FOCUS

News from Harvard Medical, Dental and Public Health Schools

January/February 2011 ▶ focushms.com

Forest elephants (shown) in Africa have been confirmed as a new species of elephant, distinct from the larger savanna elephant.

Nicholas Georgiadis

Evolutionary Genetics Unravels Ancient Mysteries

In popular culture, genetics is seen as a tool for predicting your future health. But increasingly, scientists use it to understand the past, as two recent papers from the lab of HMS associate professor of genetics David Reich demonstrate.

In one study, the sequenced genome of an ancient finger bone taken from a Siberian cave showed that modern humans are not related to the ancient cave dwellers. In the other, researchers found that Africa has two, not one, species of elephant—a finding that raises issues for conservationists.

THE ELEPHANTS IN THE ROOM

In the elephant study, Reich and colleagues at the University of Illinois and the University of York in Britain used genetic analysis to prove that the African savanna elephant and the smaller African forest elephant have been largely separated over several million years and thus comprise separate species.

The researchers, whose findings appeared online in *PLoS Biology* on Dec. 21, compared the DNA of modern elephants from Africa and Asia to DNA from two extinct species: the woolly mammoth and the mastodon. This study was the first genomic comparison of the mastodon, the Asian elephant, the African forest elephant, the African savanna elephant and the woolly mammoth.

Limited to DNA samples from only a single elephant in each species, the researchers still had enough data to traverse millions of years of evolution to the time when these elephant species diverged.

"We had a major challenge to extract DNA sequences from two fossils—mammoths and mastodons—and line them up with DNA from modern elephants over hundreds of sections of the genome," said

See "Genetics," page 6

At the Forum's launch were (from left) CNN founder Ted Turner, former *Washington Post* health editor Abigail Trafford and HSPH Dean Julio Frenk.

Justin Ide/Harvard News Staff

School of Public Health Launches Global Forum

As a tropical storm bore down on Haiti in November 2010, relief agencies and government officials braced for flooding and the spread of a recent cholera outbreak. Given the desperate poverty, ongoing earthquake recovery efforts and the scarcity of health care providers, many wondered what could be done to contain the epidemic.

See "Forum," page 6

Speeding the Path to Professorship

Streamlined promotions process expected to average less than a year

The average time for promotion to professor is expected to drop sharply under a new, streamlined promotion process announced in February by Harvard Medical School Dean Jeffrey S. Flier.

Under the revised process, developed by a task force appointed by Flier in July of 2009—and supported by Nancy Tarbell, dean for academic and clinical affairs, and Maureen Connelly, dean for faculty affairs—the majority of professorial promotions should take less than one year from the time of initiation to when a decision is made.

This expedited process consolidates many steps that formerly took place at the hospitals and at HMS into a single, more efficient model. The number of steps will be reduced by approximately 50 percent under the new approach.

"The changes to our promotion process will allow Harvard Medical School to reward our most outstanding faculty with timely recognition of their

See "Promotions," page 6

Paul Farmer Appointed University Professor

Harvard bestows top faculty honor on humanitarian leader, scholar

Paul Farmer, an anthropologist and physician whose research has helped to revolutionize the strategies for treating infectious diseases in some of the poorest corners of the world, has been named a University Professor, Harvard's highest distinction for a faculty member.

"Paul Farmer is best known to the public as a pioneering humanitarian," Harvard President Drew Faust said in announcing the appointment Dec. 16. "But among scholars he is equally well known for his research and writing, which have

See "Farmer," page 8

INSIDE

istockphoto.com/spxChrome

Mortality Rates Unreliable Measure of Hospital Quality

Researchers at Harvard Medical School and Massachusetts General Hospital have found wide disparities among four common measures of hospital-wide mortality rates, with competing methods yielding both higher- and lower-than-expected rates for the same Massachusetts hospitals during the same year.

The findings, published Dec. 23 in a special article in the *New England Journal of Medicine*, stoke a simmering debate over the value of hospital-wide mortality rates as a yardstick for health care quality. The measure, which compares a hospital's actual patient death rate to statistical predictions, is reported publicly in countries including England, Canada and Denmark, but some hospitals and policy experts have questioned its value due to the complexity and variability of diagnoses.

"It's troubling that four different methods for calculating hospital mortality rates as a measure of quality should yield such different results," said lead author David Shahian, HMS professor of surgery at Massachusetts General Hospital. "Measurement theory—not to mention plain common sense—suggests there is a problem."

The potential for performance evaluation to improve both the quality and the cost of health care has fueled interest in provider "report cards," including mandates by state and federal law.

In 2008, the Massachusetts Division of Health Care Finance and Policy engaged researchers Shahian, Lisa Iezzoni, HMS professor of medicine at Mass General, and Sharon-Lise Normand, HMS professor of health care policy (biostatistics) and professor in the Department of Biostatistics at the Harvard School of Public Health, to evaluate four vendor-created measures of hospital-wide mortality. The state was looking for a means to measure hospital quality for the public report cards mandated under its 2006 health care reform law.

"The problem is that we were measuring the success of each of these measures against a gold standard we simply do not have: an objective measure of hospital quality."

The researchers compared four measures of hospital-wide mortality provided by commercial vendors. These vendors all believed that their hospital-wide mortality measures were an accurate reflection of hospital quality. Each vendor received identical data—three years of patient discharge data from all 83 general acute care hospitals in Massachusetts, representing 2.5 million discharges—and used the data to calculate each hospital's mortality rate. The researchers then compared results.

