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Tom Lubensky: Christopher H. Browne Distinguished Professor of Physics



Tom Lubensky

Tom Lubensky has been appointed the Christopher H. Browne Distinguished Professor of Physics.

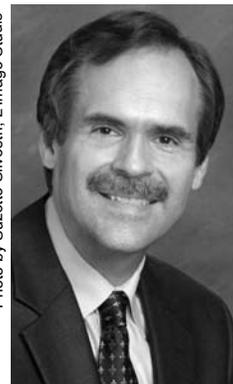
Dr. Lubensky, previously the Mary Amanda Wood Chair of Physics, has spent most of his academic career at Penn. He joined the faculty in 1971 and has served as chair of the department of physics and astronomy and as the associate director of the Laboratory for Research in the Structure of Matter. His research focuses largely on liquid crystals and other soft materials; his book with P. M. Chaikin, *Principles of Condensed Matter Physics* (Cambridge University Press, 2000), has been lauded as the “classic textbook for soft condensed matter.”

In 2002, Dr. Lubensky was elected to the National Academy of Sciences. He is also a Fellow of the American Academy of Arts and Sciences and an Honored Member of the International Liquid Crystal Society. Among his other awards are Alfred P. Sloan and Guggenheim Fellowships as well as the Oliver E. Buckley Prize of the American Physical Society.

This Christopher H. Browne Distinguished Professorship is one of several created with exceptionally generous gifts from the late

Christopher H. Browne, C’69. Mr. Browne served as the chairman of the Board of Overseers of the School of Arts and Sciences from 1999 to 2009 and as a trustee of the University of Pennsylvania from 1991 to 2009. The Browne Chairs recognize faculty members who have earned extraordinary reputations for their scholarly contributions, demonstrated distinction in teaching, and displayed intellectual integrity and unwavering commitment to the free and open discussion of ideas. They are considered one of the highest honors that SAS bestows on its faculty.

Francis X. Diebold: Paul F. and Warren S. Miller Professor of Economics



Francis Diebold

Francis X. Diebold has been named the Paul F. and Warren S. Miller Professor of Economics.

Dr. Diebold, who received his doctorate in economics from Penn, is a leader in economic modeling, forecasting, and risk management. He has received widespread recognition for his research, including election as a Fellow of the American

Statistical Association and the Econometric Society. He has won the Department of Economics Kravis Award for Outstanding Teaching, the John Simon Guggenheim Foundation Fellowship, the Alfred P. Sloan Foundation Fellowship, and the Alexander von Humboldt Award from the Federal Republic of Germany.

Dr. Diebold lectures actively and has held visiting appointments at Princeton University, Cambridge University, the University of Chicago, the London School of Economics, Johns Hopkins University, and New York University. He has trained more than 60 Penn PhD students, who are now leaders in academia, government, and industry, world-wide.

The Paul F. and Warren S. Miller Professorship was endowed by a gift from Paul F. Miller Jr., W’50, HON’81, and his wife, Ella Warren Shafer Miller, CW’51. This gift is one of many ways that the Miller family has demonstrated continued support for the University. Paul Miller served as chairman of the Board of Trustees from 1978 to 1986 and is now an emeritus trustee. He was the recipient of Penn’s Alumni Award of Merit in 1982. Currently, he is a senior partner of Miller, Anderson and Sherrerd LLP in Bala Cynwyd. Warren Miller is a former School of Arts and Sciences overseer.

IN THIS ISSUE

- Senate: SEC Agenda; Notice of Special Meeting; Trustees’ Meetings; Help for Haiti Event at Museum; Academic Calendar Collection
- Death: John McCoubrey; Distinguished International Scholars; ABCS Course Development Grants; Diversity Fund
- Honors & Other Things
- University Research Foundation; OF RECORD: IACUC Policy—Reporting of Animal Welfare Concerns
- RecycleMania at Penn; HR: Did You Know; Retirement Savings
- Update; Classified Ads; CrimeStats; Photos at Burrison Gallery
- Talk About Teaching and Learning

Pullout: SCUE White Paper

Dealing with Snow

Last week, the University of Pennsylvania shut down in the midst of a record-breaking snowstorm that hit Philadelphia and the greater mid-Atlantic region. The University made the decision to close down for two straight days since the City was blanketed with some 16 inches of snow, making this is the snowiest winter in Philadelphia history. The snow days Wednesday, February 10 and Thursday, February 11 were the first back-to-back snow days at Penn in 16 years. The University said the closing occurred “to facilitate municipal clean-up efforts and recognize the transportation safety issues following the record snow storm.”

On Tuesday evening, February 9, Penn issued a statement canceling classes for the next day. That following evening, as the snow continued to pile up, the University closed the following day.

See *Almanac*’s website for more photos taken on campus while the University was closed due to the severe snow storm.



Penn students took advantage of the two free days without classes. Some students went sledding, organized snowball fights and built snowmen, while others built a snow igloo (above).

SENATE From the Senate Office

The following agenda is published in accordance with the Faculty Senate Rules. Any member of the standing faculty may attend SEC meetings and observe. Questions may be directed to Sue White, executive assistant to the Senate Office either by telephone at (215) 898-6943, or by e-mail at senate@pobox.upenn.edu.

Faculty Senate Executive Committee Agenda

Wednesday, February 24, 2010

3–5 p.m.

1. Approval of the Minutes of January 27, 2010 (2 minutes)
2. Chair's Report (5 minutes)
3. Past-Chair's Report on Academic Planning and Budget & Capital Council (3 minutes)
4. Discussion of School of Engineering and Applied Science (45 minutes)
Presentation by:
 - Senate Committee on Faculty and the Academic Mission (SCOF) Chair Reed Pyeritz
 - School of Engineering and Applied Science Dean Eduardo Glandt
 - School of Engineering and Applied Science Deputy Dean Vijay Kumar
5. Overview of Public Safety (45 minutes)
Vice President for Public Safety, Maureen Rush
6. New Business

SENATE From the Senate Chair

Under Section 15 of the Rules of the Faculty Senate, notification or distribution to members of the Faculty Senate may be accomplished by publication in *Almanac*. The following is published pursuant to that rule.

To: Members of the Faculty Senate
From: Harvey Rubin, Chair
Subject: Notice of Special Meeting of Faculty Senate to Consider Changes to Rules of the Faculty Senate

Background information

This revision of the Senate rules is a recommendation from the Faculty Senate Tri-Chairs to provide the Penn Association of Senior and Emeritus Faculty (PASEF) member of the Faculty Senate Executive Committee (SEC) to have a seat on University Council.

This past spring the Penn Association of Senior and Emeritus Faculty (PASEF) requested that the faculty representative on the Faculty Senate Executive Committee (SEC) also have a seat on University Council. PASEF would like to remain connected to the intellectual and social life of the University community. Having a representative on the University Council would provide PASEF with one important means of doing so.

