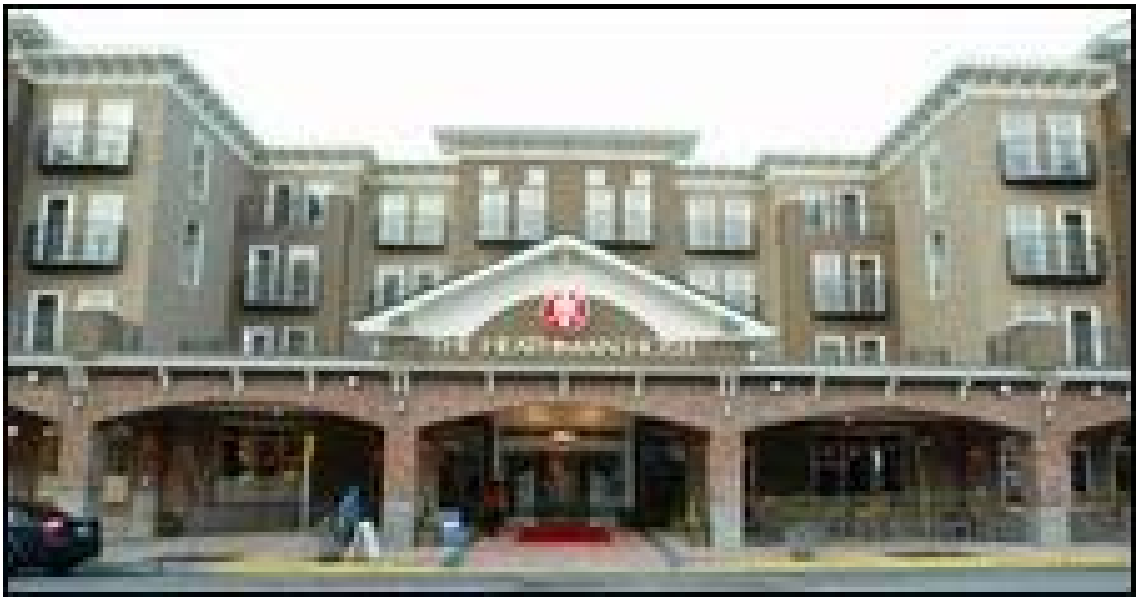
But if you take your own year's-end tour of new buildings in Seattle and its environs, it's hard to argue with the jurors' harsh assessment. While some good and interesting buildings are rising, one comes away with the feeling that architects are indeed failing to risk and lead.

GRANT M. HALLER / P-I
Belltown's Mosler Lofts is the most provocative residential high-rise in Seattle since WWII.

It's not that we need innovation for entertainment or notoriety -- we have the library and EMP for that -- but for the sake of solving real problems, such as unaffordable housing. And for shaping the city's identity in a distinctive and environmentally appropriate way, so we don't just look like a watery Dallas.

Let's take a survey of what architects -- locals and outsiders -- have wrought in the past year: Downtown Bellevue growing new high-rises like bamboo on steroids perfectly illustrates the regional architectural doldrums. Every example in Bellevue's new crop, whether just completed or in progress, seems to have rolled out of the same skyscraper factory: a sleek glass-and-steel skin, a flat top and a rustle of slightly off-square angles or nips and tucks to create a little tension with the street grid.

They're all vastly better than the concrete file cabinets of the '60s and '70s (Bellevue's Paccar Building and Seattle's Safeco Plaza, for example), but not as good as the best of the art deco age (Seattle Tower). Their greatest failing, however, is that they don't establish any meaningful identity for their city -- they don't signal anything except a generic prosperity.



Kirkland's Heathman Hotel is the year's silliest example of haute-bourgeois retrotecture.

Cynics might say that's all Bellevue itself is about. You didn't read it here first.

Mosler Lofts, the newest of the Belltown condo crop, points in a more engaging direction. In fact, it's the most interesting and provocative residential high-rise to appear in Seattle since World War II.

The architecture firm Mithun appears to have taken the feel of the original urban loft idea -- the gritty old warehouse transformed into high-end living quarters -- and applied it to a new building with the advantage of big windows, which are structurally impossible in most renovations. Its mood, as seen from the street, is dark, tough and industrial. But on the north side, it meets Clay Street with a three-story brick facade that could almost be a cluster of family-friendly row houses.

Urban life is all about ambiguity and complexity, and this building reflects it better than any of the slicker, more overtly luxurious towers around it.

The Heathman Hotel, which just opened in downtown Kirkland, is the year's silliest example of haute-bourgeois retrotecture.

The justification for this vaguely Italianate Victorian villa, executed by Jensen/Fey Architecture & Planning of Redmond, was to be "consistent with the city's elegant and historic buildings." But Kirkland's scattered Victoriana isn't nearly as compelling a context as its stock of late 20th-century architecture downtown and along the lakefront. That would have been worthwhile to build on.

Architectural nostalgia is essentially a developer-driven marketing ploy, a way to drape the overwhelming complexity of contemporary life in costumes suggesting 19th-century family values and small-town simplicity. It doesn't do any great aesthetic harm, but it suggests a retreat from the realities of the 21st century, a kind of denial.

A new Interstate 405 pedestrian bridge, of all things, shows a good try at humanizing the most inhumane urban environment of modern times -- the freeway.

The three-story stair and elevator tower, just south of the state Route 527 exit in Bothell, is topped with an airfoil-like rain shield that gives it an intriguing profile whether approaching by car or on foot. The concrete pylons raising the bridge over the freeway look like art deco flower abstractions: tough, but graceful, too. The long tunnel-in-the-air over the freeway is as drab as an alley on the inside, but with eight lanes of traffic roaring underneath, it doesn't seem like a place where anyone would be tempted to linger.

This pedestrian tower in Bothell is a noble attempt at humanizing a freeway view. The concrete pylons look like art deco flower abstractions.

The Olympic Sculpture Park by Weiss/Manfredi of New York is easily the best new public venue of the year, a park that redeems a former downtown wasteland with a synergy of art, architecture and nature. The architects took a big risk here, and pulled it off. The Seattle Art Museum's other blockbuster, the 16-story museum addition, demonstrates innovative leadership in sharing the new tower with WaMu, but Brad Cloepfil's design is as risk-free as a Brooks Brothers overcoat.

The thorniest issue that developers and architects face is the widening chasm between income and housing affordability in the region. Dreary $500,000 tract houses in the 'burbs are yesterday's solution, just bulked up and priced ever more out of line with value. And the mid- and high-rise condos mainly address the needs of singles with Microsoft paychecks, with a going rate of about $650,000 for 1,000 square feet.

Finally, considered as a piece of kinetic architecture, the South Lake Union Streetcar adds a new note of cachet to the downtown streetscape. The tracks are unobtrusive (except to bicyclists), and the Czech-made cars have an impassive, dignified look (aside from the one with the purple paint) that helps calm the nagging feeling that they're not really doing anything.

It's probably worth asking why downtown Seattle now has two toy train sets, and why the one we unwrapped under the 1962 tree is so much faster than the new one.

Lawrence W. Cheek is a freelance writer on architecture and author of "Frank Lloyd Wright in Arizona." Contact him at escrito48@comcast.net

http://seattlepi.nwsource.com/ae/344489_arch25.html

Solar Powered Bottle Sorter And Other Eco-friendly Inventions By Students

Cynthia Lin, a senior in mechanical engineering, is part of a team that built a solar-powered bottle sorter for the 2.009 product engineering class, which had the theme "reduce, reuse, recycle." (Credit: Photo / Donna Coveney)

ScienceDaily (Dec. 27, 2007) — The assignment was wide open: Design something based on the principles of reduce, reuse and recycle, and develop it into a prototype product. The results ranged from simple mechanical devices to complex electronic machines, but all served that central purpose in original ways.

To meet the challenge, seven teams of 18 students in this year's 2.009 Product Engineering Processes class, taught by David Wallace, came up with a wide variety of ingenious ideas, which they presented last week at a packed session attended by about 150 outside engineers and product developers.

"A big part of it is figuring out a good problem to solve," said Wallace, the Esther and Harold E. Edgerton Associate Professor of Mechanical Engineering and engineering systems co-director of the MIT CADlab. "Otherwise, you could do a really nice thing that's irrelevant. So the first thing is deciding where to put your energy."

Some of the projects resulting from the class are already being tried in real-world settings and could become commercial products. One of these is a solar-powered bin that automatically sorts the recyclable bottles and cans dumped into it.

The bin, called Recycl-o-sort, is being tested in Boston's Codman Square area as part of Family, Inc.'s recycling awareness campaign and a citywide antilitter campaign. The self-contained device uses a turntable to pass each item through three different sensors, whose readings can differentiate between glass, plastic and aluminum containers, or non-recyclable trash, directing each type into a separate storage bin.

Another team addressed the problem of poorly insulated houses in Pakistan, where winter temperatures can be severe in the north. They came up with a way of making insulation panels out of old plastic bottles, of which about a half million are discarded each year in the city of Karachi alone. The cost of enough panels to insulate a typical home would be paid back in fuel savings in about one year, the students calculated, and in the process would create jobs for local people while reducing local fuel needs and the amount of waste sent to landfills.

Also working to help with developing nations' needs, one team developed a way of processing the West African shea nut into a butter that can be used both for cooking oil and cosmetics, using a bicycle-powered grinding machine. The device replaces the traditional mortar-and-pestle method or higher-priced, centralized mills, and can be built from locally available materials and labor.

The team will take their prototype to Ghana in January for field-testing through a local women's co-op. People from various villages will be invited to watch the tests, and micro-financing through local institutions will be arranged for those who want to put the system to work.

Another project that could help developing-world farmers is a system for sorting coffee beans, which must be sorted to a uniform size before roasting. Aimed at the estimated 20 million or more small-scale coffee farmers worldwide, the device, which can be locally manufactured and should pay for itself in two months, will be field-tested in January in Guatemala.

Addressing both water shortages and the cost of water heating, one team designed a shower system that automatically reduces the water flow while a person is lathering up. It does this by using photocells to detect when the person reaches for the soap.

Another team came up with a way of avoiding the cost of constantly replacing batteries in remote controls for television sets and other electronics, as well as the environmental cost of constant battery disposal. They came up with a remote that can be powered for a couple of hours by just pulling a trigger. The team calculates that if one out of 100 remotes in the U.S. were replaced by their units, five million batteries would be saved every year.

And finally, to alleviate the pollution caused by the disposal of old oil filters that still are clogged with dirty oil, one team came up with a device that can extract the oil and allow it to be reused as a lubricant. The team's research showed that 450 million oil filters are discarded every year, mostly in landfills, and that a single dirty filter could contaminate 62,000 gallons of drinking water.

While these projects may end up as real products--and many of those from past classes have indeed gone commercial--Wallace says that's not the course's primary goal. "We want to teach people what it takes to be a technical innovator," he says. And the results, which can be viewed at web.mit.edu/2.009, show that they have indeed.

Adapted from materials provided by Massachusetts Institute of Technology.

http://www.sciencedaily.com/releases/2007/12/071221172413.htm

Where And Why Humans Made Skates Out Of Animal Bones

Illustration of a bone skate used in the experiments. (Credit: Image courtesy of Blackwell Publishing)

ScienceDaily (Dec. 26, 2007) — Archaeological evidence shows that bone skates (skates made of animal bones) are the oldest human powered means of transport, dating back to 3000 BC. Why people started skating on ice and where is not as clear, since ancient remains were found in several locations spread across Central and North Europe.

In a recent paper, published in the Biological Journal of the Linnean Society of London, Dr Formenti and Professor Minetti show substantial evidence supporting the hypothesis that the birth of ice skating took place in Southern Finland, where the number of lakes within 100 square kilometres is the highest in the world.

"In Central and Northern Europe, five thousand years ago people struggled to survive the severe winter conditions and it seems unlikely that ice skating developed as a hobby" says Dr Formenti. "As happened later for skis and bicycles, I am convinced that we first made ice skates in order to limit the energy required for our daily journeys".

Formenti and Minetti did their experiments on an ice rink by the Alps, where they measured the energy consumption of people skating on bones. Through mathematical models and computer simulations of 240 ten-kilometre journeys, their research study shows that in winter the use of bone skates would have limited the energy requirements of Finnish people by 10%. On the other hand, the advantage given by the use of skates in other North European countries would be only about 1%.

Subsequent studies performed by Formenti and Minetti have shown how fast and how far people could skate in past epochs, from 3000BC to date.

Adapted from materials provided by Wiley-Blackwell.

http://www.sciencedaily.com/releases/2007/12/071224124656.htm

Unknown Monumental Building Of Herod The Great (73-4 BC) Unearthed

ScienceDaily (Dec. 25, 2007) — This year Thomas Pola, professor for theology at TU Dortmund, and his team have continued the excavations in the East Jordan Land. With their findings on the mountain Tall adh-Dhahab (West) in the Jabbok Valley the archeologists could substantiate one assumption: everything points to the fact that the building remains from the Hellenistic and Roman era, found in 2006, were part of a yet unknown monumental building of Herod the Great (73-4 BC).

This assumption is based on the floors of one of the discovered peristyle yards (yards enclosed by continuous columns) which the archeologists were able to excavate. Prof. Pola sees the parallels with the architecture of Herod's West Jordan Alexandreion as prove that there also was a monumental building of Herod the Great on the plateau of the mountain Tall adh-Dhahab. That would mean that in addition to his reign over the West Jordan Land, the Jewish king had a security system with which he could have controlled the ancient long-distance traffic in the middle Jordan Valley and the access ways to the plateau of the East Jordan Land.

Above that, the team of Prof. Pola for the first time discovered a layer from the late Bronze Age or the Early Iron Age on a natural terrace directly underneath the plateau. The ruins of a tower from the city wall at least show three building phases. "On the level of the oldest building phase we took samples from a burnt layer. A C14-analysis carried out by Prof. Manfred Bayer (Physics at TU Dortmund) showed that the charcoal originates from the time 1300 to 1000 BC. At this location we will continue to work in 2008."

Finally Prof. Pola's team discovered the purpose of the monumental military facility half way up the mountain: it is a casemate wall. It is supposed to have been finished in Roman times. This is yet another argument for the identification of the mountain with the stronghold Amathous mentioned in the ancient world. The historian Josephus (37 to 100 AD) described Amathous as the biggest stronghold in the East Jordan Land.

Even reworking the campaign 2006 revealed a sensation: the carve-drawings which had been discovered by Dr. Batereau-Neumann, a sponsor of the project, at that time, were dated to the ninth or tenth century by the internationally renowned specialist for Middle East iconography, Prof. Othmar Keel (Universität Freiburg). According to him the two pictures, the head of a lioness and the fragment of a cultural scene, belong together. The sensation: they point to the existence of a temple on the mountain plateau in the New-Assyrian time.