"The results of the horse race are that it's really not clear who won," said Iezzoni, who is also the director of the Mongan Institute for Health Policy at Mass General. "The problem is that we were measuring the success of each of these measures against a gold standard we simply do not have: an objective measure of hospital quality."

Without that gold standard, the researchers were left to compare vendor tools with one another. Their conclusion: Methods and results varied widely. For example, every tool excluded some discharges from its calculations based on the details of each. But where one tool excluded 5 percent of all discharges, another excluded 72 percent.

Even so, a high degree of convergence—different methods yielding similar final results—could have supported the validity of this approach to estimating hospital quality. But that's not what researchers found. For example: Of 28 hospitals designated by one method as having higher-than-expected hospital-wide mortality in 2006, 12 were simultaneously classified as having lower-than-expected mortality by at least one other method.

In August, the researchers told the state that they could not recommend any of the four vendor-created tools. "But the results should not be interpreted as an indictment of any particular technique," said Normand. "Rather, they call into question the concept of measurement of hospital-wide mortality.

The authors are longtime advocates of performance assessment and public reporting to provide transparency and accountability in health care.

Normand developed the statistical models used by Medicare and Medicaid for public reporting of heart attack, heart failure and pneumonia mortality rates. Shahian has been a leader in the public reporting initiative of the Society of Thoracic Surgeons. Together, they were leaders in developing and implementing public report cards for coronary artery bypass grafting (CABG) surgery and percutaneous coronary intervention (PCI) in Massachusetts.

But where mortality rates may reflect clearly the quality of care for some procedures, like coronary bypass, they may reveal less about care for other conditions, such as major trauma, the researchers said.

— R. Alan Leo

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Conflict disclosures and funding sources appear online.

Recent books written or edited by members of the HMS, HSPH and HSDM faculty or staff may be submitted to *Focus* at the address above. Books received by Feb. 18, 2011, will be featured in the next book section.

We invite letters from our readers, which should be brief and include a signature, address and daytime phone number.

To Sink or Swim: A Sperm's Tail

Mammalian sperm typically enter the vagina by the hordes. Yet, only a few sperm—if any—among 200 million brethren win. To win the fertilization contest, a sperm must be the most forceful swimmer. In a study with implications for human infertility and male contraception, David Clapham and colleagues at Children's Hospital Boston and HMS discovered a novel protein in mouse sperm called CATSPER delta and its encoding gene, *Tmem146,* that are essential for sperm motility.

The findings, reported Jan. 11 in *Nature Communications,* identified CATSPER delta as a new and essential component of the sperm-tail-specific CatSper channel. Clapham, HMS professor of neurobiology and pediatrics and the Aldo R. Castaneda Professor of Cardiovascular Research at Children's Hospital, and others previously characterized the CatSper channel to be a complex calcium-selective ion channel and showed that calcium currents generated across CatSper channels bring about the whip-like motions of the sperm. This CatSper-induced hyperactivated motility of the sperm is essential for egg penetration. The researchers suggest that CATSPER delta facilitates the assembly and/or transport of the channels to their correct locations in the sperm tail, even if CATSPER delta may not form the inner pore of the CatSper channel per se. As predicted, when CATSPER delta is disrupted, the sperm produced are immobile and the male mice are infertile.

— Raji Edayathumangalam

Bigger Bang for Fewer Bucks

Now more than ever, it's in the synthetic biologist's DNA to make cheap, high-quality, high-throughput (HTP) synthetic genes available for applications in research and biotechnology. Two new reports, both connected to the laboratory of George Church, HMS professor of genetics and recipient of the 2010 Bower Award, describe innovative technological advances to do just that.

The costliest steps during gene synthesis include the initial step of oligonucleotide (oligo) synthesis and final step of sequencing the assembled product. In the December 2010 issue of *Nature Biotechnology,* the authors detailed methods to drive down the costs of gene synthesis by ten-fold to less than one cent per nucleotide. First, researchers replaced traditional, expensive column-derived oligos with inexpensive HTP microarray-based oligos of improved accuracy. Second, the authors report two approaches to improve the quality of the microassay oligos. Sriram Kosuri, a postdoctoral fellow in Church's laboratory, and team extracted, or amplified, specific oligos from the heterogeneous pool by PCR prior to gene assembly, while Mark Matzas of the German biotech Febit and collaborators used preselected oligos for assembly into larger genes. Finally, researchers significantly reduced error rates by synthesizing microarray oligos as long as 200 bases.

Despite these advances in cost and accuracy, the synthesis of 'difficult' sequences still poses a challenge. Nevertheless, these latest milestones will make it possible to synthesize larger genes, genomes and libraries faster and cheaper.

— Raji Edayathumangalam

Jennifer Sarbahi

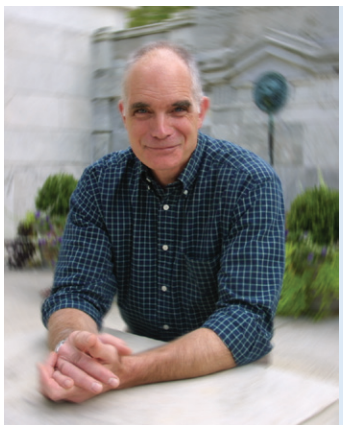
Above: Justin Zaghi led an effort to prevent neural tube defects in Nicaragua by advocating for the fortification of rice with folic acid. He is currently working with the Nicaraguan Ministry of Health, international NGOs, and the local rice industry to make fortified rice available to the Nicaraguan population.