The Bylaws of University Council state that 45 members of SEC are to be voting members of University Council. To keep that total, the Faculty Senate Tri-Chairs recommend replacing the SEC Past-Secretary seat on University Council with the SEC PASEF member.

1) **Notice of Meeting.** A special meeting of the Faculty Senate will be held on Wednesday, March 24, 2010, at 3 p.m., Meyerson Conference Room in the Van Pelt-Dietrich Library. Adjournment will be no later than 3:30 p.m.

2) **Agenda.** The agenda for the special meeting follows:

- a) Call to order.
- b) Proposal pursuant to Section 17 of the Rules of the Faculty Senate to amend those Rules as follows:

To amend rule Section 9.(a) (v). The Executive Committee shall also nominate faculty members to serve on consultative committees. In addition, the Chair, the Chair-Elect, Past-Chair, Secretary, Secretary-Elect, ~~Past-Secretary~~, the three Assistant Professor members, ~~and the thirty-six Constituency Representative members, and the Penn Association of Senior and Emeritus Faculty (PASEF) member~~ shall serve as members of the University Council. It shall be the responsibility of members of the Executive Committee to report to their constituencies on the work of the University Council and the Executive Committee.

c) The amended Rules as they would read as amended may be found at: www.upenn.edu/almanac/volumes/v56/n22/rules.html.

d) Adjournment (3:30 p.m.)

Academic Calendar Collection

You asked, we answered. The entire collection of Penn's previously published academic calendars is now available on *Almanac's* website in one convenient location. The page can be accessed through the latest academic calendar, or through the following URL: www.upenn.edu/almanac/old3yearcal.html. The collection spans the fall of 1974 through the current semester.

—Eds.

Trustees' Meetings: February 25 and 26

Meetings of the Trustees of the University of Pennsylvania will be held on Thursday and Friday, February 25 and 26, at the Inn at Penn. Please contact the Office of the University Secretary at (215) 898-7005 with your plans to attend any of the meetings.

Thursday, February 25

10–11:15 a.m., Facilities & Campus Planning Committee, Woodlands AB
1:15–2:30 p.m., Neighborhood Initiatives Committee, Thomas Webb Richards Suite
Student Life Committee, Woodlands CD
2:45–4 p.m., Academic Policy, St. Marks
Budget & Finance Committee, Woodlands AB
External Affairs Committee, Woodlands CD

Friday, February 26

11:30 a.m.–12:30 p.m., Stated Meeting, Woodlands ABCD

Trustees' March Meeting Cancelled

Since the annual tuition and fees discussion will occur at the February trustees' meetings, the Office of the Secretary has decided to cancel the March 25, 2010 meeting of the Executive and Budget & Finance Committees.

Help for Haiti:

Beyond Media Coverage, An Evening of Philanthropy and Learning

The January 12, 2010 earthquake that devastated Port-au-Prince, Haiti and the surrounding region is over, but the recovery and rebuilding process is just beginning.

Penn Museum's International Classroom program is joining the effort, raising awareness and money for Haiti with an educational benefit evening, *Help for Haiti: Beyond Media Coverage*, on Thursday, February 25, from 6:30 to 8:30 p.m. Admission to the fundraising event, which offers guests a special opportunity to learn more about the history, culture, and traditions of Haiti, is \$10 per person, with all proceeds going to the Explorers Sans Frontières, Haitian Professionals of Philadelphia and American Red Cross relief efforts. *Help for Haiti* will be held in the Rainey Auditorium.

Two Haitian speakers will offer their perspectives on Haiti and Shonta Collins, founder of the Explorer Sans Frontières, and Yve-Car Momprouse, board chair of the Haitian Professionals of Philadelphia, will also share their efforts and challenges.

Guests will have the opportunity to view four Haitian drums from the Museum's collection not usually on display. Made of wood and standing about three feet tall, these drums are central to the voodoo religion in Haiti. Haitian voodoo combines African and Christian influences and involves ceremonies of song, drum and dancing that call forth spiritual beings for health, healing and protection, and should not be confused with the stereotype of voodoo involving pins and dolls.

The Heart of Haiti, a hardcover book of black and white photography, by Andrea Baldeck will be on sale for \$25, with all proceeds going to the Haitian relief efforts. Fine-art photographer Dr. Baldeck is also a Penn Medicine graduate who traveled to Haiti in the 1980s as a doctor. She returned in the 1990s, with a camera instead of stethoscope, to create powerful portraits of the Haitian people of the Artibonite Valley.

Created in 1961, International Classroom, a part of the Museum's Educational Department, is an innovative program providing resources for international and multicultural education.

Deaths

Dr. McCoubrey, History of Art



John McCoubrey

A scholar and teacher, John Walker McCoubrey was a professor of the history of art for 35 years at the University of Pennsylvania, after teaching for seven years at Yale University. He passed away February 6 at age 86.

He received many honors including Fulbright, Guggenheim, and National Endowment for the

Humanities fellowships, and Penn's Lindback Award for Distinguished Teaching. He became the University's first James and Nan Farquhar Professor of the History of Art in 1988.

He wrote widely on American, English and French art from the 18th through the 20th centuries. His publications include the influential book *American Tradition in Painting*, numerous articles on the English painter J.M.W. Turner, and several essays for museum exhibition catalogues.

He played a central role in guiding and shaping the department of the history of art at Penn where he was "beloved and respected by students and colleagues alike," said department chair Holly Pittman.

An active figure in the Philadelphia arts community, he was a trustee of the Pennsylvania Academy of the Fine Arts, served on the Painting and Sculpture Committee and the Committee for 20th Century Art at the Philadelphia Museum of Art, and served on the Board of Penn's Institute of Contemporary Art.

He received his PhD in 1957 from the Institute of Fine Arts, New York University, and his BA from Harvard College in 1947, after serving as an Ensign in the Navy during WWII.

He is survived by his wife Bettsey; children Stephen, Daniel, John, Hannah, Sarah, Peter; and 13 grandchildren.

Memorial donations may be made to the John McCoubrey and Malcolm Campbell Student Travel Funds, History of Art Department, University of Pennsylvania, Jaffe Building, Philadelphia, PA 19104.

Dr. Wilkerson, Nursing

Karen B. Wilkerson, professor of community health in the School of Nursing, died on February 13, after a long illness, (*obit next week*).

A funeral service is planned for Thursday, February 18 at 10:30 a.m. at Trinity Memorial Episcopal Church at 22nd and Spruce Streets. In lieu of flowers, donations in her memory may be made to the Karen Buhler-Wilkerson Faculty Research Fund at the Barbara Bates Center for the Study of the History of Nursing. Checks should be made payable to the Trustees of the University of Pennsylvania, and sent to the School of Nursing at the University of Pennsylvania, Development Office, 418 Curie Blvd., Philadelphia, PA 19104-4217.