The project is sponsored by Technische Universität Dortmund and the Gesellschaft der Freunde der TU Dortmund. For the time from the end of July until the end of August Prof. Pola is again looking for sponsors of the project as fellow travelers. "They can join the team or just enjoy the beautiful landscape", says Prof. Pola. The requested 3,000€ include flight, transport, food and simple accommodation.

Adapted from materials provided by Dortmund University.

http://www.sciencedaily.com/releases/2007/12/071221232712.htm

Evolution Of Crop Grasses Linked To Greenhouse Gases

A healthy wheat field outside Clay Center, Nebraska. (Credit: Photo by Stephen Ausmus)

ScienceDaily (Dec. 27, 2007) — How a changing climate can affect ecosystems is an important and timely question, especially considering the recent global rise in greenhouse gases. Now, in an article published online on December 20th in the journal Current Biology, evolutionary biologists provide strong evidence that changes in global carbon dioxide levels probably had an important influence on the emergence of a specific group of plants, termed C4 grasses, which includes major cereal crops, plants used for biofuels, and species that represent important components of grasslands across the world.

C4 plants are specially equipped to combat an energetically costly process, known as photorespiration, that can occur under conditions of high temperature, drought, high salinity, and--ith relevance to these latest findings--low carbon dioxide levels. Although a combination of any of these factors might have provided the impetus behind the evolution of the various C4 lineages, it had been widely speculated that a drop in global carbon dioxide levels, occurring approximately 30 million years ago during the Oligocene period, may have been the major driving force. Establishing the link between the two, however, has proven difficult partly because there are no known fossils of C4 plants from this period. Enter Pascal-Antoine Christin and colleagues from the University of Lausanne, Switzerland, who decided to take an alternative approach to date a large group of grasses. By using a "molecular clock" technique, the authors were able to determine that the Chloridoideae subfamily of grasses emerged approximately 30 million years ago, right around the time global carbon dioxide levels were dropping.

Furthermore, a model of the evolution of these grasses suggests that this correlation is not a trivial coincidence and instead reflects a causal relationship.

As the authors noted in their study, many of the C4 grasses evolved after the drop in global carbon dioxide levels 30 million years ago. How to explain this" The authors speculate that while an atmosphere low in carbon dioxide established the basic conditions necessary for C4 evolution, other ecological factors might be at work. In light of this, the authors hope to apply the same approaches used in the paper described here to investigate the role of other variables, such as drought, salinity, and flooding, in the evolution of C4 plants. In addition to improving our understanding of how climate changes influenced ecosystems in the past, such studies may allow predictions of how human activities could affect the planet in the future. Indeed, with regard to global carbon dioxide levels, Christin and colleagues write, "Besides its influence on climatic variables, increased CO2 concentration could trigger important ecological changes in major terrestrial ecosystems by affecting the distribution of C4-dominated biomes and the affiliated flora and fauna." This implies that a reversal of the conditions that favored C4 plants could potentially lead to their demise--a startling prospect if one considers the human race's reliance on C4 crops like corn, sugarcane, sorghum, and millets.

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The researchers include Pascal-Antoine Christin, Department of Ecology and Evolution, Biophore, University of Lausanne, Switzerland; Guillaume Besnard, Department of Ecology and Evolution, Biophore, University of Lausanne, Switzerland; Emanuela Samaritani, Department of Ecology and Evolution, Biophore, University of Lausanne, Switzerland; Melvin R. Duvall, Department of Biological Sciences, Northern Illinois University, DeKalb, Ill., USA; Trevor R. Hodkinson, Department of Botany, School of Natural Sciences, University of Dublin, Trinity College, Dublin, Ireland; Vincent Savolainen, Imperial College, Berkshire, UK; and Nicolas Salamin, Department of Ecology and Evolution, Biophore, University of Lausanne, Switzerland.

Adapted from materials provided by Cell Press.

http://www.sciencedaily.com/releases/2007/12/071220152555.htm

Loma Prieta Fault In California Stronger Than Previously Thought

Faults and plate motions in the San Francisco Bay Region. Yellow lines show the locations of the 1868 M6.8 earthquake on the southern portion of the Hayward Fault and the 1989 M6.9 Loma Prieta earthquake near the San Andreas fault northeast of Monterey Bay. (Credit: USGS)

ScienceDaily (Dec. 26, 2007) — A new study adds to evidence that the fault responsible for the 1989 Loma Prieta earthquake in the San Francisco Bay Area, California, is not as unusually weak as had been thought.

In general, a "weak" fault is one that ruptures relatively easily, resulting in smaller but more frequent earthquakes, while a "strong" fault can accumulate more strain before breaking in larger shocks, said Robert Twiss, professor emeritus of geology at UC Davis and co-author of the study with Jeffrey Unruh of William Lettis and Associates of Walnut Creek, Calif.

The Loma Prieta fault has been described as unusually weak based on studies of the aftershocks from the 1989 earthquake. By looking at the direction and movement of the aftershocks, researchers could calculate the strains in the fault. Previous studies looked at the aftershocks in total.

Twiss and Unruh took a new approach, breaking the aftershocks up into 17 separate clusters. They found that the fault is complex, with different kinds of deformation in different places. When they looked at the aftershocks in greater detail, they found more stresses in the structure.

"You're losing most of the essential mechanical information about the fault by piling these details together," Twiss said.

The researchers also found that the stresses and slip directions of the main earthquake were reproduced in the aftershocks, implying that the stresses continue to be present.

Twiss said that there is "no way" to predict the strength or timing of future earthquakes on the same fault using these results. But the findings would be relevant for other researchers seeking to build models of earthquake faults in the Bay Area, he said.

The paper was published in the September/October 2007 issue of the Geological Society of America Bulletin.

Adapted from materials provided by University of California - Davis.

http://www.sciencedaily.com/releases/2007/12/071219130301.htm

Cell Growth Discovery: Protein Interactions Of MAP Kinase Signaling Pathway Measured

ScienceDaily (Dec. 30, 2007) — The Stowers Institute's Rong Li Lab, in collaboration with the Institute's Imaging Center, has achieved a quantitative in vivo measurement of the dynamic protein-protein interactions in the mitogen-activated protein (MAP) kinase cascade signaling pathway, which is critical to growth and differentiation decisions in all eukaryotic cells.

In new research Brian Slaughter, Ph.D., Postdoctoral Research Fellow; Joel Schwartz, Ph.D., Managing Director of the Imaging Center; and Rong Li, Ph.D., Investigator, used sophisticated biophysical techniques to perform quantitative biochemical measurements directly in live yeast cells.

"It turns out that by using three fluorescence-based analyses we could assess the movement, concentration, and state of protein hetero- and homo-oligomerization at the single cell level," said Dr. Slaughter. "It is a significant advance to be able to apply these quantitative techniques to the model system of yeast."

"These technical breakthroughs represent an exciting emerging direction for molecular analysis in the future," said Dr. Li. "They will enable biological systems to be understood with precise information regarding when, where, and to what extent molecules interact with each other during important regulatory processes."

The Rong Li lab worked closely with the Institute's Imaging Center to perfect the application of these techniques in yeast, calling on the Center's expertise and cutting-edge instrumentation for microscopy-based technology.

"This work demonstrates the Institute's tremendous strength for live-cell quantitative analysis," said Robb Krumlauf, Ph.D., Scientific Director. "I believe this and similar techniques will become increasingly important to our ability to better understand the most fundamental events in the life cycle of a cell."

The paper, "Mapping Dynamic Protein Interactions in the MAP Kinase Signaling Using Live-Cell Fluorescence Fluctuation Spectroscopy and Imaging," was posted to the Web site of Proceedings of the National Academy of Sciences (PNAS) yesterday and will appear in a future print issue of the journal.

Adapted from materials provided by Stowers Institute for Medical Research.

http://www.sciencedaily.com/releases/2007/12/071213124908.htm

Trial volunteers 'left in lurch'
Patients who take part in drug trials are being left in the lurch once the research is completed, doctors warn.

People assume they will be given the treatment indefinitely with the NHS picking up the bill, the Faculty of Public Health said.

But primary care trusts have limited budgets and cannot pay for treatments before the effectiveness has been established, they stressed.

Industry experts agree patients needed to be aware that treatment may end.

The warning comes after a row over funding for a new drug called eculizumab for patients with a rare genetic disorder, paroxysmal nocturnal haemoglobinuria.

> **At the very least they should be told very clearly before they consent that either there will not be any ongoing funding from the drug company, or that the company will continue the funding until other funding is in place**
> Dr Jonathan Howell

It costs £300,000 per patient per year and there were 40 patients in the trial.

Dr Jonathan Howell, a consultant in public health in the West Midlands, said a health technology assessment was being done to look at how effective the drug was.

But in the meantime, PCTs were being put under pressure to pay for the treatment.

There have also been recent battles over access to multiple myeloma drug lenolidamide.

Some patients who took part in the extended access trial have been able to continue on treatment where others found their PCT would not fund it.

High hopes

In a statement issued with the Association of Directors of Public Health, the Faculty warned that patients build their hopes up about the outcome of the treatment and believe they will be able to continue taking the drugs.

They said it needed to be made clear what will happen once the research period ends.

It should be made clear... what the position is regarding the supply of the medicine at the end of the trial
Richard Ley
Association of the British Pharmaceutical Industry

Current legislation requires the trial sponsor to detail a plan for treatment or care of subjects after the research is done.

But there is "insufficient clarity" over who will pick up the bill, the Faculty said, and primary care trusts do not often know that trials are even going on until they are over.

Dr Howell, said it was an increasingly common issue.

"This is all about making sure that the trial sponsor treats the patients fairly and reasonably and that the patients know what is likely to happen to their treatment at the end of the trial."

"The patients are taking some risk, as the reason the research is being carried out in the first place is that the safety and effectiveness of the experimental treatment are uncertain.

"At the very least they should be told very clearly before they consent that either there will not be any ongoing funding from the drug company, or that the company will continue the funding until other funding is in place."

He added that it would not be a great expense for the drug company to continue funding the treatment for trial patients until the NHS has evaluated it.

Richard Ley, spokesperson for the Association of the British Pharmaceutical Industry, said he agreed 100% that patients need to be well-informed.

"Our own guidelines say that it should be made clear either in the trial protocol or the patient consent form what the position is regarding the supply of the medicine at the end of the trial."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7155572.stm

Published: 2007/12/24 00:53:36 GMT

Touch cube points to future toys
Thousands of people will be unwrapping their shiny new gadgets at Christmas but one British artist and engineer is hoping his creation will find its way under trees in time for the next festive period.

Andrew Fentem has worked on innovative human computer interfaces for some time, after beginning his career in military research and development, specifically missiles.

His work today is part-art, part hobby, part business venture.

His latest creation, the Fentix Cube, is generating a lot of interest from toy manufacturers and buzz on the internet, based on a few clips he put on YouTube.

"Because of absurd level of interest generated by YouTube everyone wants the device," he says. "I'm being bombarded by toy firms from Korea."

A small plastic cube with playful lights, it could be mistaken for a mass market throwaway toy manufactured by the million in the Far East.

But the colourful exterior masks a combination of innovative technologies that have propelled Apple's iPhone and Nintendo's Wii to huge success this year.

The cube contains a large battery, an array of LEDs and crucially three accelerometers which can detect the pitch and yaw of the device, and sensors on the inside surface for touch control.

Mr Fentem says: "You instinctively know how to use it. The way you understand the world as a young child is through physical and spatial awareness, up or down. It's how you learn and communicate."

The accelerometers are essentially chips which can sense the direction of gravity; once you know that, you can work out which way is up and down.

"It took about a month to build; I thought it would be nice to do a cube computer after I had seen an electronic Rubik's cube, which was very poor."

The cube has been programmed to play a handful of games, such as a PacMan-inspired maze game. But the combination of touch, light and three dimensions opens up a range of possibilities - from music games, to puzzles and even a lifestyle device.

Mr Fentem said he was inspired to build the cube because he was dismayed by the quality of many of today's electronic toys.

"This was originally an artistic intervention into the gadget market. If you really want to make something unusual, you really have to understand the physics of how things work.

"Because most people don't know much about engineering, the ideas tend to be poor."

Up until the age of 22 Mr Fentem worked at Thorn EMI on highly classified projects, and had to sit in a Faraday cage, a shielded space which prevents any sort of transmission in or out.

Disillusioned by the industry he moved to London and fell into the art and electronics scene.

Much of his work is displayed at the Kinetica gallery, the UK's only space dedicated to electronic art.

His previous designs include multi-touch screen interfaces for musical applications, which won him an innovation award from the National Endowment for Science, Technology and the Arts.

He has also worked on touchscreen surface technology, for creating musical scores, playing games, interactive floors and artistic purposes.

He says the cube is designed partly as a calling card for investors and companies.

"I'd like the cube to go mass market. I'd like to see it in people's homes. But if it only serves as an introduction to my work, I'll be happy."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/technology/7156414.stm

Published: 2007/12/25 11:18:04 GMT

2008 Olympics: new towers for a new superpower

Last Updated: 12:01am GMT 29/12/2007

As the 2008 Olympics draw near, China is putting up buildings on an awe-inspiring scale, writes Ellis Woodman

In the run-up to next year's Olympic Games, the Beijing authorities are directing more than £1.5 billion towards improving the city's air quality. There is some way to go.

Open plan: the new headquarters of China Central Television.

Beijing today remains shrouded in smog - the product of heavy industry, three million cars and eight thousand construction sites.

Tellingly, it casts the place in the same melancholy light that bathes Monet's and Whistler's depictions of London at the end of the 19th century. The cause is much the same: the capital of the world's fastest-growing economy is turning into a metropolis.

The extraordinary speed of change is nowhere more evident than in the new Central Business District. Fifteen years ago, this was a low-rise residential area. Today, the authorities' ambition to build more than 300 towers lies well within reach.

Architecturally, the mean quality is low, but improving. An unfortunate craze for decking out office blocks as overscaled pagodas seems to have passed and the glassy corporate architecture of Canary Wharf and Lower Manhattan has become the new ideal.

There is, in fact, only one building being constructed here that it would be impossible to imagine in any other country. But that is not because there is anything particularly Oriental about its architecture.

It is just that China is currently the one nation on earth blessed with the mix of overweening ambition, brute strength and deranged self-confidence that might lead a country to build something quite as crazy as the new headquarters of China Central Television (CCTV).

Designed by the Rotterdam-based Office for Metropolitan Architecture (OMA), the building will bring together the myriad operations of the country's principal broadcaster within a single massive structure.

Among the world's office buildings, only the Pentagon will be larger. It is 234 metres high so, by any conventional definition, a skyscraper. And yet that term feels inadequate for this conundrum.

The simplest way to describe it is as an enormous, contorted loop. Twin towers form its vertical sides, although they aren't in fact vertical at all, being inclined towards each other at an alarming angle.

They are connected at the top and bottom by bridges that will allow both CCTV staff and the public to travel a full circuit of the building. Crucial to maintaining the impression of a continuous flexing tube is the fact that the bridges are almost as high as the towers are wide.