Left: Gayathree Murugappan is involved in the development of nanoparticles to probe the liver microenvironment and report on protease activity. This technique provides a window into the development of liver fibrosis, with the ultimate goal of developing an alternative to the current method of diagnosis, the biopsy.

Student Researchers Take Spotlight on Soma Weiss Day

Harvard medical students presented more than 100 research and international projects Jan. 13 at the 71st annual Soma Weiss Student Research Day. Held annually since 1940, the event is named for Weiss, an inspiring teacher and physician and ardent supporter of student research, who died in 1942.

Jennifer Sarbahi



To Bob Neal, Thank You and Best Wishes

With a gentle wit and an insatiable curiosity about science, Robert Neal served as the editor of Focus for almost 15 years. His colleagues recently bid him farewell as he assumed a leadership post in science communications at Memorial Sloan-Kettering Cancer Center in New York City. We are grateful to him for his many lasting contributions—and wish him the very best on his next adventure.

Paper Chase

RECENT PUBLICATIONS FROM HMS RESEARCHERS

With this issue, *Focus* introduces a selection of new studies and review articles by researchers from across the HMS community. (Find a broader index at focushms.com.)

CANCER GENOMES EVOLVE BY PULVERIZING SINGLE CHROMOSOMES
Meyerson M, Pellman D, Dana-Farber Cancer Institute, Harvard Medical School, Broad Institute of Harvard and MIT

Review: A report in this issue describes "chromothripsis," a new mechanism for genetic instability in cancer cells. Chromothripsis appears to be a cataclysmic event in which a single chromosome is fragmented and then reassembled. The phenomenon raises important questions of how chromosome rearrangements can be confined to defined genome segments. *Cell.* 2011 Jan 7;144(1):9-10.

FUNCTIONAL ANTAGONISM BETWEEN HISTONE H3K4 DEMETHYLASES IN VIVO
Di Stefano L, Walker JA, Burgio G, Corona DF, Mulligan P, Näär AM, Dyson NJ. Massachusetts General Hospital Cancer Center, Harvard Medical School

Relevance: These findings illustrate the complexity of functional interplay between histone demethylases in vivo, providing insights into the epigenetic regulation of heterochromatin/euchromatin boundaries by Lid and dLsd1 and showing their involvement in Notch pathway-specific control of gene expression in euchromatin. *Genes & Development.* 2011 Jan. 1;25(1):17-28.

HEALTH CARE AND EQUITY IN INDIA
Balarajan Y, Selvaraj S, Subramanian S. Harvard School of Public Health

Relevance: Use of equity metrics in monitoring, assessment and strategic planning; investment in development of a rigorous knowledge base of health-systems research; development of a refined equity-focused process of deliberative decision-making in health reform; and redefinition of the specific responsibilities and accountabilities of key actors are needed to try to achieve equity in health care in India. *Lancet.* 2011 Jan 10.

BIOPHYSICAL MECHANISMS UNDERLYING OLFACTORY RECEPTOR NEURON DYNAMICS
Nagel KI, Wilson RI, Harvard Medical School

Relevance: The responses of olfactory receptor neurons to odors have complex dynamics. Complex responses can be understood as a consequence of how the stereotyped spike filter interacts with odor- and receptor-specific transduction dynamics. However, in the presence of rapidly fluctuating natural stimuli, spiking simply increases the speed and sensitivity of encoding. *Nature Neuroscience.* 2011 Jan 9.

CHARTING HISTONE MODIFICATIONS AND THE FUNCTIONAL ORGANIZATION OF MAMMALIAN GENOMES
Zhou VW, Goren A, Bernstein BE, Howard Hughes Medical Institute, Massachusetts General Hospital, Harvard Medical School

Review: Here we review a selection of recent studies that have probed histone modifications and successive layers of chromatin structure in mammalian genomes, the patterns that have been identified and future directions for research. *Nature Reviews Genetics.* 2011 Jan;12(1):7-18.

Center for Primary Care Gets to Work

HMS Dean Jeffrey S. Flier announced Jan. 13 that he has appointed a search committee charged with identifying a nationally recognized leader in primary care to serve as director for the HMS Center for Primary Care. This newly created position has been advertised, and the committee will begin work this month.

Interim co-directors David Bates, HMS professor of medicine at Brigham and Women's Hospital, Andrew Ellner, instructor in medicine at Brigham and Women's Hospital, and Russell Phillips, HMS professor of medicine at Beth Israel Deaconess Medical Center, will share responsibility for the initial development and implementation of new programs.

Their experience leading the Primary Care Advisory Group as well as spearheading other key initiatives designed to improve primary care education, research and delivery will guide the center's launch. The interim co-directors will soon announce the first of many new funding opportunities and convene community meetings to guide and advance the work of the center.

Funding opportunities will support faculty and students seeking to pursue innovations in primary care delivery, education and research. Meetings will engage the primary care community—and others with an interest in this field—in helping develop priorities for the center that facilitate and inspire the work of those with an interest in the redesign of primary care. Also, work is under way to plan and create both a virtual home for the center—a primary care website—and a physical home on the HMS campus.

— David Cameron

Seeking Talent

HMS is now hiring an Interim Executive Director of Administration for the Center for Primary Care. Learn more at hr.hms.harvard.edu.

