The federal agencies that enforce export control laws are paying more attention to transactions between U.S. universities and foreign scientists and entities. It is critical that the University now develop and implement a process for screening of certain types of visiting foreign scholars and researchers to protect against violations of export control laws.

When to request foreign visitor screening? The foreign visitor screen process must be completed before sending an invitation, submitting an unpaid or paid appointment to the Academic Resource System (ARS) and before IES applies for a visa.

Who must be screened?

- All visitors who are nationals/citizens of Iran, Sudan, Syria, Cuba or North Korea must undergo foreign entity screening regardless of length of stay and regardless of the activity in which they will be participating at UM.
- All other foreign visitors, regardless of length of stay, who will collaborate or participate in University research or training in the biological or physical sciences, engineering, mathematics, information security (including encryption), software development, or related technologies and fields, whether or not the collaboration occurs within the scope of a sponsored research agreement.
News in IPST

Professor Fisher Awarded Ph.D. Honoris Causa by Weizmann Institute

The Weizmann Institute of Science has conferred upon Professor Michael E. Fisher the title of Ph.D. honoris causa. Professor Fisher joins an illustrious group of men and women who have been honored by the Weizmann Institute in recognition of their outstanding contributions to science or society. The ceremony of conferment took place at the 61st Annual Meeting of the Institute’s International Board on Monday, November 9, 2009 in Rehovot, Israel.

John D. Weeks elected to the National Academy of Sciences

John D. Weeks, Distinguished University Professor, Institute for Physical Science and Technology and the Department of Chemistry and Biochemistry, was elected Fellow of the National Academy of Sciences April 28, 2009. The election was held during the business session of the 146th annual meeting of the Academy.

International Meteorological Organization Prize Awarded to Eugenia Kalnay

The 54th IMO Prize, WMO’s most prestigious prize, was awarded by the 61st session of the WMO Executive Council, June 3-12, 2009, to Eugenia Kalnay of the Institute for Physical Science and Technology and the Department of Atmospheric and Oce-

Chris Jarzynski Named Fellow in the American Physical Society

Chris Jarzynski, Chemistry and Biochemistry and the Institute for Physical Science and Technology, was named a Fellow in the American Physical Society at their November 2009 meeting. Election to the APS is limited to one-half of one percent of the membership.

His citation, which will appear on his Fellowship Certificate, will read:

For pioneering work in non-equilibrium statistical mechanics, especially his elegant equality relating free energy differences between two equilibrium states to averaged work expended in non-equilibrium transformations between them.

His name and citation will be published in the March 2010 issue of APS News and on the Fellowship Page of the APS Home Page at http://www.aps.org.

Election to Royal Society of Chemistry and Humboldt Research Award—2009

Professor Devarajan Thirumalai, of the Institute for Physical Science and Technology and the Department of Chemistry and Biochemistry, was elected Fellow of the Royal Society of Chemistry. He also received a Humboldt Research Award for Senior U.S. Scientists in recognition of his past accomplishments in research and teaching.
Scientific Ethics Course—Taught by IPST Faculty

Ethical conduct by scientists and students is generally assumed; however recently a number of very serious events have shown that informal oral tradition is often insufficient for informing scientists of the proper ethical standards for their work. In response to this, and general National Institutes of Health (NIH) requirements that graduate students working in NIH laboratories receive training in scientific ethics, a new course is being offered—Case Studies in Scientific Ethics (CHPH 714)—which will be taught Winter Term 2010 by Charles Clark. The availability of this course was mentioned to the National Science Foundation (NSF) review panel that visited the Joint Quantum Institute Physics Frontiers Center on November 9, 2009 and the panel was enthusiastic about the offering. For more information, visit the new Ethical Conduct of Research portal on our site.

Dave Thirumalai published in Chemical & Engineering News

In the November 30, 2009 issue of the Chemical & Engineering News, Volume 87, Number 48, page 29, the team led by Dave Thirumalai (IPST, UMCP) and Alexander D. MacKerell Jr. (UMBC) now reports all-atom molecular dynamics simulations that reveal how urea hydrogen bonds and stacks with RNA’s bases, making normal interaction between bases impossible.