The one on top extends for a mighty 11 storeys. The finish date is 2009 but the building will be largely complete in time for the Olympics. Certainly, the exterior has to be complete by then, with enough facilities to allow for the games to be broadcast from within.

The task of making this lopsided colossus stand up would be a challenge in any location. Given that Beijing is subjected to regular earthquakes, it has been nothing short of Herculean. The approach adopted by the British engineer, Arup, has been to encase the whole form in a grid of diagonal steelwork which grows denser at moments of particular stress.

For its architect, the building is not just an act of structural risk-taking but also a political gamble. China's recent economic progress may have ushered in a profound adjustment of the country's social structure but it remains the case that OMA's client is a sub-ministry of the Chinese government - to put it at its blackest, the propaganda machine of an authoritarian regime. Should OMA have taken the job?

The answer may only become apparent once the current liberalisation of China has run its course. However, Ole Scheeren, the German architect who runs OMA's Beijing office, argues that architecture has a role to play in encouraging that process.

CCTV building under construction.

The public route that will wind through the building certainly carries a powerful message about the opening up of a formerly closed institution, while Scheeren also sees the building's structural eccentricity as an emblem of social change. "In opting for our design the client chose a symbolic statement that is not all about stability," he says.

OMA won the competition for the CCTV building in 2002 at a time when the Chinese were particularly open to new architectural ideas. "China had just joined the World Trade Organisation, there was a rising economic strength and a process of opening up had begun," says Scheeren.

"The country had also just won the Olympics which became a wild card to exacerbate ambitions and give

a precise deadline. The project was developed in response to the question of how China could represent itself to the world."

The same consideration has clearly informed a number of other projects that are currently being completed in readiness for the games. Norman Foster, the British architect of Beijing's new airport terminal, describes his firm's project as "the largest and most advanced airport building in the world".

It is 3.25km long and has been designed to process 53 million passengers a year - this in a country where, as recently as five years ago, many citizens found it difficult to secure a passport.

If completed on deadline, the project will have taken less than four years to design and construct. That is a tribute to the fact that at one point an astounding 50,000 labourers were on site but also to the speed with which a non-democratic authority can make decisions.

"The building is equivalent in area to [the combined area of] every terminal at Heathrow plus 17 per cent. The process of realising it will have taken less time than it took to conduct the Heathrow Terminal Five planning enquiry," says Foster.

Of course, the project that will receive the most attention next August is the Olympic Park. The Chinese have put the cost of hosting the games at £20 billion - more than double the current estimate for London's 2012 event.

Bear in mind the fact that construction costs in Beijing are a fourteenth of what they are in London, and something of the scale of what is being undertaken can be grasped.

The park lies to the north of the city on land that was previously occupied by a slum district. The Geneva-based Centre on Housing Rights and Evictions has estimated that 1.25 million residents have been displaced as a result of construction work related to the games, although the Chinese authorities claim that only 6,037 homes have been demolished.

As with CCTV and the airport, the plum commissions here have gone to foreign architects - the National Aquatics Centre to a team led by the Australian practice PTW and the National Stadium to a team led by Herzog and de Meuron, the Swiss architects of Tate Modern.

These are vast buildings but, as with OMA's project, their potentially overbearing scale is tempered by an architectural language that appears thrillingly, bewilderingly random.

The Aquatics Centre, with five pools, will host all the swimming and diving events next August, then become a recreation centre after the games. Dubbed the "Watercube", its slab-like form gives the impression of having been made from enormous blue soap bubbles.

In fact, these are 4,000 steel-framed units, faced externally in ETFE - the translucent material used for the cladding of the Eden Project in Cornwall.

In most contexts, the Watercube would be considered a work of extraordinary daring. However, as a surreal alliance of computer wizardry and cheap labour, it is comprehensively outperformed by its next-door neighbour.

With capacity for 100,000 spectators, the National Stadium, or "Bird's Nest" as it is now universally known, is effectively one building within another.

An inner concrete bowl supports the seating and a steel exoskeleton rises up around and over it to form the roof. Except for the fact that the seating is arranged in a distinctive saddle-like profile, the bowl is relatively conventional.

The exoskeleton, however, is anything but. This mad tangle of enormous steel members was supposedly inspired by the patterns of crazed Chinese pottery. Miraculously, given that it has been built from elements weighing up to 350 tons, the finished product does somehow achieve the delicacy of that starting point.

Perhaps the most impressive aspect of the scheme is the Piranesian space caught between the concrete core and the steel enclosure. Shops, hotels and restaurants are set into the underside of the seating, opening on to the concourses which occupy this gap.

After the games, these spaces will serve as a new kind of public realm. If the stadium were to be built in the West, it is hard to imagine that they would be occupied. However, in China one regularly encounters people playing cards, dancing or exercising in the street. If they can capture something of that energy, these spaces promise to be remarkable.

Will the Chinese maintain their appetite for such extraordinary architectural adventures once the games are over? Perhaps not. But Ole Scheeren, for one, is planning to stay and pursue a career in China.

"The difference between working here and in the West," he says, "is that this is a country interested in developing new values rather than maintaining its old ones." For architects working in China, this condition of restless change is the only certainty. WATCH

Ellis Woodman on Beijing's Olympic buildings

http://www.telegraph.co.uk/arts/main.jhtml;jsessionid=FCWFDTCC3FBYZQFIQMGSFF4AVCBQWIV0?xml=/arts/2007/12/29/babeijing129.xml&page=1

Along Ravaged Gulf, Young Architects, Nonprofits Lead Renewal

Commentary by James S. Russell

Dec. 26 (Bloomberg) -- Looking like two small cottages stitched together, the Nguyen house in Biloxi, Mississippi, isn't obviously a prototype for the future.

The house was built in several months by Architecture for Humanity, a nonprofit that provides disaster shelter worldwide. It was intended to use new wind- and flood-resistance standards in innovative and affordable ways, and to employ ``green'' design and construction techniques that could be easily replicated.

Its innovations are considerably less groundbreaking: It was completed in months almost entirely by volunteers. It's elevated 10 feet above the ground and includes an upgraded anchorage system.

Still, this and six other projects in Architecture for Humanity's Biloxi Model Home Program are invigorating the city. The group is one of several tenacious nonprofits that are seeding a new kind of construction industry in the Gulf region ravaged by Hurricane Katrina.

Before I visited the Gulf Coast recently, I worried that it was naive to try to do so many new things. After all, the vast and fragmented U.S. building industry is little focused on affordability. It resists innovation. Private and public building research is minuscule -- even on energy, where great strides can be made without investing in pie-in-the-sky technologies.

Filling Breach

In the wake of Katrina, nonprofits like Architecture for Humanity are jumping into the breach. The need is all the more urgent as misguided plans to raze 4,500 New Orleans apartments took a further step forward last week with a supporting vote from the City Council.

The Nguyen house, designed by brothers Chuong and Chung Nguyen of Houston-based MC2 Architects, offset its paired cottagelike shapes to make room for generous decks and allow cross-ventilation. The blue-and-white structure looks better than a lot of speculative houses -- those built in anticipation of finding a buyer -- even though it's perched on stilts.

``No one had tried this before, and there were growing pains,'' said Michael Grote, a 31-year-old architecture-school graduate with Architecture for Humanity.

He said it was hard to balance the architects' innovative design ideas with the desires of the family who would occupy it and with engineering standards that the coast now requires. Costs rose quickly (covered by donations and public grants), and ideas had to be simplified so this and other homes could be built by unskilled volunteer labor.

Global Green

In New Orleans, I visited the construction site of a small house with stylishly sloped shed roofs and a swooping V of metal pipe that functions as a porch support. It's being built in the Holy Cross neighborhood by Global Green, an environmental advocacy group in Santa Monica, California. The architect, Manhattan-based Workshop/apd, packs a dozen eco- ideas into its compact volume.

Challenges? Just a few, said Beth Galante, Global Green's director. No one locally knew how to install solar panels. Building officials had never seen a dual-flush toilet or a filtration system that recycles water from sinks. The Army Corps of Engineers was concerned that the geothermal-well cooling system might undermine the nearby levee.

As the project advances -- with four more homes, an 18- unit apartment complex and a community center that can offer refuge in future floods -- the local building industry's ability to innovate has improved, Galante said.

``We're paving the way for others by taking on the market barriers to building green,'' she said.

Faster Payback

Affordability has fallen by the wayside. Global Green's model home will be sold for about $150,000 to a family displaced from the nearby Lower Ninth Ward, though it will cost much more to build. Foundation grants, tax credits and donations will cover the gap.

Still, the payback may be faster than anticipated. Utility bills skyrocketed after the storm, and flood-savvy construction may reduce punishing insurance costs.

Actor Brad Pitt, who has helped Global Green garner national support, has upped the ante with the nonprofit Make It Right. Announced earlier this month, it plans to build 150 innovative homes by local luminaries such as Eskew + Dumez + Ripple and big-name international architects like Shigeru Ban of Japan. The program is set for the flood-leveled Lower Ninth Ward. These projects have been are cheered locally, and economic-development experts see these prototypes as a basis for a new sustainable construction economy.

New Orleans is a perfect lab to test eco-housing and storm-proofing and to advance cost-cutting construction systems such as modular. These are innovations the whole country can use, but they need to be scaled up to bring costs down. Can an innovation-focused government partner step in with cash and expertise to realize the prototypes' full potential?

(James S. Russell is Bloomberg's U.S. architecture critic. The opinions expressed are his own.)

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Museums making their mark in smaller cities

A signature design is seen as a way to lure tourists and showcase how a community sees its future.

By Martha Waggoner
Associated Press

December 29, 2007

RALEIGH, N.C. -- It appears to float above a city of soldiers, looming over the sandy firing ranges and drop zones of Fort Bragg unlike any other building in downtown Fayetteville.

Designs for the new home of the Fayetteville Museum of Art also depict a cross-shaped structure with elevated, cantilevered galleries -- a cutting-edge building.

It's an ambitious design, not unlike the glass, wood and water of the planned Crystal Bridges art museum in Bentonville, Ark., or the layered forms of steel, patinated zinc and glass in the new art museum in Roanoke, Va.

None of the towns is small, but they're not big-name cities either. Yet they're the latest to strive for more than a simple container in designing a new art museum, instead seeking a signature building that will attract both attention and tourists.

"It speaks volumes about the people that live there, where they're going and what they're thinking about their economic development, their situation in the world," said Tom Grubb, the director of the North Carolina museum.

Grubb's ambition for the museum wasn't limited to the design, but also included the designer. The Fayetteville museum hired internationally known architect Enrique Norten, whose projects include a proposed Guggenheim museum in Guadalajara, Mexico. At first, Norten wasn't interested in a project so small.

"Then we realized it's a project that really, regardless of the size, it changes the life of a whole community," Norten said in an interview from his office in Mexico City. "It has a huge impact on a community. A big project in a very big city can have very little impact, but in a community like that, it would be great."

It's happened before, most notably with architect Frank Gehry's Guggenheim Museum of swirling metal in Bilbao, Spain. The building itself became an attraction, drawing tourists to the city of 350,000 in northern Spain who might have otherwise never made it out of the bustling capital of Madrid or the cosmopolitan Barcelona.

"The building itself by a signature architect is part of the art, a demonstration in 3-D form of artistic principles," said Jason Hall, a spokesman for the American Assn. of Museums. "It fundamentally comes down to if you decide as a community that you want to have a museum, it seems like an increasing number of folks are contemplating the idea of creating not just a building, but a signature building."

That's the case in Roanoke, a community of about 92,000 in the Blue Ridge mountains of western Virginia that's hundreds of miles from the nearest big city. The 81,000-square-foot, $66-million Art Museum of Western Virginia, designed by green architect Randall Stout of Los Angeles, should be finished next summer.

The building is "representative of where the city wants to go and where it wants to see itself -- forward, contemporary, vibrant," said Kimberly Templeton, the museum's director of external affairs.

In Bentonville, a city of 32,000 that's best known as the home of Wal-Mart Stores Inc., the $50-million Crystal Bridges Museum was designed by renowned Israeli American architect Moshe Safdie, whose projects include the new Holocaust History Museum at Jerusalem's Yad Vashem memorial. It's backed by

Alice Walton, whose father founded Wal-Mart, and will house works by Winslow Homer, Edward Hopper and Asher B. Durand.

The Fayetteville project is small by comparison, expected to cost $12 million to $15 million. It will emphasize sculpture, to be placed not only in the museum but also outside in the city's Festival Park. With a population of 168,000, Fayetteville is larger than both Roanoke and Bentonville, with a lingering image as "Fayettenam" -- a military town packed with little more than bars and tattoo parlors.

A unique building can help create an additional identity for a community, Hall said, something that cities nationwide, regardless of size, are learning.

"I think Fayetteville and many other middle cities in the United States sort of are recognizing the value of good architecture," Norten said. "Communities have gotten sophisticated enough to demand better buildings in their towns."

http://www.calendarlive.com/printedition/calendar/cl-et-design29dec29,0,5440921.story?coll=cl-calendar

Mosque designs frame divide between modern, traditional

Architects are caught in a widening divide between religious traditionalism and modern innovation. Add to that the political and community pressures.

By Christopher Hawthorne
Los Angeles Times Staff Writer

December 29, 2007

BOSTON -- PERHAPS the most direct way to describe the new Islamic Society of Boston Cultural Center, among the largest mosques built in this country since the 2001 terrorist attacks, is to call it conservative twice over. Designed for a site in the Roxbury neighborhood by Boston firm Steffian Bradley and Saudi Arabian architect Sami Angawi, it is full of references to centuries-old Islamic landmarks, including a row of peaked arches at street level and a 140-foot-tall minaret. In classic New England style, it's also wrapped entirely in red brick.

In its combination of pride and caution, the 60,000-square-foot building -- delayed by controversy and a pair of lawsuits, and finally set for completion early next year -- has a good deal to say about the uneasy relationship between Islam and the West and the future of mosque architecture in the U.S.

As Muslims put down deeper roots in this country and Europe, they are increasingly moving out of the storefront mosques and converted community rooms they took over a generation ago and building new complexes that rival Christian mega-churches in size and ambition. Opposition to new mosques has been particularly sharp in Britain, Germany and other nations where Muslim communities are both larger and less well integrated into the wider culture than in this country.

But getting one approved and built in the U.S. has become nearly as complicated, despite a history of religious tolerance here that has given churches, mosques and synagogues wide legal latitude. It requires forging alliances with local politicians and producing a design capable of satisfying a diverse, multiethnic group of worshipers, with Middle Eastern, African American and South Asian Muslims often praying under the same roof.

Most new mosques in the West are designed in a broadly inoffensive Pan-Islamic style. It draws from a short menu of required items: ceremonial entry portal, minaret and domed prayer hall featuring traditional versions of the mihrab, a niche pointing the way to Mecca, and minbar, a stepped pulpit.