A Call for Access to Care

Challenges in American Medicine Explored by Visiting Surgeon L.D. Britt

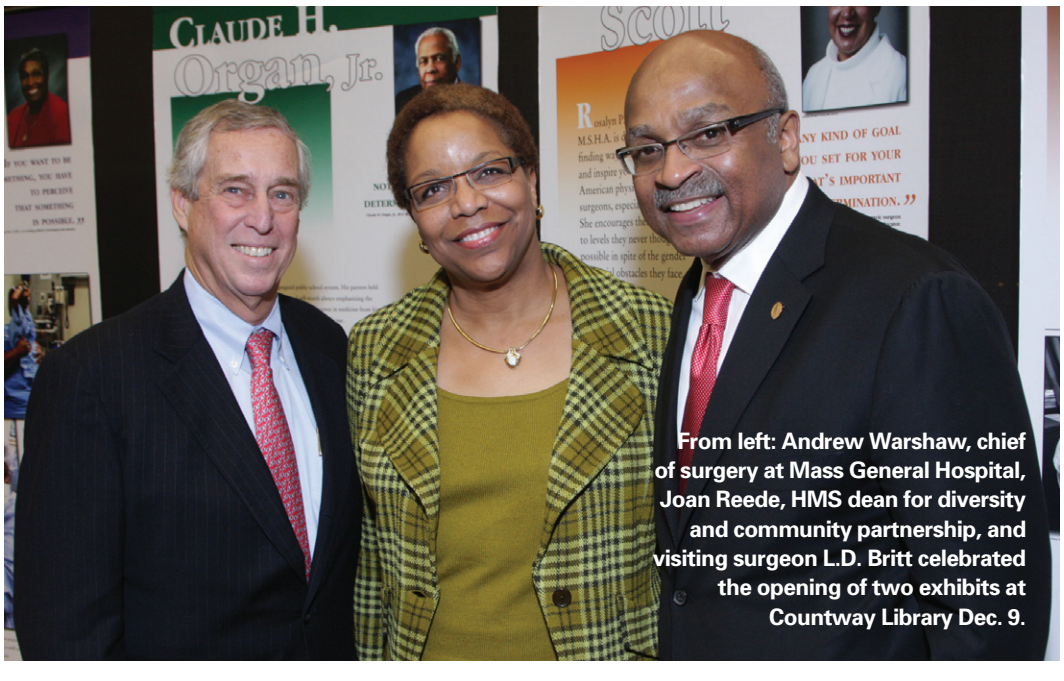
Patient care is a three-legged stool whose two stable legs of quality and safety are compromised by a weak third leg—access—renowned surgeon L.D. Britt, (HMS, HSPH '77) told health care professionals Dec. 9. Britt delivered a lecture celebrating the opening of two exhibits in the Countway Library: the National Library of Medicine's "Opening Doors: Contemporary African American Academic Surgeons" and a Countway companion exhibit, "Bridging the Gap: Contributions of African American Surgeons at Harvard."

Britt, who is a recipient of the American Association of Medical Colleges' Robert J. Glasser Distinguished Teaching Award—one of the nation's highest awards in medicine—and the first African American in the country to hold an endowed chair in surgery, called on physicians and policymakers to pursue fundamental reforms in his lecture, "American Medicine: The Great Challenges and Dilemmas."

After demonstrating some of the many ways that socioeconomic status and geography affect health and mortality rates, Britt introduced the "three-legged stool" model, which has patient care at the top supported by quality, safety and access. The system "can't stand for long because we don't have access," Britt commented, noting that 1,168 counties in the U.S. currently lack general surgeons. "We have the best quality health care in the world. The problem is access."

Britt addressed challenges ranging from workforce shortages to the rising cost of health care to questions of effectiveness and transparency to the nearly 50 million people uninsured in the U.S. He proposed enhancing the health care workforce, reducing inappropriate expenditures, promoting effective and proven care, reforming medical liability laws, creating universal coverage and advancing information technology.

He also stressed the importance of recruiting and retaining students from diverse backgrounds to medical programs to improve the nation's health care system. "You won't have an optimal business if you don't have diversity," he said. "We need to take a multifaceted approach to this problem and we need minority representation. Dedication is a universal language." *—Valerie Wencis*



From left: Andrew Warshaw, chief of surgery at Mass General Hospital, Joan Reede, HMS dean for diversity and community partnership, and visiting surgeon L.D. Britt celebrated the opening of two exhibits at Countway Library Dec. 9.

Jeff Theibauth

Steve Gilbert

Roy Ahn (center), joined by his wife, Amy Hintzman (right), and son, Charlie, accepts a Shore Fellowship certificate from Dean for Academic and Clinical Affairs Nancy Tarbell.

Fellowship Helps Junior Faculty Balance Work and Family

For Roy Ahn, life is a joy—and sometimes a struggle.

The father of 1-year-old Charlie is blessed with a blossoming research career at the Division of Global Health and Human Rights in Massachusetts General Hospital's Department of Emergency Medicine. He's in the same boat as many young Harvard researchers, handling the duties of a young family even as the pressures to perform professionally are soaring.

"We're just constantly juggling our schedule and finances to make child care in Boston work," said Ahn, an HMS instructor in surgery.

When he's not shuttling Charlie to and from day care or playing tag-team parent with his wife, Ahn is working on several projects at Mass General, including work that seeks to understand how global health activities of nonprofit hospitals fit into their conception of providing community benefits, something the hospitals are required to do to retain their nonprofit status.

To the rescue of Ahn and others comes the Eleanor and Miles Shore 50th Anniversary Fellowship Program for Scholars in Medicine. The program is aimed at junior researchers in the "squeeze years" when young families and blossoming research careers both demand attention. Young physicians and scientists during these years often have to teach, conduct research, treat patients, publish research articles, write grant applications and care for their little children.