To Report A Death: *Almanac* appreciates being informed of the deaths of current and former faculty and staff members, students, and other members of the University community. Call (215) 898-5274 or e-mail almanac@upenn.edu.

2010 Diversity Fund: March 1

The Diversity Fund (*Almanac* December 8, 2009) supports implementation of schools' strategic plans to support the presence of underrepresented groups, research on diversity in higher education, and projects that diversify the campus. The intention is to seed innovative projects which, if successful, can then be supported by schools, centers and extramural funding. Multi-year projects will be considered and, although the amount of funding provided will vary, most awards will not exceed \$30,000 per year. Priority consideration will be given to projects with strong prospects for sustainability, as reflected in matching financial commitments from schools or centers, extramural support or well-articulated plans to seek such support. For the application process go to: www.vpul.upenn.edu/aap/main/up/2010DIVERSITYFUNDFINAL.pdf

Distinguished International Scholars: March 19

The Office of the Provost announces that applications are available for the Distinguished International Scholars Program, a program which aims to promote further global engagement in undergraduate education and deepen the University's ties to the world's leading universities and scholars. Any member of the Standing Faculty who is teaching an undergraduate course in an upcoming semester may apply to host an international scholar. The deadline for this application cycle is *March 19, 2010*. Applications will be accepted for courses to be offered next academic year: 2010-2011.

The Distinguished International Scholars Program offers Penn faculty the opportunity to invite a scholar from another nation to contribute significantly to an undergraduate course while visiting Penn's campus. The scholar's time may be compressed into a two-week visit or spread out over the course of the semester but the total time spent on campus should be at least 10 weekdays. Longer or shorter periods for the visit may be acceptable depending on the circumstances. In addition to the course, the scholar should participate in the intellectual and cultural life of campus through such activities as visiting other courses, offering public lectures, attending departmental seminars/workshops, and participating in programs through College Houses and Academic Services.

The faculty member will be responsible for hosting the scholar during the visit. This includes coordinating all travel and lodging arrangements, as well as planning all educational and social activities during the visit. The host department or school will receive up to \$20,000 to cover expenses related to the visit such as an honorarium, visa fees, and the costs of lodging, meals, and travel. Applications will be evaluated based on the scholar's reputation and teaching expertise, how well the planned visit integrates the scholar into the intellectual and cultural life of the campus, and the impact the scholar's visit will have on undergraduate education at Penn.

For copies of the application material or further information, please visit www.upenn.edu/provost/dis.

ABCS Course Development Grants: March 26

The Barbara and Edward Netter Center for Community Partnerships announces course development grants to promote Academically Based Community Service (ABCS) courses that integrate research, teaching, learning and service. Over 150 courses from a wide range of disciplines and Penn schools have linked Penn undergraduate and graduate students to work in the community. The grants support University faculty to develop new courses or adapt existing courses that combine research with school and community projects (see www.upenn.edu/ccp/ for a list of ABCS courses).

Grants will be for no more than \$4,000 per project. These funds can be used to provide graduate and undergraduate support, course support and/or summer salary (\$4,000 is inclusive of E.B. if taken as salary).

Funded by the Netter Center, course development grants facilitate faculty in developing new and substantially restructured undergraduate and graduate level courses that engage students in real world problem-solving projects in conjunction with schools and community organizations located in West Philadelphia.

The following criteria will be used to evaluate proposals:

1. Academic excellence
2. Integration of research, teaching and service
3. Partnership with schools, community groups, service agencies, etc.
4. Focus on Philadelphia, especially West Philadelphia
5. Evidence as to how the course activity will involve participation or interaction with the community as well as contribute to improving the community
6. Evidence as to how the course activity will engage undergraduate and/or graduate students in real-world problem-solving research opportunities
7. Potential for sustainability

Please format proposals as follows:

1. Cover Page
 - 1.1 Name, title, department, school, mailing address
 - 1.2 Title of the proposal
 - 1.3 Total amount of funding you would like to receive
 - 1.4 100-word abstract of the proposal (include a description of how the course will involve interaction with the community and benefit the community)
2. A one-page biographical sketch of applicant
3. A two-to-four-page mini-proposal
4. Budget detailing how you intend to use the requested funding

Proposals should be submitted to the Netter Center for Community Partnerships by *Friday, March 26, 2010*. Please e-mail proposals to Anne Schwiieger at anneschw@pobox.upenn.edu.

Honors & Other Things

Translational Biomedical Imaging Center Award Recipients

The Translational Biomedical Imaging Center (TBIC) of the Institute for Translational Medicine and Therapeutics (ITMAT) announces its second round of successful applications for Pilot Grants.

The mission of these grants is to help catalyze collaborations between primary imaging scientists and primary biomedical/clinical researchers that integrate novel imaging approaches to enhance translational science and medicine and thus assist investigators in obtaining key data to seek extramural funding.

Recipients

Dr. Geoffrey Aguirre, department of neurology, School of Medicine; *Dr. Andras Komaromy*, School of Veterinary Medicine, Clinical Studies—*fMRI of recovered color vision following gene therapy*

Dr. Felix Wehrli, department of radiology, School of Medicine; *Dr. Alexander Wright*, department of radiology, School of Medicine; *Dr. Mary Leonard*, department of pediatrics, School of Medicine—*Quantifying Bone Mineral Phosphorus in Patients with Osteomalacia by 7 Tesla 31P Solid-State MRI*

Dr. John Detre, department of neurology, School of Medicine; *Dr. Virginia Lee*, department of pathology and laboratory medicine, School of Medicine; *Dr. Paul Yushkevich*, department of radiology, School of Medicine; *Dr. Harish Poptani*, department of radiology, School of Medicine; *Dr. Stephen Pickup*, department of radiology, School of Medicine; *Dr. Ari Borthakur*, department of radiology, School of Medicine—*MRI Biomarkers of Tau Pathology*

Dr. James Delikatny, department of radiology, School of Medicine; *Dr. Ari Goldberg*, department of radiology, School of Medicine; *Dr. Clifford Deutschman*, anesthesiology and critical care, School of Medicine; *Dr. Anatoliy Popov*, department of radiology, School of Medicine—*Imaging Infection in Vivo*

Dr. Despina Kontos, department of radiology, School of Medicine; *Dr. Julia Tchou*, department of surgery, School of Medicine; *Dr. Mark Rosen*, department of radiology; *Dr. Susan Domchek*, department of medicine, division of hematology and oncology, School of Medicine; *Dr. Andrea Troxel*, department of biostatistics and epidemiology, School of Medicine; *Dr. Carolyn Mies*, department of pathology and laboratory medicine, School of Medicine—*Quantitative breast magnetic resonance imaging (MRI) biomarkers of breast cancer prognosis*