Since funding for many new mosques comes from Saudi Arabia, their architecture is based to a growing degree on Islamic architecture in that country, the birthplace of the faith. (That is also the biggest source of the controversy surrounding their construction, since Saudi leaders have been accused of using mosques to advance a fundamentalist form of Islam, known as Wahabbism, that many here see as stridently anti-Western.) As a result, the diverse regional variation that once marked the building type -- with mud-brick mosques in Mali looking nothing like grand designs in Istanbul or filigreed ones in India -- has faded.

The Modern is history

Indeed, the brief period in the second half of the 20th century when mosque design was enriched by Modernist architecture and Western influence now seems like the distant past. Few remember that Louis Kahn and Paolo Portoghesi designed remarkable mosques. Highly inventive architects such as Zlatko Ugljen, whose 1980 White Mosque in Bosnia-Herzegovina has more in common with Frank Gehry's work than with Middle Eastern precedents, have remained peripheral figures.

When mosque architects in the West move away from reassuring traditionalism these days, they risk becoming scapegoats for the inevitable ire such buildings raise. Consider the case of 40-year-old London architect Ali Mangera. Mangera, a Muslim born in South Africa, worked briefly for Skidmore, Owings &

Merrill in Chicago before taking a job in the London office of Zaha Hadid, the celebrated Iraqi-born architect.

In 2001, Mangera left Hadid's practice to start a firm with Ada Yvars Bravo, a Catalan architect. In short order the pair landed what appeared to be the commission of a lifetime: a new mosque and Islamic cultural center in east London, just a few hundred yards from the main grounds for London's 2012 Summer Olympics. It would be the largest mosque in Europe and the biggest religious building in Britain, with a budget of at least $200 million. With a capacity of 70,000 for special events, it would hold just 10,000 fewer people than the planned Olympic Stadium nearby.

From the beginning, the marriage between architect and client was an odd one. The driving force behind the mosque is Tablighi Jamaat, a media-shy group that promotes an ascetic, deeply conservative version of Islam. Mangera, like his former boss Hadid, is fluent in the latest digital-design techniques and sees architecture primarily as a vehicle for innovation.

As he began work on the design, Mangera studied a number of contemporary Western mosques and was dismayed by what he called their "cartoon look." He complained to a reporter that British Muslims tend to "build mosques with fake domes and plastic minarets to look like the mosques back home." In a recent e-mail he elaborated: "The tradition of mosque building is not a static art but one which is evolutionary and responsive to changing needs."

He makes a persuasive point. Of all the world's major religions, Islam is the least constrained by architectural or liturgical requirements. The word "mosque," in the literal sense, means simply a place of prostrations. Because Muslims pray five times each day, they often must do so outside a mosque proper. That means that any room can serve as a mosque, at least for the duration of a prayer. (Even a line in the sand or a prayer rug on an office floor can suffice, as long as it faces Mecca.) It also means that Islam doesn't have a legacy of fixed, sacred space the way Christianity and Judaism do.

Thanks to Islam's strong aversion to figurative ornament, Muslim architects developed a rich abstract design language over the centuries. Islam's main universal architectural symbol, the Ka'ba in Mecca, is a powerfully spare, windowless cube draped in black fabric.

With that history in mind, Mangera set out to produce a design that would remind Muslims that the golden age of mosque architecture, from roughly the 9th through 13th centuries, was also a period of intellectual ferment and great pride in Islamic discovery in the arts and sciences.

His goal was to recapture the ambitious spirit that shaped those landmark mosques rather than merely re-creating their architectural forms.

And he had quite a canvas to work with: Though the site of the London mosque once held a sulfuric acid plant, its proximity to the Olympic site made it a prominent piece of real estate. The mosque has the potential to serve as a Muslim hub during the Olympics -- and to gain worldwide exposure as a TV backdrop to the Games.

Mangera produced a fluid, abstract design, with a latticed roof replacing the traditional dome and encircling a spacious central courtyard. Wind turbines stood in for minarets. As seen from above, the mosque was designed to resemble a quotation from the Koran spelled out in Arabic calligraphy.

The design first showed up in the press early last year, less than a year after four British-born Muslim suicide bombers attacked the London subway in July 2005, killing 52 people. Predictably enough, it was swept up in the post-bombing controversy about the role of Muslims in British society.

Though some in the press were kind to Mangera -- the Guardian's architecture critic, Jonathan Glancey, praised the design as "a 21st century London Alhambra" -- the architect and his ambitious proposal came in for regular attacks.

"I feel I'm being accused of designing a bomb factory," Mangera lamented at the time.

Architects 'sacked'

It seems likely that the innovative nature of Mangera's design startled Tablighi Jamaat leaders. At the very least, he made a convenient victim when controversy flared up. This spring, they decided to give up on Mangera's design. ("Architects Sacked Over Designs for Huge Mosque," a headline in the Evening Standard blared.) They handed the job to Allies and Morrison, a well-established London firm that recently refurbished Royal Albert Hall and is active in the Olympic planning effort.

Bob Allies, a partner in the firm, said in an interview that he had enlisted a young Muslim female architect in the office, Hina Farooqi, to help oversee the project.

"She is keen to think inventively about the issue of how women are treated and use the space," he said. He added that the firm was pursuing a design that "might still seem radical" compared with most new Western mosques and that he didn't see any reason it couldn't be completed before the start of the 2012 Olympics.

Still, the congregation seems to have learned quickly from the controversy, at least in terms of public relations. The scale of the project has been substantially scaled down: According to Allies, the mosque will hold just 3,000 for weekly sessions, with a maximum of 10,000 worshipers -- instead of the original figures of 40,000 and 70,000.

One of the mosque's trustees, Abdul Sattar Shahid, explained the decision to bring in Allies and Morrison by praising the firm's "wonderful background of delivering practical yet inspiring buildings." Emphasis on *practical.*

Boston reactions

Back in Boston, the Roxbury mosque prompted similar controversy. Columnists and bloggers made much of the fact that the Islamic Society of Boston had accepted $1 million in funding from the Islamic Development Bank, controlled by the governments of Saudi Arabia, Iran and Libya, among others.

A Boston man, James C. Policastro, sued to block the mosque in 2004, claiming that the Boston Redevelopment Agency, which sold the Roxbury property to the ISB, had given it a sweetheart deal. The ISB fired back with a suit of its own, charging the Boston Herald and a pro-Israel group called the David Project, among others, with defamation for accusing it of links to radical Islam.

As donations slowed, so did work on the mosque. ISB leaders reduced the scope of the project, putting off a planned school at the site and trimming the construction budget from $24 million to roughly $15 million.

Eventually, though, a kind of detente was reached. Policastro's suit was dismissed, and the ISB dropped its legal claims after liberal Jews and Christians in Boston stepped in to help mediate. Construction resumed, and last June the ISB held a topping-off ceremony to mark the completion of the minaret. It attracted an estimated 2,500 people and became a highly emotional, even cathartic event, with mosque leaders crying openly and their supporters chanting celebratory slogans.

Later that month, the ISB organized what it called an Intercommunity Solidarity Day on the mosque grounds. At least 250 people gathered to hear prayers in Arabic, Hebrew and English. Two men who started a website called jewssupportthemosque.com presented the congregation with a $2,000 donation they'd raised online.

Once regular Friday services begin at the mosque early next year, worshipers will enter from busy Malcolm X Boulevard, named for America's most famous Muslim leader, through a so-called Gate of Peace. They will move into a lobby and turn to the left into a light-filled prayer hall oriented to face

Mecca. Men will pray on the ground floor, and women in a separate, somewhat less grand mezzanine space above.

By the standards of contemporary architectural fashion, the Roxbury mosque is retrograde -- mere pastiche. Unlike Mangera's design, it seems reluctant to stir up the issue of what role progress and innovation -- as opposed simply to faith -- should play in contemporary Islam. It shies away from important questions some progressive U.S. Muslims are asking about the role of women in their congregations.

As an example of architectural diplomacy, though, it has emerged as a surprising, multilayered success story.

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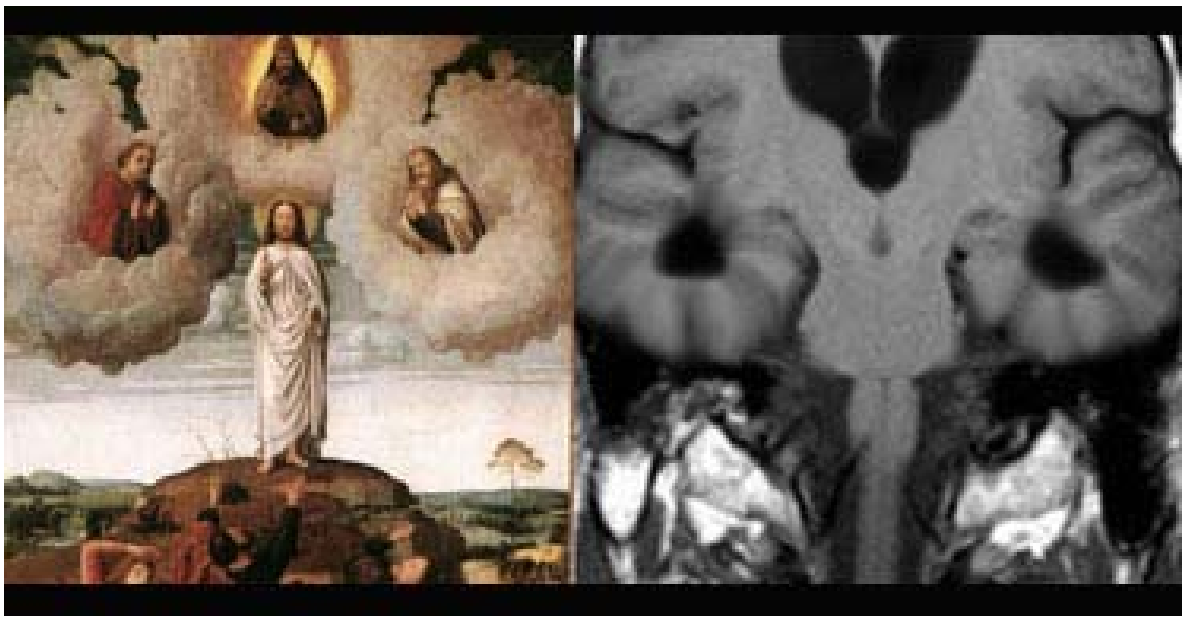
http://www.calendarlive.com/printedition/calendar/cl-et-mosques29dec29,0,7274841.story?coll=cl-calendar

Brainwave casts new light on old masters

Maev Kennedy
Friday December 28, 2007
The Guardian



Detail from the Transfiguration of Christ by Gerard David showing a resemblance to a section of the brain (right)

Any onlooker fleetingly imagining they spotted a human brain in the flurry of cherubs and drapery swirling around the figure of God as he stretches out a hand to raise Adam to life in Michaelangelo's famous fresco from the Sistine Chapel would probably conclude there was some malfunction in their own brain.

However, four eminent scientists are convinced the swirls are not meaningless decoration, but a transverse section of the sagittal section of a human brain.

The resemblance to a brain was first suggested by another scientist, FL Meshberger, but now Alessandro Paluzzi, Antonio Belli, Peter Bain and Laura Viva, from the neurosurgery, neurosciences and radiology departments of James Cook university hospital in Middlesbrough, Teesside, Charing Cross hospital in London and Southampton University, have dissected his theory and tracked down more brains in masterpieces by other Renaissance painters. "The idea came to me while looking at Raffaello's Transfiguration. Being a neurosurgeon I could immediately see a brain in the painting," Paluzzi said.

Partly as a joke to entertain sceptical colleagues, he and the team went on a brain trawl, and found many other examples. The team is convinced the artists were fascinated by the scientific discoveries being made by anatomists, but their theories had to be concealed in the imagery of their paintings, particularly when their clients were so often senior clergy who might see their scientific interests as blasphemous or even heretical, an offence punishable by death. The study, Brain imaging in the Renaissance, features in the Journal of the Royal Society of Medicine.

http://arts.guardian.co.uk/art/news/story/0,,2232687,00.html?gusrc=rss&feed=40

In Colleges, Comics Art Is Becoming a Serious Matter

By Lisa Cornwell
Associated Press
Wednesday, December 26, 2007; C10

CINCINNATI -- As a fine-arts graduate student in the early 1980s, Carol Tyler felt she had to hide her interest in cartoon drawing from teachers. An art form associated with comic books and comic strips wasn't considered college material.

Now a professional cartoonist and graphic novelist, Tyler began teaching the University of Cincinnati's first comics art class last year.

Other colleges have also started such classes as critical and academic respect for comics has grown. Courses that began in 2005 at the University of Alaska at Fairbanks are starting to lure professional artists and public school teachers. Monroe Community College in Rochester, N.Y., will start its first course next spring.

Applications have increased by at least 50 percent at the Center for Cartoon Studies in White River Junction, Vt., which was founded two years ago and won state approval this year for a master of fine arts degree. "Schools are now recognizing the creative and commercial value of comics," Tyler said as she watched her Cincinnati students outline their pencil drawings in ink, filling in sections with black or gray tones. "An interest in comics and cartooning doesn't have to be a secret anymore."

Some students hope to learn skills useful for advertising, film, video game or illustration careers. Some just enjoy comics. Others want to produce comics or graphic novels.

"I started drawing comics when I was about 12, but had sort of put it aside," said Mariana Young, 25, who wants to be a professional cartoonist.

Tyler's students learn graphic design, composition, lettering, layout and how to draw figures that convey emotion. She also tries to show them how to organize their thoughts to deliver clear and concise ideas. Story lines have included the impact of nannies on a student's life and recollections of a colorful grandfather.

The director of the National Association of Comics Art Educators, Ben Towle, said it's too soon to have hard data on numbers or where new classes are being taught. But the association is fielding many more inquiries about starting classes.

"There are a lot of scattershot courses as opposed to dedicated programs, but you wouldn't even have seen that five years ago," he said.

Demand also is growing for established courses, and some schools have waiting lists to take classes.

The number of freshmen in the cartooning major at the School of Visual Arts in New York more than doubled from 2002 to last year. The Savannah College of Art and Design offered comics art in 1992 as an elective to a handful of students. The school now has nearly 300 undergraduates and 50 graduate students pursuing bachelor's and master's degrees in sequential art, also known as comics art.

Much of the credit goes to the emergence in the 1980s of graphic novels, which offer more complex story lines for more mature audiences than traditional comic books do. They typically are more durably bound and longer than the floppy comic magazines that told the tales of Superman or the antics of small-town teenager Archie Andrews and friends.

Even traditional superheroes gradually have shown a darker, more personal side, appealing to older readers. Many of those series have been collected into more colorful book formats and marketed as graphic novels.

But the young haven't lost interest.

More high schools and even grade schools are seeking advice on ways to foster student interest in cartooning, said Michelle Ollie, managing director at the Vermont school. The center has had to add a second section to its pre-college workshops to accommodate demand.