Katepalli Sreenivasan named College Park Professor

Katepalli R. Sreenivasan of the Institute for Physical Science and Technology has been appointed College Park Professor by University of Maryland President C.D. Mote, Jr., effective October 1, 2009. This is a tribute to Professor Sreenivasan’s outstanding contributions and accomplishments in Science and Engineering.

Past and Present Students Doing Well

Dr. Hsu-Wei Fang, the last Ph.D. student of Jan V. Sengers, was promoted to full professor at the National Taipei University of Technology in August 2009.

Jordan Horowitz, student of Chris Jarzynski, has just accepted a postdoctoral position with Professor Juan Parondo at the Complutense University of Madrid in Spain, to begin 2010.
CREAM Project Launch

The Cosmic Ray Energetics and Mass (CREAM) group is in Antarctica for the launch of their instrument, which arrived in October.

CREAM was launched on December 1. This is the earliest they have ever launched an LDB flight in Antarctica and they have a good shot at breaking their own duration record this season! They will have 24/7 operation in their Science Operation Center, CSS Room 4360, during the flight—likely to be in operation throughout Christmas and New Year holidays. Please stop by and take a look at what's happening with the flight.

For more information and photos please visit their website at http://cosmicray.umd.edu/cream/.
Scholarship for Service Program - SMART

The Science, Mathematics, And Research for Transformation (SMART) scholarship-for-service Program fully funds undergraduate and graduate degrees in a wide range of technical areas, including all fields of Engineering, Physics, Chemistry, Biology, Brain and Cognitive Sciences, and Mathematics.

A SMART brochure and application can be found at www.asee.org/SMART. The application deadline is December 15, 2009 for the 2010 school year.

SMART provides:
- Full Tuition to any accredited US University
- A very generous stipend while in school
- $25,000 for undergraduates
- $36,000 for masters candidates
- $38,000 to 41,000 for doctoral candidates
- Book allowance of $1,000
- Health Insurance
- Paid Summer internships
- All required student fees
- Travel fees for internships

Summer internships at Labs are required. In return for fully funding their education, students are required to work as a civilian employee at a Service (Army, Navy, Air Force) or DoD Agency (NSA, DIA, DARPA, etc.) laboratory for a period equal to the time the program paid for their schooling. Students must be US Citizens, able to obtain a DoD Security Clearance, and be willing to work in a defense laboratory upon graduation.

There will be approximately 300 new awards this year. While the University of Maryland is one of the top schools in terms of SMART recipients, we can greatly increase the number of students supported in this program.

Please direct any interested students to http://www.asee.org/fellowships/smart. There are links to the application portal and other program related information. Additional applicant and SMART related questions can be answered via smart@asee.org, P: (202) 331-3544.

News from OIT - Exchange for Faculty and Staff

Microsoft Exchange is coming to the University of Maryland. During 2009, all faculty and staff members currently using the mail@umd.edu system will be migrated onto the Exchange system. The migration to Exchange will provide UM with a mission-critical communications tool. Today’s e-mail users look for rich, efficient access to e-mail, calendars, attachments, contacts, and more. Exchange provides an integrated solution for managing time and information—it links your calendar, contact list, e-mail, and “to do” lists all in one place. More information will be made available as it becomes available.

Additional information can be found at http://www.helpdesk.umd.edu/Exchange_Migration/.
December 8, 2009 the Institute for Physical Science and Technology will host the Fifteenth Annual Shih-I Pai Lecture series. The guest lecturer this year is Professor Simon Asher Levin, the Department of Ecology and Evolutionary Biology, Princeton University and the Center for Applied Mathematics, Cornell University. Professor Levin’s topic will be “The Challenge of Sustainability: Lessons from an Evolutionary Perspective”. The lecture will be at 4:00 p.m. in the 1410 Physics Lecture Hall in the Physics Building.

A reception will be held at 3:00 p.m. in the Math Rotunda.

This year there will be two additional lectures given in Room 1116 of the IPST Building. Dr. Michelle Girvan, Physics Department and the Institute for Physical Science and Technology will present “Modeling the Dynamics of Gene Networks” at 11-11:45 a.m. Dr. Ramanan Laxminarayan, the Center for Disease Dynamics, Economics & Policy, Resources for the Future will present “Global Public Goods in Surveillance, Reporting and Control of Infectious Diseases” at 11:45 a.m. - 12:30 p.m.