Dr. Drew Torigan, department of radiology, School of Medicine; *Dr. Datta Ponde*, department of radiology, School of Medicine; *Dr. Melpo Christofidou-Solomidou*, department of medicine, division of pulmonary, allergy, and critical care, School of Medicine—*Feasibility of detection and quantification of early pulmonary fibrosis through use of novel positron emission tomography (PET) radiotracers in a mouse model of radiation-induced lung injury*

Dr. Seung Lee, department of radiology, School of Medicine; *Dr. Mariusz Wasik*, department of pathology and laboratory medicine, School of Medicine; *Dr. Jerry Glickson*, department of radiology, School of Medicine—*MR detection of signal transduction inhibition*

Dr. Jessica Morgan, department of ophthalmology, School of Medicine; *Dr. Eric Pierce*, department of ophthalmology, School of Med-

icine; *Dr. Jean Bennett*, department of ophthalmology, School of Medicine—*Adaptive Optics Imaging of Retinal Degenerative Diseases*

Dr. E. James Petersson, department of chemistry, School of Arts and Sciences; *Dr. Christopher Murray*, department of chemistry, School of Arts and Sciences; department of materials science, School of Engineering and Applied Science—*Voltage-Sensitive Quantum Dots for High Resolution Imaging of Neuronal Activity*

Dr. John Wolfe, department of pediatrics, School of Medicine; Center for Comparative Medical Genetics, School of Veterinary Medicine; *Dr. Harish Poptani*, department of radiology, School of Medicine—*3 High resolution MRI of gene therapy for white matter disease in the CNS*

For more information, please visit the ITMAT website at www.itmat.upenn.edu.

—*Dr. Mitchell Schnall*, Director, TBIC
—*Dr. Garret A. FitzGerald*, Director, ITMAT

NSF CAREER Award

Three Penn Professors in the School of Engineering and Applied Science have received the NSF CAREER Award. This award is the NSF's most prestigious award in support of junior faculty. The recipients are:

Dr. Prashant Purohit, assistant professor in the department of mechanical engineering and applied mechanics for his work, "Entropic Elasticity of Fluctuating Filaments and Networks."

Dr. Ani Nenkova, Aravind Joshi Term Assistant Professor in the department of computer and information science, for her work, "Capturing Content and Linguistic Quality in Automatic Extractive and Abstractive Summarization."

Dr. Andrew Tsourkas, Stephenson Foundation Term Assistant Professor in the department of bioengineering, for his proposal, "Molecular Imaging Training Program."

National AIDS Policy: Dr. Ghose

Dr. Toorjo TJ Ghose, an assistant professor at the School of Social Policy & Practice, was appointed to the White House Office of National AIDS Policy (ONAP). A 30-member team was chosen to formulate policy for the current administration on homelessness and HIV. Dr. Ghose, an expert in substance abuse, HIV/AIDS in developing countries, mental health service provision, and welfare policy, is one of five researchers on that team. As an expert he was asked to emphasize the needs of substance users, sex workers and other hidden and underserved populations.

Gates Cambridge Scholars

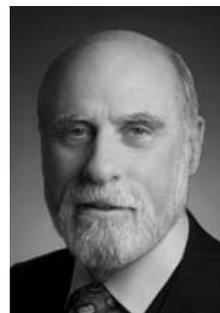
Two seniors and one alumna have been selected to receive a 2010 Gates Cambridge Scholarship.

Donielle Johnson, C'10, of Virginia, is majoring in psychology and is in the biological basis of behavior program. She has volunteered and worked at the Children's Hospital of Philadelphia's Center for Autism Research. At Cambridge, she will continue studying autism in the Autism Research Centre earning an MPhil in medical sciences.

Originally from Pittsburgh, Pennsylvania, *Jill Portnoy*, is a senior studying criminology and Hispanic studies. She is involved in service and non-profit work in post-hurricane Katrina New Orleans and has interned in the District

Attorney's Office of Philadelphia. She plans to pursue an MPhil in criminological research at Cambridge.

Amanda Marzullo, of Texas, received a juris doctor and a master's degree in criminology from Penn in 2008. During her time at Penn, she interned with the International Criminal Tribunal for Rwanda and at two public interest law firms. She also conducted field research on the enforcement of women's rights within the Kenyan judicial system. Currently, she is a policy analyst at the Texas Fair Defense Project. At Cambridge, she plans to pursue an LLM in law.



Vinton Cerf



Robert Kahn

2010 Harold Pender Award and February 25 Lecture

Penn Engineering announced the 2010 Recipients of the Harold Pender Award: *Robert E. Kahn*, chairman, CEO and president of the Corporation for National Research Initiatives, and *Vinton G. Cerf*, vice president and chief Internet evangelist of Google. The Harold Pender Award is the school's most prestigious lecture.

The Award will be presented following a joint lecture to be given by Drs. Cerf and Kahn on February 23, *The Internet: Lessons from the Past and Implications for the Future*. This event will be held at 4:30 p.m. in Wu and Chen Auditorium in Levine Hall on the Penn Engineering campus. A reception will follow the lecture and Award presentation.

Drs. Cerf and Kahn are being recognized for their pioneering and seminal contributions to network-based information technology, and especially for the design and implementation of the TCP/IP protocol suite, which continues to provide the foundation for the growing Internet.

Robert E. Kahn is chairman, CEO and president of the Corporation for National Research Initiatives (CNRI), which he founded in 1986 after a 13-year term at the US Defense Advanced Research Projects Agency (DARPA). CNRI was created as a not-for-profit organization to provide leadership and funding for research and development of the National Information Infrastructure.

Vinton G. Cerf has served as vice president and chief Internet evangelist for Google since October 2005. In this role, he is responsible for identifying new enabling technologies to support the development of advanced, Internet-based products and services from Google. He is also an active public face for Google in the Internet world.

The Harold Pender Award is given by the faculty of The Moore School to outstanding members of the engineering profession who have achieved distinction by significant contributions to society.

University Research Foundation: April 2

The University Research Foundation (URF) is now accepting applications for the April 2 deadline. The URF is an intramural funding program that provides up to \$50,000 support for research projects and up to \$3,000 for conference support.

The objectives of the URF research program are to: (1) Help junior faculty undertake pilot projects that will enable them to successfully apply for extramural sources of funding and aid in establishing their careers as independent investigators; (2) Help established faculty perform novel, pioneering research to determine project feasibility and develop preliminary data to support extramural grant applications; (3) Provide support in disciplines where extramural support is difficult to obtain and where significant research can be facilitated with internal funding; and (4) Provide limited institutional matching funds that are required as part of a successful external peer-reviewed application. URF Review Panels comprise established Penn faculty members and are charged with giving preference to projects that meet one of the aforementioned criteria.