The graphic novel's increased critical acclaim and greater visibility in mainstream bookstores and libraries have contributed to the growing respect for comics art. Educators also cite the worldwide popularity and influence of Japanese comics known as manga -- written for children and adults -- and the transformation of graphic novels such as "Ghost World" into Hollywood films.

Schools have seen dramatic increases in the number of female students, attributed largely to manga and graphic novel themes that include romance, historical drama, autobiography, fantasy and mystery.

More schools also are studying comics as literature or creative writing in English departments. And although art educators and students say academic prejudice still exists, there are more academic conferences on comics, and libraries are increasingly carrying comic works.

"With graphic novels and manga, librarians have seen an upsurge in demand the last three to five years, and many say manga is their highest-circulation material," said Ann Kim, special projects and graphic novels editor for the Library Journal. "There is definitely more respect now."

The comics publishing industry has grown with the broader range of comic types and outlets. Dark Horse Comics' sales were primarily through the comic book specialty market for years, but now about half of sales are through bookstores, according to Diana Schutz, a Dark Horse senior editor.

John Lowe, chairman of Savannah's sequential art department, thinks budget concerns have kept some schools from adding comics art courses.

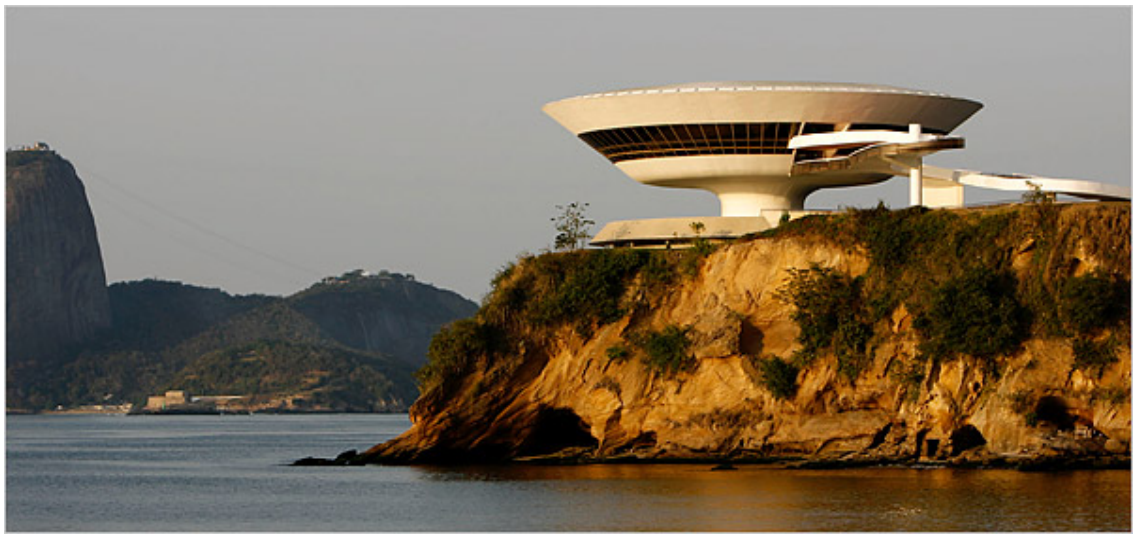
"But with schools beginning to realize that comics aren't just for juveniles and more students wanting this, I believe we'll see comics art classes opening up like wildfire in the next five years or so," Lowe said.

University of Cincinnati student Danielle Mahar, 21, credits Tyler's class with winning her a job illustrating a children's book.

"People have grown up with comics, but they don't realize just how much work and time go into them," Mahar said. "It's an art that's been unappreciated for too long, but that's all starting to change."

http://www.washingtonpost.com/wp-dyn/content/article/2007/12/25/AR2007122501107.html?nav=rss_print/style

Even if His Own Work Isn't Broken, a Brazilian Architect Fixes It
By NICOLAI OUROUSSOFF



What to do with our aging architectural heroes? What if their genius deteriorates and they begin tinkering with their own masterpieces?

A powerful case in point is the Brazilian architect Oscar Niemeyer, who celebrated his 100th birthday this month. In the 1940s, '50s and '60s he established himself as one of Modernism's greatest luminaries, infusing stark abstract forms with a beguiling tropical hedonism that reshaped Brazil's identity in the popular imagination and mesmerized architects around the globe.

In Brasília, a city that rose out of a savanna in the span of four years, he created at least a half dozen architectural masterpieces — a mind-boggling accomplishment by today's standards. Today Mr. Niemeyer is held up as one of Brazil's greatest national treasures, and he seems as spry as ever. He is at work on a cultural center in Aviles, Spain, and another in Niteroi, just south of Rio de Janeiro. He recently unveiled a new line of furniture at the Art Basel Miami fair. And last year he married his longtime secretary, Vera Lúcia Cabreira.

In recognition of the heroic scale of his accomplishments, Brazil's president, Luiz Inácio Lula da Silva, recently proposed legislation that would confer special landmark status on all of his buildings.

But the greatest threat to Mr. Niemeyer's remarkable legacy may not be the developer's bulldozer or insensitive city planners, but Mr. Niemeyer himself.

It is not simply that his latest buildings have a careless, tossed-off quality. It's that some of his most revered buildings — from the Brasília Cathedral to the grand Monumental Axis of the city itself — have been marred by the architect's own hand. And this poses an uncomfortable dilemma: At what point do we — that is, the public that idolizes him, his government and private clients — have an obligation to intervene? Or is posing the question an act of spectacularly bad taste?

To those who pay close attention, the decline in the quality of Niemeyer's work — whether resulting from a creative lull or complacency brought on by fame or old age — has been evident since he completed his Museum of Contemporary Art in Niteroi in 1996. Resting lightly on a single column at the edge of a cliff, its white saucer-shaped form looks best against the glamorous backdrop of Guanabara Bay.

What's missing, however, is the lightness of touch that could draw you deeper into the work. The concrete surfaces are crude and unfinished; the structure lacks the careful refinement that gave his early

buildings a textured significance and signaled that the architect cared deeply about the people who would inhabit them.

It's as if the museum were designed by a lesser talent who could mimic the graceful lines in Mr. Niemeyer's sketches but lacked the skill and patience to see the design through.

But if the art museum is an inferior work that mostly suffers in comparison with his early masterpieces, his midcentury projects in central Brasília are another matter: a trove of Modernist landmarks conceived on the grandest scale.

No photograph can prepare a visitor to the 1958 National Congress building for the delicacy with which it is set into the landscape. Surrounded by immaculate lawns, its form sunken slightly into the ground, it exerts a gravitational pull as you approach. A long, narrow ramp leads to a roof, where the public can stroll around the base of the bowl-like form of the chamber of deputies. That expression of the bond between a government and the people is as moving today as it was when the building was inaugurated half a century ago.

Even more refined is the nearby Itamaraty Palace, built to house the Ministry of Foreign Relations. Its soaring slender arches, rising from vast reflecting pools, are like a soothing oasis in a vast flat landscape. Inside, a circular staircase is conceived as a series of cantilevered concrete slabs. As you climb, you can practically feel gravity releasing its hold on your body, a physical sensation that reinforces the building's visual lightness.

Such structures are arranged along the plazas with the precision of pieces on a chessboard. The spaces among them convey both an airiness and a subtle tension among their varied forms, charging the whole with energy.

Completed in an era when millions of Americans were fleeing cities for the homogenous suburbs of the Eisenhower era, and Europe was still limping through its recovery from World War II, Brasília seemed to assert that erotic desire and human tenderness had a place in modern society. Better still, the stunning speed of its construction suggested that this sensual utopia was only as far away as the next cocktail.

The force of that vision reverberated across the United States and Europe. Lincoln Center in Manhattan, Empire State Plaza in Albany, the Los Angeles Music Center — all owe a debt to Niemeyer. And today a young generation versed in computer enhancement has found inspiration in his fluid concrete curves.

But if Brasília's high-flown status as a showplace of Modernist architecture is well known, Mr. Niemeyer's more recent work there has barely been discussed.

In the mid-1980s Mr. Niemeyer altered the shape of the arches that frame the main facade of his Ministry of Justice building, sacrificing the elegance of their symmetry in favor of something more whimsical. Around the same time he renovated Brasília Cathedral, considered one of his greatest works. Designed as a series of parabolic arches that splay open at the top, its form added an exuberant touch to the Monumental Axis. Mr. Niemeyer painted its exposed concrete structure white, and he replaced its towering windows with stained-glass panels designed by Marianne Peretti: changes that detract from the raw force of the building's upward thrust.

Perhaps most damaging, however, was the completion last year of Mr. Niemeyer's National Museum and National Library along the Monumental Axis. The museum's white dome, pierced at one end by a long ramp, rests on its concrete plaza with the grace of an army bunker. The interior's curved walls and lack of natural light — a shame in a climate like Brazil's — make it an uncomfortable place to view art.

The National Library, just next door, is a somber rectangular box clad in perforated screens, redolent of standard Modernist formulas. Its vaulted base, propped up on thin columns, evokes a generic government building from the 1960s.

But what's worst about these two buildings is their placement. Until a few years ago visitors could drive up a gently sloping hill before arriving at the crest, where the entire Monumental Axis unfolded in front of them. The symmetrical rows of government buildings were broken only by the exuberant form of the cathedral and the congress hall complex, its towers set slightly off center, in the far distance.

Now that view is blocked by the monotonous forms of the museum and library, and the sense of surprise is lost.

Nobody can fault Mr. Niemeyer for his desire to keep working; that his enthusiasm is undimmed at the age of 100 is cause for awe. And it's laudable that he approaches his past work without an exaggerated self-importance. Cities are not museum pieces; without constant change, they lose their cultural vitality.

Yet the value of these Modernist buildings as part of our shared cultural memory — the foundation of our identity — cannot be underestimated.

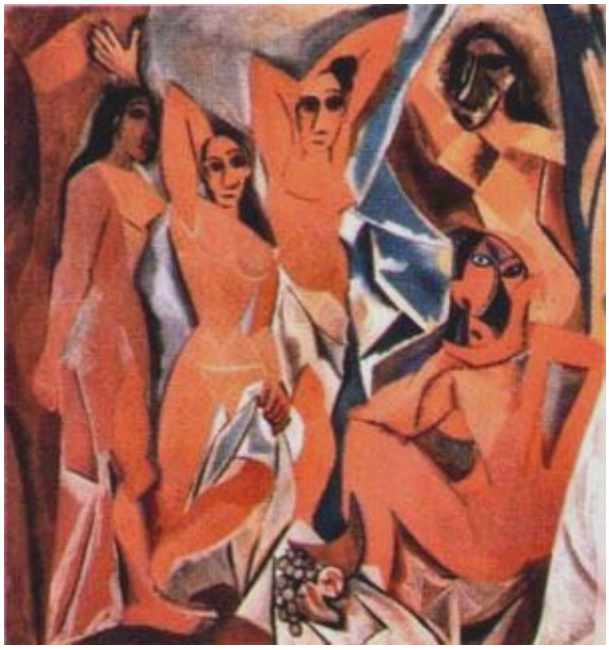
Brasília's Monumental Axis is not simply a relic from a discounted age or an emblem of a failed utopia. It is as crucial to the values of its time as the pyramids were to theirs. To mar that vision is a cultural tragedy, even if the creator's hand is responsible.

An architecture column on Wednesday about Oscar Niemeyer and the impact his new work is having on some of his earlier work in Brasília, where he has created several masterpieces, misstated the name of a major roadway and open space in the city. It is the Monumental Axis, not the Ceremonial Axis. The column also misidentified the area where Brasília was built. It was a savanna, not a jungle.

http://www.nytimes.com/2007/12/26/arts/design/26niem.html?ex=1356411600&en=facccaa8dae8150a&ei=5088&partner=rssnyt&emc=rss

Is Cubism's Revolution Behind Us?
If You Think Picasso's Work Didn't Last, Keep Looking

By Blake Gopnik
Washington Post Staff Writer
Sunday, December 23, 2007; M01



A hundred years ago, in a classic artist's hovel in Montmartre, Pablo Picasso stood looking at his great "Demoiselles d'Avignon." The product of six months' agonizing work, the picture had completely redefined what art could be. It launched the cubist revolution.

Almost from one day to the next, art's vision of reality was transformed. For the first time, that vision could be unstable, kaleidoscopic, even illegible. In Picasso's landmark brothel scene, limbs and breasts and faces broke apart into strange planes that seemed to merge into an equally disjointed background. In the case of one of Picasso's demoiselles-for-hire, you couldn't even tell if you were seeing her from back or front. In fact, you could barely tell that you were witnessing a brothel scene at all, unless someone first told you the picture's subject. Cubism didn't just change what pictures after it looked like. It changed almost everything about the way an artist could come at the world.

And here's what makes that cubist watershed even more notable: A century later, and it's hard to find a clearly cubist touch in much of anything young artists are making. Can there truly be a watershed that doesn't water what's downstream? Compare cubism to the other crucial rupture in Western art that happened 500 years earlier, when artists in Renaissance Italy came up with the nearly photographic realism of one-point perspective. One way or another, that Renaissance innovation still colors almost every image made today. Whereas with cubism, it looks like the best that we can do is argue that its influence went underground, affecting everything but falling out of sight.

Or maybe there's one other option: Maybe cubism doesn't have clear heirs today because, in trying to rewrite every single rule for how art portrays the world, it bravely set out to do something that simply can't be done. Could cubism's true greatness lie in being the most glorious, ambitious failure art has ever known? Did it set the model for the modern artist as impossible dreamer?

Not at all, says Pepe Karmel, the NYU art historian who's an expert on Picasso and the invention of cubism. He thinks cubism -- "the greatest break in the history of art after the revolution of the Renaissance" -- is absolutely visible today, almost everywhere, but that its principles have become more

important in our daily lives than in the rarefied world of high art. Just turn on your computer and watch its windows open up as one surface, on top of another, on top of another, with absolutely different content and a different vision on each one, and you've come face to face with cubism's most profound legacy. According to Karmel, all the fractures and disjunctures that we're used to in modern media were first hinted at in Picasso's Montmartre studio a century ago.

Most of today's graphic design, with all its startling adjacencies and overlapping planes, Karmel says, "is cubist in its syntax" -- proof positive that, one way or another, cubism *worked* as a new and influential way of making images.

If it's hard to point to obviously cubist moments in cutting-edge contemporary art, Karmel thinks that's a reaction to cubism's outstanding success. Picasso has attained Old Master status, which puts him off-limits in an art world that wants young masters who are trying something new. Artists still consider cubism beautiful and important, as a historical style, "but it doesn't have any particular relevance today," Karmel says. "We're not at a time when 'Ma Jolie' " -- one of the icons of cubism in its purest, most splintered form -- "speaks to us particularly powerfully."