The past speakers in the series are:

Y.C. Bertram Fung
Jurgen Zierep
Y.T. Li
Leo P. Kadanoff
Harry Swinney
Guenter Ahlers
Katepalli Sreenivasan
Grigory Barenblatt
David Ruelle
Albert J. Libchaber
Susan W. Kieffer
Nancy J. Kopell
Vera C. Rubin
Eugenia Kalnay
As you’ve heard through the media and also on campus, many of our students have visited the Health Center with flu-like symptoms. For those interested in receiving the flu shot here on campus, please visit http://www.health.umd.edu for details on clinic times available.

If you are feeling rundown, achy and feverish, here are some home self-care strategies that will help.

1. Create a “Flu Kit” consisting of non-aspirin fever-reducing medication, a thermometer, a decongestant, tissues, hand sanitizer, some surgical masks, soup, crackers, and tea or Gatorade type beverage.
2. Get vaccinated for seasonal and H1N1 flu. The Health Center offers the H1N1 vaccine. People at higher risk for the 2009 H1N1 flu are pregnant women and people with chronic medical conditions (asthma, heart disease, or diabetes).
3. Practice good hand hygiene by washing your hands with soap and water, especially after coughing or sneezing. Alcohol-based hand cleaners are also effective.
4. Practice respiratory etiquette by covering your mouth and nose with a tissue when you cough or sneeze. Throw used tissues into the trash. Avoid touching your eyes, nose, or mouth; germs spread this way.
5. If you do get the flu or flu-like illness (cough, runny nose, fatigue, muscle aches, fever, chills, nausea), drink plenty of fluids, get plenty of rest, and take a non-aspirin medication for fever. Seek professional advice as needed, but especially if you have shortness of breath, chest pain or pressure, increasing fever, dizziness or confusion, or severe or persistent vomiting.

Remember, don’t come to work or go to class, and stay home for at least 24 hours after you no longer have a fever if you have the flu or flu-like illness. Don’t count the time until you’re no longer taking fever-reducing medications.

For more information about the University’s H1N1 plan, go to http://www.umd.edu/umnews/h1n1fall09.cfm. For the most up-to-date information on the flu, visit http://www.flu.gov. Additional resources can be found at CDC www.cdc.gov/h1n1flu, FluTracker flutracker.rhizalabs.com, and Mayo www.mayoclinic.com.

H1N1 - Swine Flu: What you need to know

CMPS’ monthly newsletter will now include a section CMPS Discovery describing important discoveries made at the University in the simplest possible terms. These discoveries often go unrecognized, as they may not be easily understood from a detailed technical paper and/or may not be transparent in the exhaustive listing of publications that is characteristic of most curriculum vitae. These should be sent as “nuggets”, consisting of 1-3 sentences that convey the essence of a particular result and its importance to a community of researchers and/or how it is potentially transformative to a particular field of inquiry. If you have such a nugget of knowledge, please forward it to Bonnie Dorr at bdorr@umd.edu.

News from College of Computer, Mathematical and Physical Sciences
Interim Process for Screening Foreign Visitors and Entities

Who does not require screening?

- Foreign persons who have applied, been accepted and/or are enrolled in any degree granting program that the University of Maryland offers.
- Foreign visitors who provide documentation that they hold permanent resident alien status in the U.S. or have been granted asylum or refugee status by the US.
- Foreign visitors who will be involved exclusively in one or more of the following activities:
  - Creating or collaborating with University faculty to develop artistic works (visual art, music, drama) or serving as a resident artist; and/or
  - Participating or collaborating in University research or training that does not involve the sciences, engineering, mathematics, information security (including encryption), software development, or related technologies and fields; and/or
  - Teaching University courses

What’s the screening process? Either ORAA or IES will screen the foreign visitors and their employers against federal restricted, blocked and denied entity lists.

What are the possible ORAA/IES responses?