Faculty members are invited to submit their research applications to one of four disciplinary areas: Biomedical Sciences, Humanities, Natural Sciences and Engineering, and Social Science and Management. In addition, URF offers a Conference Support program to provide funding for meetings designed to enhance existing research and scholarly programs, particularly in disciplines where external funding is difficult to obtain. Conferences that promote interdisciplinary and multi-school participation are given priority.

Complete details about the URF and links to the forms can be found on the Office of the Vice Provost for Research website at: www.upenn.edu/research/FoundationGuidelines.htm.

—Steven J. Fluharty, Vice Provost for Research

*In the most recent cycle, Fall 2009, of Penn's internally-funded University Research Foundation, and URF Conference Support (noted with *), the Office of the Vice Provost for Research has announced awards to the following members of the faculty for the projects listed below.*

University Research Foundation Awards and Conference Support Awards Fall 2009

*Phil Scott, School of Veterinary Medicine, Pathobiology; *Phi Zeta Penn Vet Student Research Day*

*Anil Rustigi, School of Medicine, Medicine; *The Biology of Pancreatic Development, Regeneration, and Malignancy*

Joseph Libonati, School of Nursing; *Can Fish Oil Supplementation Offset Cardiac Dysfunction in Hypertension?*

Michael Freed, School of Medicine, Neuroscience; *Retinal Circuits Overcome the Unreliability of Chemical Synaptic Transmission*

Paul Axelsen, School of Medicine, Pharmacology; *Biosynthesis of U-14C-Polyunsaturated Fatty Acid*

Efref Bi, School of Medicine, Cell & Developmental Biology; *Upgrading Imaging System for Exploring Protein Dynamics During Cell Polarization and Cytokinesis in Live Cells*

Oriol Sunyer, School of Veterinary Medicine, Pathobiology; *Phagocytic B Cells Discovered in Mammals: Distribution and Role in the Ingestion and Presentation of Particulate Antigen*

Francis Golder, School of Veterinary Medicine, Clinical Studies; *The Role of Phrenic Motoneuron Gap Junctions in Respiratory Recovery After SCI*

Mortimer Civan, School of Medicine, Physiology; *Novel Approach to Mast Cell Secretion*

Eleanor Pollack, School of Medicine, Pathology; *Understanding Cardiovascular Disease Implications of the Procoagulant Factor VII Gene*

Howard Goldfine, School of Medicine, Microbiology; *Finding the Genes for Plasmalogen Biosynthesis in Clostridia*

Dieter Schifferli, School of Veterinary Medicine, Pathobiology; *Correlation of Salmonella Colonization Factors and Antibiotic Resistance By Next Generation Sequencing*

Beth Winkelstein, School of Engineering and Applied Science, Bioengineering; *Electrophysiological Methods for Understanding Chronic Pain in Vivo*

Deborah Bruner, School of Nursing, Biobehavioral Health; *Feasibility of Biospecimen Sampling for Assessment of Vaginal Stenosis*

Brian Rose, School of Arts & Sciences, Clas-

sical Studies; *Who Owns Underwater Cultural Heritage? Perspectives on Archaeological Law and Ethics in the Mediterranean*

Julia Verkholtantsev, School of Arts & Sciences, Slavic Languages; (Book) *The Slavonic Letters of St. Jerome: The Roman Glagolitic Rite and the Slavic Idea*

Emma Dillon, School of Arts & Sciences, Music; *The Sense of Sound: Musical Meaning in France, 1260-1330 (A companion website for the book)*

Campbell Grey, School of Arts & Sciences, Classical Studies; *Excavating the Roman Peasant*

*Ezekiel Dixon-Roman, School of Social Policy & Practice; *The Achievement Gap: Possibilities and Challenges in Theory, Research, and Practice*

Debra Wolfe, School of Social Policy & Practice; *Field Center Community Symposium Series: Critical Issues in Child Welfare: Integrating Research, Policy and Practice*

Emilio Parrado, School of Arts & Sciences, Sociology; *Puerto Ricans in Philadelphia: Tracking Their Social and Spatial Mobility*

Jeanne Anne Grisso, School of Medicine, Family Medicine & Community Health; *Intimate Partner Violence: Developing an Intervention in the Workplace*

Angela Duckworth, School of Arts & Sciences, Psychology; *Waning Willpower or Menial Motivation? Testing Two Possible Mechanisms for Self-Control Failure*

Elliot Lipeles, School of Arts & Sciences, Physics; *A New Data Flow Strategy for the Upgrade of the ATLAS Experiment Trigger System at the Large Hadron Collider*

Ernest Petersson, School of Arts & Sciences, Chemistry; *Voltage-Sensitive Quantum Dots for High Resolution Imaging of Neuronal Activity*

*Liliane Weissberg, School of Arts & Sciences, Germanic Languages; *Envisioning the Real: Writing and Painting in Late Nineteenth Century Germany*

Siyen Fei, School of Arts & Sciences, History; *Chastity and Empire: A Comparative Study of the Chisty Cult in Ming Border Areas*

*Randall Mason, School of Design, Historic Preservation; *Heritage Recording and Information Management in the Digital Age (SMART doc)*

OF RECORD

IACUC Policy

Reporting of Animal Welfare Concerns

Purpose

The purpose of this policy is to describe the procedures that will be followed for addressing animal welfare concerns at the University of Pennsylvania.

Background

The Animal Welfare Act (AWA) requires the University of Pennsylvania Institutional Animal Care and Use Committee (IACUC), to review and, if warranted, investigate concerns involving the care and use of animals resulting from reports of noncompliance received from laboratory or research facility personnel, or public complaints (9 CFR 2.31[c][4]). The IACUC receives institutional support through the Office of the Vice Provost for Research (VPR).

Reporting Policy

The IACUC encourages the rapid reporting of concerns related to animal welfare and has established procedures to review and investigate any allegation of violations of University of Pennsylvania IACUC Guidelines, University Laboratory Animal Resources Standard Operating Procedures, Public Health Service Policy or United States Department of Agriculture (USDA) Regulations implementing the AWA. Animal welfare reports can be expressed in writing, by telephone or in-person. Allegations should be detailed and specific, and be accompanied by supporting documentation when possible, to allow for a thorough investigation. All concerns will be reviewed regardless as to how they are received. Reports may also be communicated anonymously. The University is committed to protecting the rights of any individual reporting concerns of animal welfare (see Policy 011 "Workplace Violence").