The World Gone to Pieces

Or maybe cubism speaks so powerfully, even in contemporary art, that it becomes a deep grammar that we hardly need to call to conscious thought. That's the view of Laura Hoptman, a senior curator at the New Museum of contemporary art in New York. When cubism tore apart the centuries-old notion that a picture should depict the world in something like a realistic way ("the lie that is painting," as Hoptman calls it), it set the stage for all the wild demolitions that have come our way since. It has become something that artists "just know about" -- maybe without even knowing they know -- rather than something that their objects ever need to quote. At the end of the day, cubism's revolution, Hoptman says, "happened on a conceptual rather than a perceptual level." It concerned big ideas about how an artwork might come together, rather than any one particular neo-cubist look.

For "Unmonumental," the huge sculpture show that just relaunched the New Museum in grand digs on Manhattan's Lower East Side, Hoptman has included brand-new work that ranges from a cataract of dismembered chairs to crumbling ceramic sculptures not much bigger than your fist. Despite vast differences in their scale, materials, look and meanings, all the pieces have a cobbled-togetherness that Hoptman traces back to cubism. Rather than presenting a single crisp, coherent whole -- shades of Michelangelo's "David" or Leonardo's "Last Supper" -- the art in "Unmonumental" is constructed out of bits and bobs that never perfectly cohere, and aren't meant to. And that principled objection to anything like easy coherence marks the cubist break with absolutely everything that came before.

And yet it could be that the break is even more profound and disconcerting than either Hoptman or Karmel recognize. After all, the thing about the multiplying windows on our computer screens, or the disjunctions in the sculptures in the New Museum show, is that they aren't particularly hard to live with. They successfully communicate their information, ideas or aesthetics, whether in an office or an art gallery. Whereas the crucial thing about cubism is that, at first and at its most extreme, it clearly failed to communicate, at least in any normal sense of the word. And, unlike its heirs today, that failure was what it was about.

Even the artists themselves, like their dealers and patrons, couldn't agree on some pictures' subjects or on how they should be titled. Was a cubist portrait meant to show a woman or a man? Was a cubist canvas meant to be a studio still life or a lively cafe scene? All that mattered was the absolutely radical idea that you could never know.

"This can only end in suicide. One day, Picasso will be found hanging behind the 'Demoiselles,' " said fellow painter AndrÂ¿ Derain when he first saw the Spaniard's picture. Matisse simply brayed with laughter when he encountered it. More importantly, so did Leo Stein, Gertrude's art-collector brother and the only person who just might have bought the thing. Friends, rivals, patrons -- even the most plugged-in Paris bohemians at first simply couldn't digest a picture that sliced and diced reality the way Picasso's did.

As late as 1949, Sir Alfred Munnings, president of the Royal Academy of Arts in London, claimed that Winston Churchill had once asked him, "Alfred, if you met Picasso coming down the street would you join with me in kicking his something something something?" Munnings said he cheerfully agreed.

Fabulous Failure

Look at even the most radical works from before the "Demoiselles" -- even works from just one year before by Picasso or Georges Braque, cubism's other founder -- and there's a pretty clear sense that they give a vision of some coherent world outside. However much an earlier picture might idealize, stylize, interpret or plain distort the reality it showed, there was clearly some reality out there that it was out to capture. Even Cézanne, whose 1907 retrospective was a crucial springboard for Picasso's radicalism, never leaves behind the world beyond his canvas. With cubism, even in those first hints seen in the right side of the "Demoiselles" (its left half, finished earlier, is relatively tame), that world was so torn apart, became so nearly unreadable, that it looked as though, in this new kind of art, there simply might not be a there, there. There hasn't had to be one since.

No wonder the art world raged and laughed for decades.

And yet, the problem wasn't merely that cubism *looked* different than anything that came before. In fact, purely as a decorative style, cubism caught on pretty well. Within less than a decade, minor artists everywhere were working with cubes and fractured planes, and before long you could also see them in art deco furniture and the murals of luxury liners. The problem was that Picasso and the other truly serious supporters of cubism wanted this new kind of art to go far beyond just looking good. They wanted to try on the idea that cubism could actually work as a whole new way of taking in the world, and representing it.

It wasn't enough for the movement to take apart the realistic innovations of Renaissance art only to replace them with a new kind of semi-abstract decoration. It was supposed to replace Renaissance realism as a fully functional means for rendering reality. For all the incoherence of its look -- the incoherence that appeals to the New Museum's current crop of sculptors -- cubism seemed to make the radical claim that, with time, its art would hang together just as tightly in its vision of the world as any work by Leonardo. *That's* what *really* put Munnings and Churchill into a something-kicking mood. And that's also what made cubism turn out to be the grandest, most ambitious, most influential failure the art world has ever known.

The failure came in clearly not succeeding in its goal: Cubism has never and will never provide a useable vision of reality. The grandeur, ambition and neverending influence came from insisting we suspend our disbelief and act as though that goal were reached.

From the beginning, there was a whole welter of desperate justifications for the new cubist look. People argued that it showed things from all sides, as they "really are" rather than as they seem to be. (Philosophers have pointed out that that's about as meaningless as any claim can be.) Or that it reflected the new, realer reality of kooky Einsteinian physics, rather than the dull old three dimensions Newton had counted on. (It's the physicists who tend to object to that one. Einstein's theorems hold together in a way a cubist picture clearly doesn't.) You can still find such readings on wall texts in museums, but most experts haven't bought into them for years. Rather than simply seeing cubism as some new branch of realism, they prefer to talk about how radically cubism rewrote the rules for making art. But a few thinkers have gone further. They've realized that what really mattered in cubism is that it always conceived of those rewritten rules as though their goal was realism, however unlikely that conception might have been.

The influential scholar Yve-Alain Bois, of the Institute for Advanced Study in Princeton, N.J., has described cubism as a "semiotic system" -- meaning that it was meant to work as an entirely new language for describing how things are. It didn't just bring a new look to art, as any novel bunch of scribblings might. The elements in cubism's new look were meant to work the way that words and grammar do, serving up the world to us as a consistent package. Whether or not cubism communicated as

well as a true working language does, it gave itself the structure of a language, with all the flexibility and arbitrariness that implies.

But maybe, taking Bois's ideas one step further, it's actually cubism's *failure* to communicate that matters most. After all, it's that failure that let cubism provoke and unsettle viewers more thoroughly than any movement that had come before.

That's the step taken by art historian T.J. Clark, Bois's colleague at the top of their profession. Clark thinks that cubism takes care to set itself up as being all about a pursuit of likeness, in an almost old-fashioned mode. Its manic brushstrokes don't abandon the world; they seem to worry away at it compulsively, as though their paint "will not let go of whatever it is it sees." Look long enough at a cubist picture, and you *do* start to feel it's got some kind of single take on the subject it shows, even if in the end you can't even tell what that subject might be. In fact, cubism did such a fine job counterfeiting the feel of realism that for decades it got people running around trying to figure out precisely what its take on reality might be. But all along, according to Clark, it was the sheer chutzpah of the fakery that mattered, rather than its success.

Cubism's power and influence comes from the tension between its stunning patina of realism and the inescapable fact that its pictures will always foil you in your desire to see reality in them. Cubism, that is, is a deliberate, calculated, daring bluff, but one that asks you to have the guts to go along with it. Or, more gently, maybe it's about imagining what a completely new way of representing things might look like, in some parallel universe where such a new way could be found. Down here on Earth One, no such thing exists: To the extent that some details are recognizable in cubist pictures, it's because they're based on standard realistic tricks. But that's no reason to reject the artist's imaginings. After all, would we reject an author's vision of a planet without gravity, just because such a place could never be? And doesn't such a vision get a lot of its force from the fact that it's impossible?

"The point," says Clark, "is cubism's annihilation of the world, its gaming with it, its proposal of other, outlandish orders of experience to put in the world's place."

Believing Is Seeing

Now I think we're at the real meat of things. Cubism realizes that all great art demands some generosity on the part of its viewers. Look up at the Sistine Chapel ceiling, and you know you're not really looking up at God creating Adam -- and that it's worth pretending for a minute that you are. Cubism pushes that idea about as far as it could possibly go. It asks you to forget about what pictures can really do and to try on some artist's confounding new notions of art's capacities and goals -- "to make the best of that obscurity, and finally to revel in it," as Clark says. We all know a cubist picture fails to represent the world in anything like useful or coherent ways. But there's something to be gained imagining it could.

Cubism marks art's greatest "because I say so" moment, and thereby launches the history of fully modern art. Cubism says it's going to rewrite art's rules for representing things, and demands we go along with the unlikely fictions it creates. And that frees every later artist to make a similarly daring, even arbitrary move. Marcel Duchamp, who started out as a fine cubist painter, soon decides to present a urinal, a snow shovel, an old hat rack as art. If cubism demands that we imagine that it represents the world, why shouldn't Duchamp insist that we should see a bathroom fixture as sculpture? Ditto for Jackson Pollock, and the idea that a bunch of splattered paint could represent his id. It doesn't matter whether, in fact, it does, any more than it matters if Adam had the six-pack Michelangelo gave him. What matters is the radical act of imagining -- in Pollock's case, imagining that abstract art could do something it hadn't done before.

Even some contemporary artists can offer Picasso-size imaginings. Brooklyner Spencer Finch makes absolutely tidy art out of pure light, air, space and ideas. On the surface, it's about as far from cubism's messy materiality as anything could be. And yet Finch could be billed as one of the movement's true descendants.

One recent piece, in a big Finch retrospective now at the Massachusetts Museum of Contemporary Art, provides a portrait of Monument Valley at dusk. Sounds like a classic work of American realism, right? Except that Finch's "picture" comes from manipulating a bank of nine video monitors, each screening different moments in a classic John Wayne western, so that they flood a wall with radiance that replicates the real valley's fading light.

Finch's art doesn't truly evoke Monument Valley, any more than Picasso's "Ma Jolie" shows off a pretty girl. But both get just close enough, in unexpected ways, to give their simulations force -- more force than if they'd just bought into standard ways of showing things.

For centuries, Renaissance realism had worked so well that it had limited artists to making claims they could more or less back up: "Here's what Saint Sebastian might look like," or "Here's another likely way to see a mountain in the South of France." Cubism set them free to make much more unlikely claims. And then ask us to try them on for size.

By those standards, all the greatest artists of our day are cubists, through and through.

http://www.washingtonpost.com/wp-dyn/content/article/2007/12/21/AR2007122100734.html?nav=rss_print/style

Egypt to copyright the pyramids and antiquities

· Law would seek royalty payments around world
· Money raised to pay for upkeep of ancient sites

Rory McCarthy in Jerusalem
Thursday December 27, 2007
The Guardian

Novelty Tutankhamun pens on sale at the 02 exhibition in London. Photograph: Martin Godwin

Egypt is planning to pass a law that would exact royalty payments from anyone found making copies of the country's ancient monuments or museum pieces, including the pyramids.

Zahi Hawass, head of Egypt's Supreme Council of Antiquities, said his country wanted to own the copyright to its historic monuments and would use any money raised to pay for the upkeep of its most prestigious sites.

Hawass, an outspoken figure in the usually cautious world of antiquities, said the law had been agreed by a ministerial committee and would go before parliament, where it was expected to be passed easily. It would then apply anywhere in the world, he said.

Hawass gave no explanation as to how Cairo would begin the fraught task of tackling any copyright infringements.

He said the law would apply to full-scale, precise copies of any museum objects or "commercial use" of ancient monuments, including the pyramids or the sphinx. "Even if it is for private use, they must have permission from the Egyptian government," he told the BBC.

His comments came only a few days after an Egyptian opposition newspaper, Al-Wafd, published a report complaining that many more tourists each year travelled to the pyramid-shaped Luxor hotel in Las Vegas than to Luxor itself. The newspaper proposed that the US hotel should pay some of its profits to Luxor city.

The Luxor hotel and casino boasts its own King Tut museum, which it says includes "authentic reproductions from what has been called the greatest archaeological find in the history of the world".

Among the exhibits in the Las Vegas resort are reproductions of King Tutankhamun's sarcophagus as well as several statues, vases, beds, baskets and pieces of pottery from the tomb that was discovered in 1922.

However, Hawass said he did not regard the Luxor hotel as a copy of an Egyptian pyramid - the hotel's interior bore little relation to the inside of a genuine Egyptian pyramid.

He also said the law would not prevent artists from drawing images of the monuments or historic sites, as long as the images were not exact copies.

Hawass is a high-profile, self-promoting and successful fundraising emissary of his country's vast ancient heritage. He won an Emmy for broadcasting on archaeology in the US and has his own website, which shows him standing before the pyramids sporting an Indiana Jones-style hat and includes details of his "official" fan club.

In 2003 he demanded the permanent return of the Rosetta Stone from the British Museum. This year he said announced a tour of Tutankhamun artefacts, which have been to the US and Britain, would bring in $140m (£70.6m) for conservation work in Egypt.

Background: Egypt, Vegas-style

The **success** of the Egyptian-themed **Luxor** hotel and casino on the Las Vegas strip may be behind the new effort in Egypt to **copyright** the country's ancient archaeological wealth.

The **pyramid-shaped** Luxor hotel stands 350 feet (107 metres) high with 4,400 rooms. As well as a **casino**, cinema, restaurants, shopping hall and shows, the hotel boasts its own **King Tut Museum**. However, the Egyptian lure seems to be fading even for Vegas - the Luxor announced in July that it was to get a new, non-Egyptian look. "The pyramid always created a sense of **wow** and wonder, but the inside never delivered on that promise," Luxor president Felix Rappaport said.

Las Vegas receives about 35 million **visitors** a year, many times more than the Egyptian city of Luxor, scene of some of the country's key archaeological sites.

http://arts.guardian.co.uk/art/news/story/0,,2232295,00.html?gusrc=rss&feed=40

The World of Dance Tries Out New Moves on the Web
By JULIE BLOOM

For proof of dance's mainstream popularity on the Internet, look no further than YouTube. That site's most-viewed video, an absurdly silly stand-up comedy routine called "Evolution of Dance" (youtube.com/watch?v=dMH0bHeiRNg), still captures hit after hit. But until recently, such attention to movement on the Web has largely eluded the professional dance world.

In the past year dance has finally carved out a space for itself online as dancers, choreographers and institutions embraced the Internet with video, blogs and new Web sites. Now artists are using the medium as a way not just to build awareness for their work but also to change the nature of the form.

Driving these developments is a wave of young dance artists, among them Camille A. Brown, the 28-year-old choreographer whose new work, "The Groove to Nobody's Business," had its premiere this month as part of Alvin Ailey American Dance Theater's season at City Center. ("Groove" has its final performance on Saturday.)

Along with the pictures of friends and shout-outs to the singer Jill Scott and the actress and singer Jennifer Hudson, Ms. Brown's MySpace page, profile.myspace.com/index.cfm?fuseaction=user.viewprofile&friendID=68029298, is flooded with studio portraits, reviews of "Groove" and blog entries about the City Center engagement, as well as an up-to-date calendar of her performance schedule.