The program, established in 1996 to honor the 50th anniversary of the admission of women to HMS, provides fellows with between $25,000 and $50,000 for one or two years. The money is intended to be used to buy protected time to pursue a key activity, whether finishing a grant proposal, completing important research or concluding a manuscript. The money can be used, for example, to hire lab help that a fellow would otherwise not be able to afford. The program has 80 fellows this year. A complete list of fellowships and recipients is available online: www.fa.hms.harvard.edu/faculty-resources/faculty-development/fellowships/50th-anniversary-shore-fellowships.

—Adapted from a report in the Harvard Gazette
by Alvin Powell

Steve Gilbert

Kristina Williams, Class of 2013, channels Dean of Students Nancy Oriol in her heyday as a former HMS medical student.

A Grade-grubber's Dance Across Time and Space

Choreography and Laughter Crackle in Second Year Show

A high-achieving first-year HMS student has but one option when he receives a mediocre grade on an exam: go back in time to make things right. At least, that's how it played out onstage during the Class of 2013's Second Year Show, titled "Marginal Past: Failure Is Not an Option."

Produced by Jack Varon and directed by Andrew Sun, "Marginal Past" cast its satirical net far and wide, skewering everyone from Dean Jeffrey S. Flier to those "Save the Children" people who block the path to Starbucks.

Loosely based on the film *Back to the Future,* "Marginal Past" centers on Bo, a first-year gunner who is sent reeling after receiving a "marginal pass" grade on his genetics exam. Finding little comfort in assurances that grades don't matter at HMS, Bo (C. Terrell Cummings) travels back in time with the assistance of the Ghost of Marginal Past, or GOMP (Walter Chen), a nerdy HST student who also happens to have built a working time machine.

The time machine has some glitches, however, and it takes the pair all the way back to the beginning of time, where they encounter the likes of Adam (Derek Erstad), Evelyn (Rena Xu) and a God-like figure reminiscent of a certain kidney expert and Human Physiology lecturer at modern-day HMS (Omar Pardesi). In fact, as Bo and GOMP travel through the ages, they encounter younger versions of HMS faculty wherever they go—in some cases much younger, such as Trudy van Houten (Kara Johnson) and Cindy McDermott (Christine Eckhardt) in ancient Rome. They also run into some familiar faces among the student body when they visit HMS in the 1970s, including a fetching young woman nicknamed Kat who Bo just can't place but who probably rings a bell to any HMS first year.

Dance was the Class of 2013's strong suit, and the choreography clever. In "September," a take on the Earth, Wind and Fire song of the same name, dancers from different eras strutted their stuff, including two caveman who put their own primitive spin on the number. Dancing cadavers in the anatomy lab during "Stayin' Alive" also entertained, along with lyrics like, "Well, you can tell by the way I've sold my soul/That I've lost my chance to unenroll./I'm Harvard property for good./It's been my dream since childhood." And it wouldn't be the Second Year Show without a rousing bhangra dance, which closed this year's performance.

"Marginal Past" also included some musical standouts. Veronica Mitko nailed Lady Gaga in "Bad Bromance," and Christian Strong's portrayal of Alvin Poussaint singing Marvin Gaye's "Let's Get It On" was notable not only for his vocal abilities but also his superb comic timing. Bo eventually learns to find balance in his life, but not before members of the HMS community get their traditional Second Year Show roasting. Not even Atrium Café manager Franceny Bedoya was spared. During scene changes, the audience was treated to spoofs on the television miniseries "Boston Med."

As usual, the breadth of musical and theatrical talent among the future doctors and scientists impressed. This year's performance was such an enjoyable romp that one was left hoping for a Third Year Show.

—Emily Lieberman

Stephanie Mitchell/Harvard News Staff

Genetics

Continued from page 1

research scientist Nadin Rohland of the Department of Genetics at Harvard Medical School.

"The divergence of the two species took place around the time of the divergence of the Asian elephant and woolly mammoths," said Michi Hofreiter of the University of York. "The split between African savanna and forest elephants is almost as old as the split between humans and chimpanzees. This result amazed us all."

Many naturalists consider African savanna elephants and African forest elephants as two populations of the same species, despite the significant size differences. The savanna elephant weighs between six and seven tons, roughly double the weight of the forest elephant.

DNA analysis revealed a wide range of genetic diversity within each species. The savanna elephant and woolly mammoth have very low genetic diversity, Asian elephants have medium diversity, and forest elephants have very high diversity.

All African elephants have been conserved as one species since 1950. These new findings suggest that the forest elephant should become a bigger priority for conservation.

TOOTH AND FINGER

For the hominin study, Reich teamed up with a group of researchers led by Svante Pääbo of the Max Planck Institute for Evolutionary Anthropology. Reporting in the Dec. 23 issue of *Nature,* the group described sequencing the nuclear genome from a 30,000 year old finger bone of an extinct hominin that was excavated by archaeologists in southern Siberia, Russia, in 2008. A team at Harvard Medical School led the population-genetics analysis of the fossil.

The researchers found that the individual was female and came from a group of hominins that shared an ancient origin with Neandertals, but subsequently diverged. They call this group of hominins Denisovans. Analysis revealed that Denisovans were genetically similar to modern-day Papua New Guinean populations, suggesting that there was interbreeding between Denisovans and the ancestors of Melanesians.

In addition, a Denisovan tooth found in the same cave shows a morphology distinct from Neandertals and modern humans that resembles much older hominin forms.