Reports may be filed with the IACUC

Telephone: (215) 573-4863

(Director of Animal Welfare)

(215) 746-5624

(Animal Welfare Compliance)

Fax: (215) 573-9438

E-mail: IACUC@pobox.upenn.edu

Writing: Office of Regulatory Affairs,

Penn Science Center, Suite 301S

3624 Market Street

Philadelphia, PA 19104-6006

Reports may be filed with the Office of Institutional Compliance (OIC)

Individuals may report concerns through 215-P-COMPLY (215-726-6759), Penn's confidential reporting and help line. Those concerns dealing with animal welfare are reported to the IACUC for investigation. Individuals may remain anonymous.

Reports may be filed in-person

Individuals may submit a report to the IACUC Office, the IACUC Chairperson, or any IACUC member.

If you have questions concerning this announcement, please contact Dr. Troy M. Hallman, director of Animal Welfare, at (215) 573-4863 or by e-mail at thallman@upenn.edu.

—Troy M. Hallman, Director of Animal Welfare



RecycleMania is well underway, and Penn's Green Campus Partnership is reaching out to you with our weekly update regarding the competition and the initiatives being taken by the University community. Get in the game and check out our measured results plus standings for the 2010 competition. Spread the word about upcoming events and learn about new sustainability programs.

Thank you for being a partner in our collaborative efforts to increase our recycling and minimize our waste on campus. We are looking forward to reaching our 30% recycling rate target!

Standings

Through the first two weeks of the competition, Penn has been striving to achieve a recycling rate of 30%!

To see where Penn stands among its Ivy Plus, City Six, and Pennsylvania peers, visit www.upenn.edu/sustainability/recyclemania.html#rmstandings

Visit www.recyclemania.org to view the complete national standings.

Upcoming Events

School of Medicine Recycling Fair

Tuesday, February 16, 11 a.m.-2 p.m.

Biomedical Research Building II Lobby

University departments and featured vendors will showcase new recycling programs, resources, and green products available to the Penn community.

Trash Talk Panel Discussion

Wednesday, February 17, noon-1 p.m.

Penn Bookstore

Learn more about waste reduction and recycling initiatives at Penn at Trash Talk, a panel discussion with key players in both the city and campus recycling processes, moderated by Dan Garofalo, Penn's Environmental Sustainability Coordinator. Panelists include:

Clarena Tolson,

Philadelphia Streets Commissioner

Shannon Detweiler,

Blue Mountain Recycling, the

recycling facility used by Penn

JoAnn Murphy,

Director of Purchasing,

Penn Purchasing Services

Laurie Cousart,

Director of Penn Dining,

Business Services Department

Ken Ogawa, Executive Director of

Operations and Maintenance,

Facilities and Real Estate Services

Amy Phillips, Senior IT Project Leader,

Penn Information & Systems Computing

Dan Sanchez, SEAS'10, Director of

Housing, Sustainability and Facilities,

Penn's Undergraduate Assembly

Get Involved

Bring your own bottle and get your fill

Various campus retail locations will reward those who reduce their waste throughout RecycleMania by offering discounts for bringing your own mug, cup, or bottle to use:

RecycleMania Mondays @ Au Bon Pain—get a free coffee when you bring your own mug to Au Bon Pain on Mondays throughout the competition.

Accenture & Houston Market—Bon Appétit at Penn Dining will offer a free coffee or fountain drink at Accenture and Houston Market

from 2-5 p.m. on Mondays and Fridays throughout RecycleMania.

RecycleMania Poster and Video Contests

Do you have an idea to help encourage waste reduction and recycling practices at Penn? Put your time and talent to good green use... Enter the RecycleMania Poster or Video contests!

Design a poster that encourages Penn students, faculty, and staff to reduce their waste and recycle on campus. Create a short (30-60 second) commercial or educational video. Develop your own creative catch phrases and images to encourage others to help Penn reach its goal for a 30% recycling rate during RecycleMania or its goal for a 40% recycling rate by 2014. Contests are open to all Penn students, faculty, and staff. Group projects may be submitted, but prizes will not be adjusted to accommodate all members within winning groups. For more details, visit the RecycleMania website.

Bookstore's New Green Threads

The Penn Bookstore is now offering a new line of sustainable clothing called S.O.5. which features a variety of t-shirts and sweatshirts, all made from organic or recycled cotton or bamboo fabrics. The organic cotton used in making the shirts goes through a process in which the fields remain chemical-free for about three years. This 'transitional cotton' can be certified as organic as long as no chemicals are used for the material. Scraps of cotton clothing are then collected, shredded and mixed with virgin cotton to stabilize the fabric and create recycled yarn, which is knitted into new garments. Cuttings from approximately 70 t-shirts are used to make 1 new tee. The process keeps scraps out of the landfills and sorts fabric cuttings by color. Recycled fabrics use a fraction of the dye compared to new fabrics that require color to be added to them.

The S.O.5. line also features select products made from bamboo, a sustainable fiber that can grow at a rate of up to 3 feet per day. S.O.5. ensures that its suppliers do not use slash and burn harvesting techniques to extract bamboo and do not taint water in the bamboo extraction process. In addition, the clothing uses chemical-free ink and is manufactured in factories using wind power. Each garment has a collection of specially designed labels that correspond to an ecological campaign with which the S.O.5 initiative is involved. The company donates 5 percent of the garment cost to one of its campaigns. For more information on the product line, visit the Penn Bookstore or go to: www.so5initiative.com/about.html.

Stay Informed

The February issue of the Penn Green Campus Partnership e-newsletter, the *Red & Blue On College Green*, is now available online. Visit the Green Campus Partnership website to subscribe and read about the latest sustainability initiatives underway at Penn.

To view the February issue, visit www.upenn.edu/sustainability/news/feb10.html

To subscribe and check out the archives, visit: www.upenn.edu/sustainability/rnbocg.html

—Daniel K. Garofalo,
Environmental Sustainability Coordinator



"Did You Know" is a monthly series that includes valuable tips to help you get the most out of the benefits and services offered by the Division of Human Resources.

Get More Control Over Your Health

Staying healthy can be a challenge, especially if you have a chronic disease. But if you're an Aetna HMO member, help is right at your fingertips. Aetna's Health ConnectionsSM program can help you live your life well, regardless of whether you have an ongoing health condition.

Provided free of charge to Aetna HMO members, Aetna Health ConnectionsSM gives you educational materials and support and encourages you to work closely with your doctor to follow a personalized treatment plan. You have the opportunity to work one-on-one with an Aetna nurse and receive customized information about your current health issues—from treatment options and medications to factors that may put you at risk for other chronic diseases. Keep in mind your health records will be kept private when you enroll in this program.

Participating is easy—if you're an Aetna HMO member, just contact Aetna at 866-269-4500 to learn how you can benefit from Aetna Health ConnectionsSM. You can also visit Aetna's website at www.aetna.com for more information and additional resources to help you achieve and maintain optimal health.

Are You on Track with Your Retirement Savings?