Ms. Brown, who put up her page a year ago, is one of many young artists using the Web as a way to level the artistic playing field.

"Everyone has a page," she said, "and people have contacted me about jobs through MySpace — both dancers looking for jobs and directors who want to use my work. A lot of companies have them now." These include companies as diverse as Martha Graham and the Pennsylvania Ballet.

"It's the sign of the times," Ms. Brown added. "A year ago it wasn't really geared toward business, but in the past six months it's been turning into that. The amount of contacts you can have — you can send out a bulletin about your show, and all of your friends, whether it's 1,000 people or whatever, can find out about it. You can reach so many people."

Reaching out and connecting with fellow dancers is a big part of what going online is about. When Jennifer Alexander, a corps dancer with American Ballet Theater, was killed in a car crash in early December, her colleague David Hallberg paid tribute with photos and reminisces on The Winger

(thewinger.com/words/), a blog started by Kristin Sloan, a 27-year old former dancer with New York City Ballet who is now the new-media director for the company. His posts were met with an outpouring of comments.

“The dance world, particularly ballet, is very closed and isolated,” Ms. Sloan said. “It’s supposed to be mysterious, which kind of goes against everything today. There are tons of reality TV shows; people want to know what goes on behind the scenes, and what goes into creating things.”

Ms. Sloan started by posting photos, which she took backstage, and eventually other artists, including Mr. Hallberg, wanted to contribute. “I did a lot of blogging in Saratoga in 2005,” she said. “I did it from my mobile phone, and there was no community online yet to provide links or anything. It’s not like now; you make a blog and everyone knows about it. It was literally a needle in a haystack of nothing.”

The Winger links to a range of blogs, including Great Dance (greatdance.com) and Danciti (danciti.com), and Ms. Sloan was even featured in a television commercial for the iPhone as a mobile blogger.

Dance Theater Workshop (dancetheaterworkshop.org/) rolled out the first phase of its new Web site in September. With constantly changing photographs and video, the new site is sleeker and inspired by sites as diverse as those for the Museum of Contemporary Art in Chicago, the Walker Art Center in Minneapolis and MC Hammer’s Dance Jam. The workshop put $25,000 into making the site more user-friendly.

“We knew we wanted there to be much more movement,” said Megan Sprenger, the workshop’s marketing director. “On the previous site there was almost none, and here’s a movement institution with no video. What’s that about?”

“So definitely we wanted much more motion,” she said, “and to have it be a part of the DNA, which is why we chose the changing colors. Every click, it changes colors to kind of subconsciously highlight the user’s movement through the site.”

The site now also focuses more on resources for artists and international programming. “People didn’t even know we offered grants,” Ms. Sprenger said, “and it was because it was buried in the navigation bar.”

The next phases of the rollout, expected in February and in the fall, will involve creating a members-only section, turning the artists’ directory into a collection of profile pages like those on MySpace.

“It’s a place for them to speak to each other,” Ms. Sprenger said. “Now we have a member directory that lists those people and links to their Web site if they have one. What we’re doing in the fall is making it much more depthful.” She said the site would provide members with pictures, links to video and a networking system.

The Merce Cunningham Dance Company (merce.org) is also moving much of its focus online, said Trevor Carlson, the company’s executive director. “We’ve been engaging in biweekly e-newsletters and e-mails,” he said. “The biggest thing we recognize is that Web access is really driving the way that we communicate with one another, and how can we utilize that form of technology not only to communicate but to influence our creative concepts?”

This focus is hardly surprising for Mr. Cunningham, who has spent much of his career experimenting with technology, from incorporating iPod shuffles into a dance score to using DanceForms software, which allows him to visualize and chronicle dance steps in 3-D images.

Other companies, including New York City Ballet, are putting their entire repertory online. This winter season the company will have video clips of performances and rehearsals, as well as background information for each piece on its Web site, nycballet.com. Voice of Dance (voiceofdance.com/new.cfm),

which went online 10 years ago, is restarting in January with an interactive global dance directory, dance news, a video gallery and sections devoted to various styles.

"You'll have a big directory, and you can see all these different styles of dance and all these different companies, and sample and see the video and listen to the music," said Lori Smith Sparrow, the Web site's chief executive. "People can really have a quality little snippet of what they can see onstage, and it means something, and they can have it on their computer or on their phone."

This emphasis on video is a recurring theme. "Video is dance's best marketing, and if you can use it and broadcast it to Mars, you should," Ms. Sprenger said. "So we're really trying to put up as much video as possible. Video performance art is what we're interested in, and using video in that way to promote dance."

For dance, an art form that has always struggled with issues of preservation, online video may provide a kind of solution. On MySpace, tribute pages for great artists like Anna Pavolva, Rudolf Nureyev and Margot Fonteyn include photos and video that provide a public archive of their work. Sadler's Wells in London now has its own YouTube channel, and more institutions are following suit, despite continuing questions about media rights for artists on the Web.

This fall Voice of Dance teamed with YouTube for a competition, inviting professionals and amateurs alike to submit a two-minute dance; there are plans to continue with a series of competitions online. "We got everyone from 12-year-old hip-hoppers to college dance students to professional companies submitting videos," Ms. Sparrow said. "I think that people are starting to see the real value of it."

In a kind of reverse influence, artists are using video in different ways in performance, as seen in the New York debut of Christopher Wheeldon's company, Morphoses, at City Center in October. Carefully edited rehearsals shown before each work served as mini-trailers, possibly a sign of things to come.

"With movies you get a preview," said Ms. Sloan, the blogger. "But with dance it's a huge leap of faith. For some companies it's a really expensive ticket, and you don't know what you're going to see."

"So," she added, "if there's any way of letting them know, helping them make decisions about what they might like; there's a lot of different kinds of dance out there."

http://www.nytimes.com/2007/12/29/arts/dance/29danc.html?pagewanted=2&ref=arts

Partnership in dance discipline

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Corrie Perkin | *December 28, 2007*

WHILE visiting this year's Melbourne Festival, 88-year-old American dance doyen Merce Cunningham was asked to sum up the greatest challenges facing dance as an art form.

"Dance is impermanent," he said. "I think you can preserve a movement: there are now much better ways of preserving things through computers and the technological world. But a movement or a step will never be the same because the person doing it is not the same.

"And if it is the same person, they will always do it slightly differently each time theydance."

During a rehearsal of dance company Chunky Move's latest work, Mortal Engine, which premieres at next month's Sydney Festival, Cunningham's words resound. As the company's artistic director and choreographer Gideon Obarzanek asks two dancers to repeat the same passage, you are reminded of the challenge of recreating an of-the-moment interpretation.

Mortal Engine depends on this exact replication. Obarzanek's collaborator Frieder Weiss, a German interactive software creator, and a team of lighting and sound technologists track the dancers' movements through an infra-red beam. The movements are then reproduced as patterns which appear on a large screen that dominates the performance space, or as sounds we hear.

As in Glow, Chunky Move's most recent success, the technology is part of the performance. Any deviation in the dancers' routine, therefore, prompts a sigh of frustration from the crew.

In the dark space of Chunky Move's Melbourne studio, a voice breaks the post-rehearsal silence. "The movement we had before was very good, very good," a designer tells the assembled dancers. "Can you do exactly the same thing again?"

The dancers, breathing heavily after their run-through, nod tentatively. If only that were possible, they're probably thinking.

And then there is the unpredictability of the tracking system. Unexpectedly, new pattern sequences can come from nowhere. For the crew, it is like dealing with another recalcitrant cast member.

"It has a life of its own, and it changes," Obarzanek explains during a lunch break. "It changes with what the dancers are wearing, or with the most detailed calibration of any other part of the system. In a way, no performance is really the same. And because the dancers don't have a set music pattern, the work is pliable and changing. You're never quite sure what'll happen."

As a choreographer, he must find this frustrating. "Sometimes you want to arrive at a very consistent place," he says. "You've seen something arrive perfectly at one particular time and you want to achieve it again. But the system may not allow you to do it again."

But Obarzanek, whose repertoire reveals a fascination with new ideas, movements, technologies, staging, design and music, says the upside of working with such sophisticated technology is immense.

"I often feel quite overwhelmed by what tends to happen with Frieder. The choices in this system exponentially grow what you can do but, at the same time, for me it is about limitations." How can something so brave and exciting in its potential have limitations? Obarzanek says in order for the technology to work in performance, strict disciplines need to be followed.

"In this work, it's about using fairly tight boundaries in tracking, lighting and kinetic responses, because it can very easily spiral into something like a sensory overload," he says.

The temptation to allow the technology to take over and just respond spontaneously to the dancers' movements must, therefore, be resisted. "It can be a spectacular environment, but over time it doesn't make sense, it loses the plot very quickly," the artistic director says with a smile.

Obarzanek and Weiss first met at a dance forum in Monaco in 2004. On the shores of the Mediterranean, they struck up a conversation about the possibilities of using a data projector for lighting a moving body. Three years later, their conversation continues.

The pair's first significant project was Glow, a 25-minute solo work in which dancer and video tracking system combine to present a powerful piece of theatre. Glow had its first outing at the 2006 Melbourne Festival and has since been seen by audiences in Sydney and Darwin, The Netherlands, China and the US. (After the Sydney Festival, the company will take the work to Vancouver, New York and Wellington.) Glow has proved a hit among local and international audiences and critics. "Mesmerising imagery and cumulative urgency," wrote The Australian; "Glow is a fascinating marriage between dance and technology," said The Age. Melbourne's Herald Sun declared, "The creative team has hit its mark. Bullseye."

Obarzanek is matter-of-fact about its success. "I'm very proud of Glow and it works very well, but I also realise sometimes the works that go well are the result of those works which haven't gone so well.

"It is a state of learning and trying to understand the medium and how to communicate through the medium. By their very nature, not all things are going to work. But you can learn so much from mistakes, or things that don't work."

Unlike Glow, Mortal Engine involves six dancers. It is a longer, one-hour work which focuses on relationships and the fears, nightmares and unspoken feelings that may underpin a couple's seemingly normal life together. An intense rehearsal period to meet its Sydney Festival deadline comes at the end of a busy year for the company, dominated by international touring.

"We rarely say no to any people who invite us to perform, and because a lot of our invitations come from overseas, we tend to do more performing over there than in Australia," Obarzanek says.

"I love this company," he later declares, adding that when he started Chunky Move in 1995 (it was originally a one-off dance project), "I really never imagined it would grow to what it is today".

In 1997 Chunky Move was allocated an initial three-year funding grant from Arts Victoria to position itself as Victoria's premier contemporary dance company.

"I didn't really know if I had it in me to run a company. I just remember thinking that if I could just get through the first three years and not stuff it up or have a failure, then that would be good," he says. "And now, 10 years later, we have come along a huge learning curve, and I've enjoyed all of it."

Mortal Engine will be at the Sydney Opera House from January 16 to 20.

http://www.theaustralian.news.com.au/story/0,,22976907-16947,00.html

McCall melt links the Arctic eras

By Richard Black
Environment correspondent, BBC News website, Alaska

Science can be a lonely business.

"Sometimes you'd just land and set up your equipment," recalls Carl Benson, "and the pilot sees clouds rolling in and says 'I'd better get out of here, do you want to come with me or do you want to stay'?

"So you push the 'plane round so they can take off, and you don't know when you're going to see them again."

Dr Benson is one of a band of scientists hardier than most who have spent decades working to understand the finer workings of glaciers.

Here in Alaska, the distances are so big and human settlements so rare that flying to work in a tiny chartered aeroplane is just about the only way to do it.

There is one glacier that has proved irresistible to two generations of Alaskan glaciologists - the McCall Glacier in the far northeast, in the Brooks Range on what is termed the North Slope.

I nearly went down a crevasse once on a snowmobile; I was on my own, I was absolutely scared
Gerd Wendler

It is close to the Arctic Ocean; but, importantly, it ends well short of the coastline.

The McCall is one of a handful of North American glaciers with a scientific history going back half a century. And at a time when glaciers are widely seen as canaries in the climate coalmine, the foresight of Dr Benson's forebears in setting up research bases there is proving something to applaud.

Looking back

The McCall came into scientific reckoning in 1957, when scientists were looking for glaciers to study as part of International Geophysical Year (IGY), also known as the third International Polar Year (IPY).

"The McCall is a better place to look than coastal glaciers, because there the ice goes into tidewater and signs of changes in the glacier can be masked by changes at the coast," says Gerd Wendler.

I encounter Drs Wendler and Benson and other McCall researchers at the University of Alaska at Fairbanks (UAF) in the middle of the state.

This year and next mark the fourth IPY, an apt time for the McCall pioneers to look back on what it has taught them, and how conditions for research have changed over half a century.

 The lead scientist on the original IPY project, Dick Hubley, committed suicide on the glacier just as his research was getting into full swing.

But Carl Benson and Gerd Wendler's involvement dates back to the late 1960s, and as always in science, lore and legend as well as facts and figures have passed down the generations.

Air supply

Dick Hubley's IPY team intended to over-winter at the glacier, something that has not been attempted since.

Instead, teams arrive in the spring and leave in the autumn, usually by plane, with air drops augmenting the equipment travelling with the research team.

You're operating in marginal conditions, and there's huge pressure on the pilot
Dennis Trabant

"We didn't have good electronics, so you had to run a generator for two hours to charge a battery bank in order to run the instrumentation 24 hours a day," recounts Gerd Wendler.

"And the generator needs fuel, and that was air-dropped."

Food, including eggs, and other supplies would also arrive from the sky, though not always precisely where it was intended.

"It's a narrow glacier to drop parachutes on," says Keith Echelmeyer.

"There have been lots of near misses, and so you see lots of parachutes scattered around the place."

To compound matters, the early equipment did not always function as it should. Battery life was an important issue, with data recorders slowing down as the "juice" ran out.

Not all data collection could be automated anyway.

"Back then, data loggers were humans, not pieces of electronics, and every one or six hours they had to manually record weather observations," says UAF's Matt Nolan.

"Today I have electronics making measurements every minute automatically, and I can check the weather there while drinking my tea and writing emails in my pyjamas here in Fairbanks."

Profiling the top of the glacier has also changed hugely. In the 1950s it was done with theodolites and sticks; now satellites can provide reams of quick and reliable data.

Then there were the dangers of working in small groups, or even solo, in this inhospitable terrain

"I nearly went down a crevasse once on a snowmobile," recounts Gerd Wendler.

"I was on my own, I was absolutely scared."

The assembled scientists all pick out the flights in and back, landing and taking off on the unprepared glacier itself, as the main hazard.

"You're operating in marginal conditions," says Dennis Trabant, a former US Geological Survey scientist.

"The pilots have customers that want to fly, they're sitting around in tents or motels they can't afford, or there are people who have a limited schedule, and maybe the weather's not very good but there's huge pressure on the pilot because he wants to please you and he wants to get your money."