- If they are not on any restricted list, ORAA/IES will send an email to the requestor stating “This person and affiliated institution have been screened against restricted, blocked and denied entity lists and cleared by ORAA/IES, <DATE>”.
- If they are identified in one or more entity lists, ORAA/IES will send the following response to the person who submitted the request, with copies to IES, Academic Affairs, the Vice President for Research and the Legal Office, “A further review must be conducted. It may be necessary to contact you or the faculty host for additional information”.
- If this response is received, no invitation may be issued, no appointment made, no visa application processed. Upon completion of the review, ORAA/IES may send an email:
  - Clearing the visitor. Then the department may proceed with an invitation and/or appointment.
  - Stating the visitor is cleared, provided the department develops and submits to ORAA a technology control plan to prevent the visitor from accessing export controlled information, software and/or technology.
  - Notifying the department that the University will have to apply for a license from the applicable government agency as a condition of hosting this person for the proposed activities. No invitation, etc. may be done until the license issue is resolved.

What’s the time frame for all this? It’s the intent to issue one of the responses described above within one week of their receipt of a request. If further review is required, the duration of that review will depend on what kind of additional information is required, how long it takes to obtain that information, and/or whether the review requires a legal opinion. The review process may take several weeks and obtaining a license may take several months.

Procedure for foreign visitors who require screening? For each foreign visitor who is subject to the screening process, the department should send an email to oraaexport@umresearch.umd.edu that includes the following information:

- Visitor’s full name (as it appears on their passport) and citizenship
- Name and address of the visitor’s employer or affiliate institution
- Name of faculty host/investigator
- Host Department/College
- Dates of visit/appointment
- The ORAA sponsored project ID number, if visitor is expected to work on any sponsored project
- Technical scope of the research in which the visitor will be participating/collaborating including field of investigation and major technologies involved.
Sixth Annual Burgers Symposium

The Sixth Annual Symposium of the Burgers Program for Fluid Dynamics was held on Wednesday, November 18, 2009.

Giving the Burger Lecture this year was Kees Vuik, J.M. Burgerscentreum, Delft University of Technology, The Netherlands. He is a member of the J.M. Burgerscentreum, a consortium of research units at Dutch universities pursuing various aspects of fluid dynamics. He spoke on “Preconditioners for Incompressible Flows”.

Other symposium lectures were “Five Centuries of Turbulence: from da Vinci, to Kolmogorov, to the Universal Log Law”, by Mohamed Gad-el-Hak of the Department of Mechanical Engineering, Virginia Commonwealth University; “Breeding: An Easy Way to Find and Explain Instabilities”, by Eugenia Kalnay of the Department of Atmospheric and Oceanic Science, the Institute for Physical Science and Technology, and the Earth System Science Interdisciplinary Center, University of Maryland; and “Deciphering the Structure of Gaseous Detonations by Numerical Simulation”, by Ralf Deiterding, Computer Science and Mathematics Division, Oak Ridge National Laboratory.

The symposium also included a graduate student and postdoctoral fellow Poster Session. The winners this year were: “Stretching Giant Unilamellar Vesicles and the Mechanical Properties of Lipid Bilayers”, by Henan Zhou, Beatriz Burrola Gabilondo, Ilya Zhito-misrskiy, Willem van de Water and Wolfgang Losert and “Gravity-Capillary Lumps Generated by a Moving Pressure Source”, by James Diorio and James Duncan. The winners will receive a certificate and a $100 cash award.

Signing Documents Electronically

A scanner is an easy way to digitize your signature. Simply sign a piece of white paper, scan it into your computer, then drop it into documents. To drop it into a Word document, open the Insert tab on the Word ribbon. Click the Picture button. In the box that opens, navigate to your signature. Select it and click Insert.

You may need to resize your signature for your document. You will see boxes at the corners and sides of the image. Click and drag the corner buttons to resize the image. This will keep the proportions consistent. I suggest that you share signed documents in PDF format. That way, you can limit editing to them. You don’t want the contents to change after you’ve added your signature.

Should you wish assistance with this, contact Sandy Ratke (sratke@umd.edu), 4203 CSS, ext. 5-4877.
In preparation for the annual printing of the 2009-2010 University Faculty Staff Directory, everyone is reminded to check their address and phone information via the on-line university Directory at https://directory.umd.edu/search. Please note that in an effort to reduce costs and paper waste, University Publications will not be providing bulk copies of the faculty staff directory this year. The books will be provided on demand at a cost of $10.00 per book. University Printing will be providing more instructions on purchasing the phone books when they become available.