We know how complicated life can get from one day to the next. But saving for retirement doesn't have to be, and Penn can help. In honor of America Saves Week, which runs from February 21–28, we're encouraging you to take advantage of the University's retirement resources. We have plenty of information to help you stay on track with your retirement goals.

- Build your retirement savings by contributing your own money to the Tax-Deferred Retirement (TDR) and/or Supplemental Retirement Annuity (SRA) plans. If you're eligible for the TDR plan, the University will also make regular contributions to your account on your behalf. Keep in mind that all contributions are made on a pre-tax basis, so you won't pay taxes until you start withdrawing from your account.

- You can contribute up to \$16,500 per year during calendar year 2010 (on a pre-tax basis). However, this amount may be higher if you're at least 50 years old and/or have at least 15 years of service with the University.

- Both of Penn's investment carriers offer free one-on-one retirement counseling sessions if you have questions about investing.

Visit the Human Resources website at www.hr.upenn.edu/Benefits/Retirement for more retirement resources and to manage your retirement benefits online.

—Division of Human Resources

Subscribe to Express Almanac

Sign up to receive e-mail notification when we post breaking news between issues. Send an e-mail to listserv@lists.upenn.edu with "subscribe e-almanac <your full-name>" in the body of the message. —Ed.



Update

February AT PENN

CONFERENCE

22 *Gender in Judaism and Islam*; 9 a.m.-7:30 p.m.; Ben Franklin Room, Houston Hall; info.: (215) 898-6654 (Middle East Center; Jewish Studies; Women's Studies; Religious Studies; Law; Political Science; Near Eastern Languages and Civilizations; History; Nursing).

26 *31st Annual Ethnography in Education Research Forum: Creativity, Crisis and Qualitative Research: Re-imagining Education in a Changing World*; GSE; info./RSVP: www.gse.upenn.edu/cuel/forum.php; also February 27 (GSE; Center for Urban Ethnography).

FILM

21 *I Luv Africa Film Series*; guest speakers, free food and African cinema; info.: www.rwul.com; 2-7 p.m.; The Rotunda (RWUL).

ON STAGE

19 *On Striver's Row*; African American Arts Alliance; 7 p.m.; Class of '49 Auditorium, Houston Hall; also February 20 (PAC).

SPECIAL EVENT

25 *Help for Haiti: Beyond Media Coverage*; an educational benefit evening to raise awareness and money for Haiti; learn more about the history, culture, and traditions of Haiti; 6:30-8:30 p.m.; \$10; Rainey Auditorium, Penn Museum (Museum).

TALKS

18 *Philosopher King: Reading Between the Lines*; Anita Allen, Penn Law; 11:45 a.m.; Center for Africana Studies; RSVP: africana@sas.upenn.edu (CFAS).

24 *Criminal Brains: What Causes Violent and Criminal Behavior?*; Adrian Raine, criminology, psychiatry, psychology; noon; Terrace Room, Claudia Cohen Hall (SAS).

Papua New Guinea: Photos at the Burrison from the Mt. Hagen Singing

The Burrison Gallery presents *Papua New Guinea: Photos from the Mt. Hagen Singing* by Jerry Porter, from February 22 through April 2.

The cultural shows at Goroka and Mt. Hagen were introduced in Papua New Guinea by the Australian administrators as a substitute for clan warfare. These shows draw people from throughout the country to participate in dance and traditional dress competitions. Each village enacts a traditional ritual, involving dress and chanting. Over 2,000 performers participate and over the course of the singing, 40,000 locals come to view it.



Jerry Porter is professor emeritus of mathematics. He has been at Penn since 1965 and currently serves as the Past President of the Penn Association of Senior and Emeritus Faculty (PASEF). From 1981 to 1991, Dr. Porter was the Associate Dean for Computing in SAS and is a former chair of the Faculty Senate. He enjoys travel and photography.

A reception will be held at the Burrison Gallery on March 18, from 4-6 p.m.

The University of Pennsylvania Police Department Community Crime Report

About the Crime Report: Below are all Crimes Against Persons and Crimes Against Society from the campus report for **February 1-7, 2010**. Also reported were 16 crimes against property (including 12 thefts and 4 cases of fraud). Full reports are available at: www.upenn.edu/almanac/volumes/v56/h22/creport.html. Prior weeks' reports are also online. —Ed.

This summary is prepared by the Division of Public Safety and includes all criminal incidents reported and made known to the University Police Department between the dates of **February 1-7, 2010**. The University Police actively patrol from Market Street to Baltimore Avenue and from the Schuylkill River to 43rd Street in conjunction with the Philadelphia Police. In this effort to provide you with a thorough and accurate report on public safety concerns, we hope that your increased awareness will lessen the opportunity for crime. For any concerns or suggestions regarding this report, please call the Division of Public Safety at (215) 898-4482.

02/02/10	9:42 AM	3401 Walnut St	Male trespassing/Arrest
02/02/10	11:11 AM	200 S 40th St	Male acting disorderly/Arrest
02/05/10	12:42 AM	3900 Sansom St	Male violated city ordinance/Arrest
02/05/10	2:21 AM	3910 Irving St	Male assaulted by unknown male
02/07/10	2:50 AM	3700 Spruce St	Male cited for disorderly conduct

18th District Report

3 incidents with 0 arrests (including 2 robberies and 1 aggravated assault) were reported between **February 1-7, 2010** by the 18th District covering the Schuylkill River to 49th Street & Market Street to Woodland Avenue.

02/01/10	5:45 PM	5000 Pine St	Robbery
02/02/10	11:20 PM	4600 Market St	Robbery
02/05/10	12:35 PM	5100 Market St	Aggravated Assault

Deadline: Submissions for the Update are due every Monday for the following Tuesday's issue. The deadline for the April AT PENN calendar is *Tuesday, March 16*. For information see www.upenn.edu/almanac/calendar/caldead-real.html.

Events are subject to change. Information can be found on the sponsoring department's website. Sponsors are listed in parentheses. For locations, call (215) 898-5000 or see www.facilities.upenn.edu.

Additional events are in the February AT PENN calendar, www.upenn.edu/almanac.

CLASSIFIED—UNIVERSITY

RESEARCH

Penn's Depression Research Unit (DRU) is conducting research into **herbal treatments of chronic fatigue syndrome**. Symptoms may include: tiredness, un-refreshing sleep, muscle and joint aches and problems with concentration. You may schedule an initial evaluation to see if you may participate in a research study of *Rhodiola Rosea* (Golden Root) for up to 12 weeks. For more information call the DRU at (215)-662-3462 or go to <http://www.med.upenn.edu/dru/>

For information call (215) 898-5274 or visit www.upenn.edu/almanac/faq.html#ad.

Almanac is not responsible for contents of classified ad material.