Weather prediction may have improved since then, but the basics of getting in and back remain - the conditions will always remain something to be respected.

What's at stake?

The main scientific objective has always been to determine the glacier's mass balance - whether it is gaining or losing ice over time, whether the accumulating snowfall during the winter is more or less than the summertime melting.

The methodology is surprisingly straightforward - "rude and crude," as Matt Nolan labels it.

"You take a steam drill, bore a hole between three and nine metres in depth, and put in a stake - in fact we sometimes use pieces of electrical conduit.

"You measure how much of the stake is exposed when you put it in, then you go back at a later time and see whether more or less is now exposed."

And you do it all over the glacier, to take account of the different conditions at various altitudes, and combine the readings to derive a trend for the entire ice body.

In 1998, Professor Echelmeyer showed that the McCall had been shrinking ever since the first measurements were taken in 1957, and that the rate of loss had increased.

The glacier thinned each year between 1972 and 1993 by an average of 33cm. Subsequently, the rate nearly doubled.

Meanwhile, the average annual air temperature has risen by more than 1C.

"I think another key thing is the equilibrium line - the line dividing the upper accumulation zone, where more snow falls than melts, and the lower ablation zone, where more melts than falls," says Dr Nolan.

"Over the last 50 years, it's increased in elevation to the point at which in some years it's higher than the top of the glacier itself, so in some years there's no accumulation."

The McCall is signalling clearly that the local climate is changing, and a significant Alaskan temperature rise in the mid-1970s has been well documented.

But how much that is down to natural cycles, the Arctic Oscillation and the Pacific Decadal Oscillation, and how much to rising greenhouse gas levels is a matter for some discussion, complicated by the fact that Alaska contains three distinct climatic regions.

"The last three decades in Alaska are some of the warmest on record," says Gerd Wendler, "but over those three decades there has been absolutely no temperature increase whatsoever except in the North Slope.

"The warmest temperature ever recorded in Fairbanks dates back to 1926."

Another half century?

The details of the McCall have intrigued researchers since study began here half a century ago.

It is a polythermal glacier - the temperature varies from 0C down to what Matt Nolan terms "very cold".

Water percolates down through the upper levels, lubricating the ice flow. And beyond the snout, runoff water accumulates and freezes again - aufeis, as it is called - and unusually, it persists through the summer.

But for how much longer will the glacier itself endure the summers, if North Slope temperatures continue to rise? Assuming there is another IPY in 50 years' time, will there be anything left of the McCall for the next generation of glaciologists to study?

"If things continue on the same trend - and we don't know whether that will happen or not - I'd say it's within the realm of possibility that the bulk of the glacier will be gone in 50 years," is Matt Nolan's assessment.

Which would be a shame, given the long history of science on the McCall, and what it has told successive generations of glaciologists about the workings of glaciers and about climate change in this corner of the Arctic.

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Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/science/nature/6906280.stm

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Clue to migraine headache cause
Scientists may be a step closer to uncovering the cause of certain types of debilitating migraine headaches.

A French team observed activation in the hypothalamus region of the brain as sufferers had a migraine attack.

The hypothalamus has long been suspected as it regulates physiological responses to factors known to trigger headaches, such as hunger.

It is hoped the discovery, featured in the journal Headache, could lead to new treatments.

> **It's easy to think that migraine is a specific brain disorder, but it is a series of systems that go wrong**
> Professor Peter Goadsby
> Insitute of Neurology

The researchers, from Rangueil Hospital, used a technique called Positron Emission Tomography (PET), which contrasts functional activity within the brain, on seven patients with migraine without aura, the most common type of migraine.

Previously, activation in the brain stem and midbrain, and a thickening in some areas of the cortex were seen in migraine sufferers.

The present study may have seen a more detailed pathogenesis of the condition for two reasons.

First, timing was crucial: to capture an attack as it happened, patients rushed to hospital without self-medicating, arriving on average around three hours after the onset of the migraine.

Second, the observed headaches were spontaneous, and not chemically induced as in other laboratory studies.

Lead researcher Dr Marie Denuelle said: "When you induce the attack you miss the hypothalamic activation.

"We suspect the hypothalamus may play a role in the start of the migraine attack.

"But to prove it we would need to do similar study before the start of an attack."

Dr Andrew Dowson, director of headache services at Kings College Hospital, London, said: "It has been suggested for many years that the hypothalamus is involved in the early stages of migraine attacks.

"But there are other factors involved in the early generation of headache."

Suicide headaches

Activation of the hypothalamus had previously only been seen in cluster headache, a different and altogether more crippling condition.

Cluster headache sufferers experience headaches on a regular basis: for certain months of the year in the episodic form, or every day at regular intervals in the chronic form.

So debilitating can the attacks be that they have been dubbed "suicide headaches" because some sufferers have taken their own lives.

The new evidence for hypothalamic activation in migraine may explain why some migraine drugs, particularly the triptans, can sometimes be effective at aborting a cluster headache attack.

However, Professor Peter Goadsby, of the Insitute of Neurology at University College London, said there were distinct clinical and physiological differences between cluster headache and migraine.

He said: "The area [of the hypothalamus] reported as activated in migraine is about 10mm more anterior than the cluster headache area.

"The hypothalamus is not one thing but a collection of discrete neurons."

Professor Goadsby said a cascade of changes in the brain seemed to cause the migraine problem.

"It's easy to think that migraine is a specific brain disorder, but it is a series of systems that go wrong - a system disorder.

"There is no single holy grail. Multiple structures are involved."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7150247.stm

Published: 2007/12/25 00:02:44 GMT

Beavers could be released in 2009
Plans are in the pipeline for beavers to be released into the Scottish wild for the first time in 500 years.

Wildlife bodies have asked the Scottish Government for a licence to allow about 20 beavers to be set free in Argyll in 2009.

The Scottish Wildlife Trust and the Royal Zoological Society of Scotland believe the animals will improve the eco-system and boost tourism.

Beavers were hunted to extinction in Scotland in the 16th Century.

The mammals, best known for their dam building and tree felling skills, have been successfully reintroduced elsewhere in Europe, including parts of Germany and the Netherlands.

The licence application submitted to the Scottish Government is for a trial reintroduction of European beavers in the Knapdale Forest in Mid-Argyll.

Important role

The bid follows the publication of the results of a two-month long local consultation.

The survey showed almost three quarters of people in Mid-Argyll backed the beaver plan, but more than half of those living directly around Knapdale were opposed to the scheme.

Beavers are thought to play an important role in aquatic and wetland eco-systems, and on the wider biodiversity of the area in which they live.

Allan Bantick, chairman of the Beaver Project Steering Group and trustee of the Scottish Wildlife Trust, said: "We are delighted that this licence application has now been submitted and we look forward to conducting a full scientific trial of the first formal reintroduction of a native mammal into the wild in the UK.

"The first beavers could be reintroduced to Mid-Argyll in spring 2009.

"Once we get the green light from the Scottish Government we will develop the detailed plan for the trial taking into consideration issues raised during the consultation."

We anticipate a great deal of public interest in the long awaited return of the beaver to Scotland
David Windmill
Royal Zoological Society of Scotland

David Windmill, Chief Executive of the Royal Zoological Society of Scotland, said: "We are very keen to see this trial go ahead.

"We will work with all the various stakeholders involved in the project to make it a success and to benefit from the contribution the beaver can make to improving our natural ecosystems and habitats as well as encouraging tourism.

"We are very pleased to have so much support for this project and anticipate a great deal of public interest in the long awaited return of the beaver to Scotland."

Approval for the trial reintroduction would see 15 to 20 beavers from Norway introduced to the trial site following a period of quarantine.

The ultimate aim of the trial would be to monitor the success and impact of the beaver reintroduction before the animal is released elsewhere in Scotland.

In January 2007, the Scottish Government and Scottish Natural Heritage launched a wildlife strategy that included restoring the European beaver to Scotland.

The Scottish Beaver Trial partnership hopes that the government will make its decision on the licence application in spring 2008.

A previous licence application for a trial reintroduction of beaver in Knapdale, submitted by Scottish Natural Heritage was rejected in 2005.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/uk_news/scotland/7158210.stm

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Charity backs dementia taggings
Proposed electronic tagging of dementia sufferers, with their agreement, has been backed by the Alzheimer's Society.

The charity said the plan could empower patients by allowing them to wander, but called for a debate on the ethics of gaining consent.

Many dementia sufferers feel compelled to walk about outside - the society says 60% may wander, and 40% have got lost at some point.

The government has said tagging could allow people to lead "fuller lives".

'Careful balance'

Science Minister Malcolm Wicks first proposed the measure in April.

He said sufferers would gain the freedom to "roam around their communities" without their families suffering the anxiety that such wandering can currently cause.

The chief executive of the Alzheimer's Society, Neil Hunt, agrees that the technology "could offer benefits to people with dementia and their carers".

> **The problem with this is that you could see second-class care using it as a way of making life easier for carers**
> Dr Richard Nicholson
> Bulletin of Medical Ethics

But he stressed: "There is a careful balance to strike between empowering people and restricting their movement and this technology can certainly never be used as an alternative for high quality dementia care."

Dr Richard Nicholson, editor of the Bulletin of Medical Ethics, said the scheme had potential pitfalls.

He told BBC Radio 5 Live: "The problem with this is that you could see second-class care - using it as a way of making life easier for carers rather than as a way of making life safer or more pleasant for the person with Alzheimer's."

He said the scheme was "not something that ought to go ahead without parliamentary debate and possibly even legislation".

Peace of mind

Kate Ghosh, director of the British Institute of Human Rights, said the use of a tracking system should never be "a substitute for proper resources".

"Some people are rightly questioning this and are wanting to be very sure that it's not going to be something that would just be used for convenience when there could be other measures that could be taken," she said.

Such measures could include those to help "protect people for their own safety but also, perhaps more fundamentally, to enable them to carry on being as free as they possibly can", she added.

Tagging could potentially allow people with dementia the chance to retain their freedom and help to keep them safe at the same time
Elizabeth McLennan, Help the Aged

Elizabeth McLennan, policy officer for Help the Aged, said electronic tagging was a good idea in principle.

"But it must always be determined by choice - it cannot be the case that a diagnosis automatically goes hand in hand with a tag," she said.

"If older people get confused and wander off it can put them in danger and cause a huge amount of distress and worry for their family. Tagging could potentially allow people with dementia the chance to retain their freedom and help to keep them safe at the same time."

The British Geriatrics Society (BGS), an association for doctors practising geriatric medicine, said tagging could be of benefit to patients, carers and families but warned against rushing into it.

BGS chief executive Alex Mair said: "It is a laudable objective but would have to be extremely carefully worked out in advance as it could be open to abuse."

The Alzheimer's Society said decisions about whether to use a tracking device should be made in conjunction with the person with the disease in the earlier stages of dementia.

Chief executive of the Alzheimer's Research Trust, Rebecca Wood, said she would want health workers to talk to people at an early stage to get informed consent.

Global Positioning System

Marilyn Loveday, who cares for her husband, Christopher - who has Alzheimer's - said she thought tagging could prove invaluable for carers.

She told BBC News: "In the earlier stages, I would have welcomed it because he just used to leave the house and we didn't have a clue where he was and quite often he'd be gone for hours."

Tracking devices use the Global Positioning System (GPS) to locate the wearer.

There is currently a growing market for devices which allow parents to monitor their children's whereabouts, but even here the issue has proved controversial.

There are currently 700,000 people living in the UK with some form of dementia. This is predicted to reach 1.7m by 2051.

Your comments

I am 78 years of age and enjoy a very full and active life. I am in a position to say that I would welcome the use of a tag on me should it ever be needed. I accept there may be some negative aspects but the plusses outweigh any negatives. Ask us oldies about these issues while we are still in a position to make our own valued judgments. And forget the advice of the "Do Gooders" of this world
Neal Martin, Gladstone, Australia

This is not the right solution in every case, but it must be a relief to some families and their loved ones who get disorientated and into dangerous situations - and it is preferable to committing such unfortunate folk to care homes who are not designed for dementia and force anyone showing strong signs of it to leave. I sometimes wonder if their attitudes do not aggravate the problem - is tagging "worse"?
K Watson, Stockport, UK

When Mum lived with us I had to keep doors and windows locked and the keys hidden as we lived in a busy city. As a country woman she loved to walk and this put her in real danger. Imagine trying to also bring up two little girls (aged 2 & 5) in these surroundings. A tagging device would certainly have helped - and maybe Mum wouldn't have been so frustrated by her restrictions.
Ann Payne, York

As a retired trained nurse I privately nursed a patient in her own home (on a farm) and daily, as I left the room to make her morning coffee she, (the lovely lady) would go at quite a speed down the farm's lane with me running after her. So, yes I think the idea of a 'tracking' device would be very helpful. Please leave the word 'tagging' for prisoners.
Laura Taylor, Northampton, Northamptonshire

My Gran suffered from dementia and in the period when we just couldn't get anyone to listen or help she used to wander off and not have a clue where she was. It was a nightmare. Tagging, if policed properly, is a wonderful idea and will heighten the safety of this so very vulnerable group.
Abigail Conway, Truro

My Grandmother who is 85, suffers with dementia and wanders off if she gets the opportunity. It does get very frightening for family members when she goes missing. Although she does have day care, she will still wander as she can't be supervised 24 hours a day. Electronic tagging in this circumstance would be incredibly helpful. I appreciate that this could be seen as an infringement of her human rights, but her safety at the end of the day is the most important thing.
David Winecor, Leeds, UK

My Father had Alzheimer's and passed away 5 years ago. He went "wandering" several times. My parents live in north London and my dad was once found in Kent. To this day we don't know how he managed that. I think tagging is a fantastic idea, I remember how panicked, fearful and worried my family were when he disappeared, having to call the police etc.
Paula Higgins

A tagging system would certainly reassure the families and carers of an Alzheimer's sufferer. How well it would work in practical terms for the person concerned will be variable. My Mum, who has Alzheimer's, is now in a home but her reaction to anything new (such as a plaster cast when she broke her arm) was to try to rip it off, as she couldn't understand it's purpose. It might work for some, but not for all.
Sue Sandy, Rainham, Kent

My Father had Alzheimer's and it runs in the family so there is a chance I will get it. I would certainly be in favour of having one on my person if I did eventually contract the disease. I am 53 years old at present.
Geoff Tucker, Pilley, Hants

My father who sadly passed away in 2004 had Alzheimer's and would sometimes go out by himself, which was very worrying for all of us. Tagging him wouldn't have solved the problem however, it would have given us reassurance that we could find him if he did get out. I think it is a good idea.
Marie, Acton, London

My late Mother in Law had Alzheimer's and wandered, electronic tagging would have saved family members a great deal of worry as she regularly disappeared and was brought home by the police on a number of occasion and once by Blackpool Corporation as she had got on a bus.
Steve Prosser, Bradford. UK

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7159287.stm

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