"The fact that Denisovans were discovered in Southern Siberia but contributed genetic material to modern human populations from New Guinea suggests that Denisovans may have been widespread in Asia during the Late Pleistocene," said Reich.

Forum

Continued from page 1

To help decision makers around the globe arrive at solutions to public health challenges such as those in Haiti, the Harvard School of Public Health recently unveiled an innovative new resource: The Forum at HSPH. By convening experts from the School and elsewhere, and by harnessing state-of-the-art communications technologies, the Forum will serve as a platform for sharing ideas and recommendations grounded in research with local and national leaders who are in positions to implement public policies for change.

At the Forum's official ceremonial launch on Dec. 9, 2010, philanthropist Ted Turner, founder of CNN and the UN Foundation, spoke with HSPH Dean Julio Frenk about strategies for putting global health goals into action. Their conversation—streamed live online to computers, smart phones and iPads—attracted viewers from 43 countries as diverse as Norway, India, Japan, Kenya and Brazil. When it comes to improving the health of people around the world, Frenk said, "Knowledge is the most powerful tool we have."

Their conversation—streamed live online to computers, smart phones and iPads—attracted viewers from 43 countries as diverse as Norway, India, Japan, Kenya and Brazil.

The Forum at HSPH is just one facet of Frenk's master plan to close the gap between the world's generators and implementers of knowledge. Come March, when it will be running at full throttle, the Forum will host two interactive events each month. Along with addressing emergencies during roundtables and panel discussions, experts will analyze scientific controversies and spark debate on issues such as the paradox of co-existing malnutrition and obesity, or mammography practices and guidelines in the United States and developing nations.

The Forum's 21st-century technology is housed in a 40-seat production studio outfitted with four remote-controlled cameras, stage lighting, overhead full-room audio and a 103-inch plasma screen, which carries images of data and of participants at remote locations. The facility can be used to stage video conferences that connect people at nearly 50 locations. Other capabilities include interactive webcasting and direct video feeds to network television stations for on-the-spot interviews and post-production editing. Press a button for "town hall," "small panel" or "one-on-one interview," and lighting and camera angles change to accommodate the presentation format.

"A Swiss army knife of communications outreach" is how Robin Herman, the Forum's director and HSPH's assistant dean for research communications, described this array of digital communications tools.

Although events are transmitted live, "That's not how much of our target audience—decision makers—will experience the Forum," Herman said. "Most are too busy to time their day to watch an hour-long discussion, let alone time differences across the globe." It is in post-production, she said, that "we can really add value, enabling easy access to the information."

On the Forum website atForumHSPH.org, for example, users will find options for screening on-demand recorded discussions in order to access key segments quickly.

The Forum was launched by the School's new Division of Policy Translation and Leadership Development, led by Robert Blendon, senior associate dean and professor of health policy and political analysis. The division brings under one umbrella three programs designed for public health and government leaders: the Center for Health Communication, the Center for Continuing Professional Education and the National Preparedness Leadership Initiative. As of September, the division will also host a new senior fellowship program, inviting high-level health leaders to spend six months at the School.

"We are promoting exchanges," said Blendon. "When government officials and health care leaders come here for training, they let our faculty and students know what their pressing needs are. Now we have the capacity to share our science-based advice globally."

—Ellen Barlow

Promotions

Continued from page 1

accomplishments without compromising the thoroughness and rigor of the evaluation," Flier said.

"The new system will increase collaboration between department leadership and the Dean's Office, create greater transparency regarding the steps toward promotion, eliminate redundancies and significantly decrease the time from start to finish," Connelly said.

After reviewing obstacles to the timely completion of promotions, the task force examined current procedures, discussed points of variability and potential delay, and considered alternative models for evaluating faculty. The task force made recommendations that were then reviewed by the Preclinical Chairs Council, the Conference of Department Heads, the Council of Academic Deans and, ultimately, the Governing Boards of Harvard University. While streamlining the promotions process, the task force took great care to maintain its integrity, retaining, for example, the current rigorous standards by which faculty are evaluated.

One change that will accelerate and add transparency to the evaluation process is the implementation of a paperless system of documentation management, the logistics of which have been successfully piloted by the Office of Faculty Affairs (OFA) over the past year, Connelly said. Professorial candidates, department leaders and administrators and members of professorial ad hoc committees will be able to submit and review, where appropriate, all materials electronically.

The OFA has assumed complete administrative responsibility for the new process. Additionally, a secure website introduced last year enables candidates and department leaders to track the progress of their professorial evaluation at HMS, including the dates on which major milestones of the evaluation process are completed. The site also provides contact information for the Dean's Office repre-

sentative charged with managing the evaluations.

While gathering a substantial set of recommendation letters remains an essential component of the evaluation process, department leaders will now play a much larger role in informing the selected expert reference pools, including letter writers and ad hoc committee members. Department leaders will have the opportunity to provide input throughout the process, while ad hoc evaluation committees appointed by the dean will continue to review and to provide recommendations independently on proposed appointments.

Thomas Sequist, who was recently promoted to HMS associate professor of medicine at Brigham and Women's Hospital and of health care policy, welcomed the prospect of streamlined promotions. "I'm excited that the new process will be more transparent and will foster collaboration between the medical school and the hospitals," he said.

BROADENING SCHOLARSHIP

As before, every professorial candidate must publish and accrue high-impact scholarship in his or her field of expertise. However, as part of each dossier submitted for evaluation, a candidate may now also submit materials beyond publications traditionally regarded as scholarly.