CLASSIFIED—PERSONAL

FOR RENT

OCNJ BEACHBLOCK (Gardens): Penn Discount \$895-\$1195, 3 bedrooms, 2 baths, sleeps six, all conveniences, Cable, AC, parking, free beachtags. Call Steve (610) 565-1312

Almanac is not responsible for contents of classified ad material.

Almanac Offices: New Location

Almanac has relocated its offices to the second floor of 3910 Chestnut Street/3111.

The main phone number and fax number remain the same.

Almanac

3910 Chestnut Street, 2nd floor
Philadelphia, PA 19104-3111
Phone: (215) 898-5274 or 5275 FAX: (215) 898-9137
E-Mail: almanac@upenn.edu
URL: www.upenn.edu/almanac

The University of Pennsylvania's journal of record, opinion and news is published Tuesdays during the academic year, and as needed during summer and holiday breaks. Its electronic editions on the Internet (accessible through the PennWeb) include HTML and Acrobat versions of the print edition, and interim information may be posted in electronic-only form. Guidelines for readers and contributors are available on request and online.

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Peer Instruction in Large Classes

Paul A. Heiney

As a high school student, I remember visiting a local college and being asked to try out the latest innovation: a computer program that guided the student through a series of physics questions. Selecting the right answer led to a different page from the wrong answer. My friends and I quickly figured out that this was more like a test than a game, and lost interest. This was my first experience with the “computer is a hammer, let’s find an educational nail” approach to educational technology. However, in this article I will describe a relatively new piece of technology that can be used in the service of what I consider to be a worthwhile pedagogical goal: making large lecture courses feel like small seminars.

Later, as a freshman at UC Santa Barbara, I had a much more stimulating educational experience. As an adjunct to the big introductory lecture course in physics, I was placed in a small seminar with four or five other students. In each meeting, we were challenged with tricky physics problems, and asked to go up to the board in front of the others and work them out. The experience was terrifying...but immensely productive, and after this “boot camp” I felt ready to handle anything else the undergraduate curriculum might throw at me.

As a professor, I have now taught versions of the big freshman physics course many times. Everyone pretty much handles these lectures the same way. The professor explains the new concepts and equations, and then works out a number of sample problems on the board in front of the class. This is in fact exactly what the textbook does, except that the book has better pictures and makes fewer mistakes. The students dutifully write everything down and hope that they will understand it before the exam. Student evaluations tend to reflect the clarity of the lectures and the extent to which good lecture notes can be produced; it also helps if the professor is personable and charismatic.

A few years ago, despite my skepticism towards most educational technology, I started experimenting with a different approach to lectures. The goal was to replicate, or at least come closer to, my freshman experience with being forced to think, while retaining the classroom of 50-150 students driven by course enrollments and faculty availability. The tool was the “Peer Instruction” approach original developed by Eric Mazur at Harvard. (E. Mazur, “Peer Instruction, A User’s Manual,” Prentice Hall, 1997; see also www.sas.upenn.edu/computing/node/194/ and www.ctl.sas.upenn.edu/tools/VideoDiscussions.htm).

In a typical implementation of this approach, I start with a brief explanation of the next concept or topic. I then present the students with a short puzzle or problem incorporating this concept. The students discuss the problem in small groups of 2-4, and then vote using polling hardware or “clickers” similar to TV remotes. After everyone has voted, the results appear on the screen at the front of the class. A well-chosen problem is one for which about 70% of the students get the right answer. If too many students pick one of the “distracter” questions, I spend a few more minutes addressing the issues that were raised. Sometimes, I will also ask a particular student (chosen at random) to explain his/her reasoning to the class. Otherwise, it’s on to the next topic. The whole cycle takes about ten minutes.

The obvious benefit to this approach is that I get immediate feedback as to whether the students are “getting it.” You don’t just have the same

four bright students asking the questions; the confused ones in the back of the room are also forced to respond. The anonymous nature of the voting is important; when I have done the same thing with a show of hands instead of the clickers, the responses are much more homogeneous, indicating that students are unwilling to vote against the majority.

A less obvious but more valuable consequence of the peer instruction approach is that, roughly every ten minutes, the students are forced to stop taking notes, wake up, and start thinking. Again, for a well-chosen problem, there is more than one answer that seems reasonable, and the discussion is often vigorous. By explaining their reasoning to others in their group the students are also internalizing their own grasp of the concepts.

A common criticism of peer instruction goes something like this: “The students don’t know anything, that’s why they are paying lots of money to be in your class. They would get much better value for their money by listening to the professor.” The crucial difference is that this is a *guided* discussion. I still provide the context, select the problems, and adapt to the students’ responses. By engaging in a discussion with their peers, the students have become active learners rather than passive recipients of received knowledge. A real seminar course, with 5-15 students in a small room working at the blackboard, would be better...but this is clearly not feasible for Physics 101 (or Chemistry or Psychology or any of the other large-enrollment introductory courses).

Since the lecture hour is of fixed length, something is given up, usually most of the example problems. In my view this is a reasonable tradeoff; the students are better off thinking carefully about a smaller number of problems than hearing a more superficial exposition of more examples — after all, there is always the textbook.

Will this approach work in other disciplines? I expect that it would work naturally in any subject where questions can be posed in a multiple-choice format, with one “correct” answer and several answers that are wrong but not obviously so. Thus, the sciences, engineering, medicine, and the more quantitative parts of the social sciences. Indeed, my colleague Melissa Wilde in sociology has been using a very similar approach. Perhaps less so in the humanities, where questions tend to be more open-ended. (For example, I have no idea how to usefully recast “Why is Hamlet so indecisive?” as a multiple-choice peer instruction question). On the other hand, departments in the humanities seem to roster many more seminar-size courses, perhaps for exactly this reason.

How well does it work? The jury is out, but the indications are positive. Anecdotally, a number of students have told me that they enjoy this approach, but my overall student evaluation ratings have not substantially changed. I suspect that this is because my personal clarity, charisma, etc., have not changed much. When I have used the peer instruction approach opposite other professors in different sections of the same course, the students’ exam grades tend to be similar.

A peer instruction lecture is about the same amount of work to prepare as a traditional lecture. Relinquishing some control over what will happen in the classroom is a bit of a high wire act, and can be nerve wracking at first. On the other hand, it is extremely satisfying to see sleepy eyes and faces bent over notes replaced by animated discussions.

Paul A. Heiney is a professor of physics and astronomy in the School of Arts and Sciences and was faculty director of the Benjamin Franklin Scholars program from 2004 until 2009.

This essay continues the series that began in the fall of 1994 as the joint creation of the College of Arts and Sciences and the Lindback Society for Distinguished Teaching.

See www.upenn.edu/almanac/teach/teachall.html for the previous essays.