Spring Class Schedules

Spring is just around the corner and so are scheduling needs for the Institute. Please send your Spring 2010 Teaching Schedules to Denise Abu-Laban at dabulaba@umd.edu. Include the following:

- Courses name and number, day(s) of the week and time(s)
- Office hours, day(s) of the week and time(s)
- Symposiums that you regularly attend, day(s) of the week and time(s)

Maryland Charity Campaign / Faculty Staff Giving Campaign

The Maryland Charity Campaign and the Faculty Staff Campus Campaign are winding down. Deadline for donations is Tuesday, December 8, 2009. These need to be returned to Room 4211 CSS by that day.

Times are tough, but that’s when these organizations are needed the most. Please consider giving, even if it’s just a small amount. Done through payroll deduction, you could give as little as $1 a pay and still have $26 going to your chosen charity. How many of you stop at Starbuck’s a couple times a week, or more? One Venti cup of coffee (approximately $4.00) will net some worthy charity $104.

To learn more about these two important causes, you may visit these web sites:

Maryland Charity Campaign: http://mdcharity.org
Faculty Staff Campus Campaign: http://mdexcellence.umd.edu/fac_staff

Thank you in advance for your generosity and support of these worthwhile programs that benefit our fellow campus community and area neighbors. If you need additional information, please contact Denise Abu-Laban at 301.405.4814 or at dabulaba@umd.edu.
The primary mission of the Institute for Physical Science and Technology (IPST) is to foster excellence in interdisciplinary research and education at the University of Maryland. The Institute strives to provide an environment in which both theoretical and experimental research can flourish. Current research programs are in the areas of Biophysics, Chaotic Dynamics, Chemical Physics, Optical Physics, Space and Upper Atmospheric Physics, Scientific Computation, and Statistical Physics. The Institute takes pride in the fact that one third of the Distinguished University Professors on campus hold appointments in IPST and that a number of its faculty are National Academy of Science members. A few of the research topics of current concern to Institute faculty are:

- Studies of the properties of fluids far from equilibrium. Theories for the properties of superfluids, fluids in glasslike states, and fluids near critical points are being developed.
- Studies of electrons in the upper atmosphere. The Institute has a radio telescope at the South Pole to support these studies.
- Computation and Visualization in Fluid Dynamics and Magnetohydro-dynamics.
- A study of nonlinear mathematical systems which show very irregular or chaotic behavior.
- Studies of ionized gases in space varying from theoretical investigations of shock waves to experimental programs using packages on several spacecraft.
- Development and application of the tools of non-equilibrium statistical mechanics to the control of nano-structures on surfaces.

The Institute has approximately forty faculty members, most of whom hold a joint appointment with an academic unit. The majority of the joint appointments are with Physics, Mathematics, Chemistry, and Engineering. The Institute offers M.S. and Ph.D. degrees in Chemical Physics, Biophysics and Applied Mathematics & Statistics, and Scientific Computation, and provides financial support and faculty supervision for approximately sixty graduate students. Graduate students are drawn from various disciplines including Physics, Mathematics, Chemistry, and Engineering.
IPST
International Pot-Luck Holiday Celebration
Thursday
December 17, 2009
1116 IPST Building
1 - 4 p.m.

Bring your favorite food to share, homemade or otherwise

Monetary donations kindly accepted
Please give to Sandy Ratke
4203 CSS by Wed., December 16
The University of Maryland is again taking part in the Bonnie Johns Children’s Fund. This is the 17th year we have participated. The Fund requests donations of new stuffed bears (or other new stuffed animals) for children in need. These stuffed bears are given to children in homeless shelters, foster care, and in crisis. Last year we collected over 1,500 bears on campus! The drive ends Tuesday, December 15, 2009. Please get your bears to Patty Wynn, CSS 4115 before the 15th! We have been assured that all bears will be loved and hugged!

“Donate a new stuffed teddy bear, or other new stuffed animal, for children in need.”

Friends donated to date.

Deadline for March 2010 issue: February 1, 2010