Depending on a candidate's area of excellence, scholarship may include nationally recognized educational materials in print or in other media, such as syllabi, curricula and web-based training modules and courses; development of guidelines and/or protocols for patient treatment or the delivery of care that have been adopted nationally; publications reflecting multidisciplinary research that have had a major impact on a field or changed clinical practice; and original works describing novel methods or technologies that have advanced that field.

Faculty members are encouraged to think broadly about what constitutes top scholarship, understanding that each of these examples potentially embodies material that could be considered a critical component of a candidate's academic legacy.

In the coming months, faculty members considering pursuit of a professorial appointment can learn more about the streamlined process by visiting the OFA website at www.fa.hms.harvard.edu.

—Valerie Wencis

Senior Promotion Process

Dept. head proposes candidate to Dept. Executive Committee/Preclinical Chairs Council (PCC).

Dept. gives HMS a list of comparands, evaluators and ad hoc committee members.

HMS approves comparands, letter writers and committee members.

Dean's Office solicits letters and assembles dossier.

Dept. head and PCC/Senior Appointments Committee review dossier.

If decided to go forward, HMS appoints ad hoc committee to review evidence.

Dept. lists individuals to testify; confidential senior faculty input invited.

Ad hoc committee evaluates candidate, then reports to Subcommittee of Professors.

Boosting Shots

To Protect Infants From Seasonal Flu, Vaccinate Mothers in Pregnancy


Graham Ramsay

Erica Seiguer Shenoy

During the 2009–2010 H1N1 flu pandemic, several groups were noted to develop more severe disease than others; pregnant women and infants were two of these groups. Numerous studies have demonstrated the heightened risk to pregnant women from both seasonal flu and the recent H1N1 and have highlighted the need to ensure vaccination of women prior to and during pregnancy.

Despite this, influenza vaccination rates among pregnant women have remained, until recently, much lower than desired. In the 2007–2008 and 2008–2009 seasons, vaccination rates were only 24.2 percent and 11.3 percent respectively. A significant increase during the 2009–2010 season, likely related to the media attention surrounding H1N1 as well as efforts to distribute the vaccine at no cost, resulted in 50.7 percent of pregnant women receiving the seasonal vaccine and 46.6 percent receiving the H1N1 vaccine. The flu vaccine is currently recommended to pregnant women during any trimester.

The recent experience is encouraging, but for a vaccine that is safe and well-tolerated, why do vaccination rates remain low? Research from the Centers for Disease Control and Prevention suggests that the recommendation of providers can have a profound effect on women's acceptance of the vaccine. Women who received a recommendation from their health care provider to get the vaccine were 3.3 times more likely to get the vaccine than those who reported that their provider had not recommended it. Of those pregnant women who did not get vaccinated, a large percentage reported safety concerns for both the baby and themselves as reasons for refusing the vaccine. Recent research suggests they could not be more misinformed.

Beyond protecting the pregnant patient, a new study suggests that vaccinating pregnant women is associated with a protective effect on their infants. Researchers at Yale Medical School, reporting in the journal *Clinical Infectious Diseases,* looked at infants less than 1 year old admitted to the hospital with laboratory confirmed seasonal influenza over a span of 10 years and matched these patients with control infants admitted without influenza. Using this matched case-control design, they concluded that the vaccine, administered to their mothers while they were pregnant, was 91.5 percent effective in preventing influenza in infants younger than 6 months. There was no effect in children between 6 and 12 months.

Infants younger than 6 months are at great risk, in large part because the seasonal vaccine is not recommended in this age group. Research from Finland, the only European country that has recommended and reimbursed vaccination with seasonal flu for children ages 6 months to 35 months, found that the majority of hospitalizations for infants less than 1 year were related to influenza and of those, 10 percent resulted in admissions to intensive care units. Because the seasonal flu vaccine is not recommended for use in children younger than 6 months, the Yale researchers provide a clear strategy to protect infants in this age range who are at high risk for developing complications from the flu: Vaccinate their mothers.

—Erica Seiguer Shenoy, MD–PhD '07, is a fellow in infectious disease at Massachusetts General Hospital and Brigham and Women's Hospital.

The opinions expressed in this column are not necessarily those of Harvard Medical School, its affiliated institutions or Harvard University.

Nominate a Community Service Star

The Office for Diversity and Community Partnership at HMS is requesting nominations for the 2011 Dean's Community Service Award. Please consider nominating an HMS/HSDM faculty member, trainee (house officer or postdoctoral fellow), staff member or student whose active commitment to the community has made a positive impact for people locally, nationally or globally. Self-nominations are also accepted. The deadline to nominate is Friday, Feb. 25.

For more information, visit www.mfdp.med.harvard.edu/awards/csa/index.html or contact Rebecca Poe at 617-432-3020 or rebecca_poe@hms.harvard.edu.

CALENDAR

Monday, Feb. 7
Countway Library, Minot Rm., 5th Fl.
4–6 p.m.

Dissolving Boundaries: Extending the Reach of Medicine and Public Health.
Alan Brandt, Harvard University; Julio Frenk, HSPH; Jeffrey Flier, HMS

The fields of medicine and public health continue to change, confronting issues of ever-greater magnitude and framed by debates concerning the boundary between organized medicine and public health, national versus global health concerns, and personal versus societal responsibility. Successful efforts to engage such issues are critically dependent upon a historical understanding of their evolution. To RSVP, email contactCHoM@hms.harvard.edu or call Michael Dello Iacono at 617-432-6926.

Wednesday, March 2, and Thursday, March 3
Joseph B. Martin Conference Center

The Long Tail of Global Health Equity: Tackling the Endemic Non-Communicable Diseases of the Bottom Billion
Paul Farmer, HMS; Elizabeth Nabel, BWH; Julio Frenk, HSPH; Dean Jamison,University of Washington; Peter Hotez, George Washington University; Agnes Binagwaho, Ministry of Health, Rwanda; Ann Keeling, NCD Alliance; K. Srinath Reddy, Public Health Foundation of India

This conference will bring attention to the non-communicable disease (NCD) burden of the poorest populations, the bottom billion, largely composed of children and young adults. Discussions at this meeting will contribute to the deliberations of a high-level and timely United Nations meeting in September about NCD health systems issues. Registration is free. For more information or to register, visit the conference website at www.pih.org/harvardncd. The conference will also be streamed live. Direct questions to: harvardncd@gmail.com.

What is the secret ingredient for successful research collaborations? Share your thoughts at focushms.com/idealab.

Farmer

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crossed boundaries between the social sciences and biomedical research and married theory and practice to forge a new approach to global health. He is also an outstanding educator with a remarkable capacity to inspire students to focus their minds and their energies on serving the common good."

Justin Ide/Harvard Staff


Paul Farmer

Farmer, whose research focuses on community-based strategies for combating infectious diseases, on health and human rights, and on the role of social inequalities in determining disease distribution and outcomes, becomes the first Kolokotrones University Professor, a chair established through a gift from Wendy and Theo Kolokotrones, M.B.A. '70.

"Having built my academic career around the conviction that we can take the fruits of scientific discovery in medicine and public health and improve the lives of people who have been marginalized by poverty and other forces beyond their immediate control, I am deeply grateful to Harvard," Farmer said. "I'm grateful for decades of support for a model of engagement that links research to training to direct services, and for the opportunity to show how scholarship and teaching can have a profound impact outside the classroom."

With the appointment, Farmer became the second university professor currently at HMS. Marc Kirschner, founding chair of the Department of Systems Biology, was named John Franklin Enders University Professor in 2009.

The President and Fellows of Harvard College established the University Professorships in 1935 to recognize "individuals of distinction … working on the frontiers of knowledge, and in such a way as to cross the conventional boundaries of the specialties."

"Paul exemplifies this description, having built his career—in fact, his life—around the conviction that all the world's people should have access to quality health care," said HMS Dean Jeffrey S. Flier. "He works to achieve that goal by forging the ideas and innovations of modern medicine—discovered in clinics, laboratories and classrooms—into tools that improve health care and its delivery to underserved and remote areas."

Born in North Adams, Mass., Farmer received his undergraduate education at Duke University before earning an M.D. as well as a Ph.D. in anthropology from Harvard in 1990.

He is the Maude and Lillian Presley Professor and Chair of the Department of Global Health and Social Medicine at Harvard Medical School. In addition, he is chief of the Division of Global Health Equity at Brigham and Women's Hospital, professor in the Department of Global Health and Population at the Harvard School of Public Health, and a leading figure in the Harvard Institute for Global Health, with responsibility for medical education and physician training.

Farmer is widely known as co-founder of Partners In Health, the international humanitarian organization that works cooperatively with communities to combat disease in resource-poor settings. With the team at Partners In Health, Farmer has played a key role in mobilizing relief efforts after such devastating disasters as the earthquake in Haiti and in the advancement of community-based strategies for treating AIDS and tuberculosis among populations living in extreme poverty. He has been involved in the construction or renovation of dozens of hospitals and clinics in Latin America and Africa, and has trained hundreds of physicians from Harvard Medical School and across the world.

His research at the intersection of medical anthropology, public health, and clinical medicine has formed a cornerstone of the effort to relate theory to effective practice in global health. His work is recognized as having made essential contributions to ethnography, the anthropology of epidemic disease, the theory of structural violence, and empirical studies of human rights in the health arena. He also has contributed to clinical literature in the arena of drug-resistant tuberculosis and AIDS. While many scholars working in the field of medical anthropology are able to clearly describe the problems facing a particular community, Farmer's medical training and extensive fieldwork enable him and his team to develop and implement solutions to serious public health challenges.

In the course of his work, he has documented the ways that power relationships in underdeveloped societies act as obstacles to effective health programs and has shown how better ethnographic knowledge can overcome such obstacles. His books *AIDS and Accusation, Infections and Inequalities,* and *Pathologies of Power* are staples of the curricula in public health and anthropology courses for undergraduates, graduate students, and medical students. *Partner to the Poor: A Paul Farmer Reader* was recently published by the University of California Press.

His work with AIDS and tuberculosis patients in Haiti, Peru, and Rwanda has been instrumental in convincing global health organizations that treatment and prevention must be integrated fully in such settings. Previously, concerns that poor populations would not stick with extensive treatment regimens led policymakers to place their emphasis on prevention efforts.

"We know social inequalities are embodied in the literal sense, and then increase the risk for many pathologies and also for poor health outcomes, even though we do have, globally, the means to improve outcomes dramatically," he said. "These are truly biosocial problems, but ones which we really can address."

Among the many distinctions awarded to Farmer are the Carter Award for Humanitarian Contributions to the Health of Humankind from the National Foundation for Infectious Diseases, the Salk Institute Medal for Health and Humanity, the American Anthropological Association's Margaret Mead Award, and a John D. and Catherine T. MacArthur Foundation Award. He is a member of the American Academy of Arts and Sciences and of the Institute of Medicine of the National Academy of Sciences.

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