Electronic Outreach: Beam Me Down

“While I am certain that many of the students were a bit overwhelmed by the barrage of unfamiliar terms, in both English and physics," Lett says, "they were attentive throughout and welcoming. When the talk was over a number of students asked questions and their engagement made it seem worth the effort.”

The event was arranged by Eduardo Gomez, a former postdoctoral associate in Lett’s group at NIST and a former student of JQI Fellow Luis Orozco. Gomez is trying to energize an atomic-molecular-optical physics group at the university. The JQI seminar is a way to bring in speakers that they otherwise would not be able to have. Since there are not many groups nearby in Mexico that can provide continued, next page

on appropriate topics, the use of web-based videoconferencing technology to bring in a few speakers provides a way to stimulate the group. Since the cost of travel cannot be justified for bringing in a speaker for such a seminar to such a small group, technology provides something of a substitute.

It is a tradition at some Universities and research centers to have a constant stream of very good speakers talking about their research work. This is an opportunity that is not common in other places like Universities in México. Having JQI-UASLP

On Friday, October 23, JQI and the Physics Frontier Center conducted their first international seminar. JQI Fellow Paul Lett gave a presentation titled “Quantum Imaging with Light From Four-Wave Mixing” to a group at the physics department of the Universidad Autónoma de San Luis Potosí, Mexico.

The talk featured an introduction to squeezed light and noise in quantum optical measurements, and some recent results from Lett’s group regarding the generation of quantum-correlated images using 4-wave mixing in hot rubidium vapor.

JQI Fellow Paul Lett conducted a live Web-based seminar for students at Universidad Autónoma de San Luis Potosi.
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“It is a tradition at some universities and research centers to have a constant stream of very good speakers talking about their research work,” Gomez says. “This is an opportunity that is not common in other places like universities in Mexico. Having international speakers is complicated due to money and the effort involved in an international trip. Video conferences are an attractive alternative.

“Without any highly specialized equipment there was a very reasonable transmission,” Gomez says of the event. “On one side Paul was delivering the talk at a microphone and camera, and on the other side a group of about a dozen enthusiastic students was listening to it. One should not underestimate the impact that events like this have on foreign students.

“Even with the difficulties associated with the language, there were nonetheless several questions from students who were just starting to hear about these topics. The group of students was diverse, including graduate students currently taking a course on atomic physics as well as undergraduate students who arrived having no idea about what squeezing means.

“San Luis Potosí is an example of a place in Mexico where people are starting to work on atomic physics. Simple events like this video conference certainly help in improving the quality of the science. It was the first event of this kind in San Luis Potosí -- and given the success, more will follow.”
On October 20, pioneering theorist and Nobel laureate Philip W. Anderson became the first winner of the Richard E. Prange Prize and Lectureship, an award created to honor the memory of the late Prof. Prange of the University of Maryland Department of Physics.

Anderson, currently Joseph Henry Professor of Physics at Princeton University, received the award from JQI Fellow Sankar Das Sarma -- Director of the Condensed Matter Theory Center, which established the award in conjunction with the UMD Physics Department -- UMD Physics Department Chair Drew Baden and Prange’s widow, chemistry professor Madeleine Joullié of the University of Pennsylvania, who instituted and funded the prize.

In conjunction with the award, Anderson delivered two addresses at UMD: a technical talk on Oct. 19 titled “Hidden Theories“ and a public talk on Oct. 20 about “Presenting Unpopular Theories.”

The event coincided with a review of the NSF Physics Frontier Center (PFC) at the JQI, and three members of the Center’s external review committee were in the audience for the public address: Wolfgang Ketterle of MIT, Charles Marcus of Harvard and Steven Girvin of Yale. That brought the number of Nobel Prize winners in the room to three: Anderson, Ketterle and PFC Co-Director Bill Phillips.

Anderson began by observing that “I was very fond of Dick [Prange] and thought very highly of him.” So the award “brings back all kind of nice memories.”

Prange joined the University of Maryland in 1961, and became an important and highly-respected voice in all departmental deliberations. After his retirement in 2000, he remained active in the department. He attended the physics colloquium on September 23, 2008--his 76th birthday. Afterward, he and Das Sarma had a vigorous discussion about the colloquium topic, the physics of graphene. His sudden death the next day was a shock to all who knew him.

Above: Sankar Das Sarma (center) unveils the Prange Prize, surrounded by (left to right) Drew Baden, Madeleine Joullié and awardee Philip Anderson. Below: Anderson takes questions after his talk.
Progress on all Fronts: The second floor of the Computer and Space Sciences Building continues to be a busy place. In the Ultracold Mixtures lab, Trey Porto’s group has the south side, where Dan Schwartz and Creston Herold (above) are assembling apparatus. On the north side (below), Ian Spielman -- shown here on location -- and his group are testing their optics. And on the other side of the wall, construction has begun on the new lab for Gretchen Campbell (at right) and her group.
On Sept. 24-27, the JQI sponsored the IONS-North America conference, held at the Jeong H. Kim Building on the UMD campus. IONS, the International OSA Network of Students, is a student run-organization dedicated to networking and academic interaction for international students of optics and photonics.

The conference, organized by the UMD SPIE/OSA student chapter, was attended by over 70 international participants from 15 countries and 10 U.S. states. Plenary speakers included JQI Fellow William D. Phillips and 2009 OSA President Thomas M. Baer. Some participants and speakers are shown in the top photo on this page.

The four-day meeting provided multiple valuable activities. Congressional visits were arranged with the help of OSA staff so that participants could meet with their legislators to speak about science policy and funding needs. All attendees toured local facilities including NASA-Goddard, NIST, NIH, ARL, NRL and the Naval Observatory. Also included in the schedule were student talks and poster sessions, a professional development program, and several networking events. IONS-NA concluded with a walking tour of the monuments and museums of the National Mall in downtown Washington, D.C. A group is shown at the Smithsonian Institution at bottom right. At bottom left, JQI Fellow Bill Phillips talks to UMD Physics professor Dieter Brill and others.
IONS, continued

Top left: A group from the IONS reception at OSA headquarters in Dupont Circle. Top right: Zuley Tomova and Mena Issler, IONS-NA Congressional Visits participants. Bottom, from left: Jemmelie Galang (IONS organizer), Thomas Baer (OSA President), Dieter Brill (UMD Physics Department), Brooke Hester (IONS organizer) and Birgit Brill.

All photos courtesy of IONS


JQI Fellow **Alan Migdall** presented a lecture and demonstrations explaining the scientific background behind the fiber-optic component of this year’s Nobel Prize in Physics. The talk was Oct. 12 at Lakelands Park Middle School in Gaithersburg, MD and was attended by two classes of seventh graders.

Demonstrations included optical reflection, refraction, scattering, diffraction, energy transfer and total internal reflection -- which is key to making fiber optics work.

Migdall says that “the biggest hit was using a blue laser to pop balloons, showing energy transfer and that I am a Jedi knight.”

**JQI Fellow Charles Clark** will speak at the Physics Colloquium, Georgetown University, November 3, 2009, on “Over the rainbow: extreme adventures in the ultraviolet.” On Oct. 7, Clark gave a talk titled “Relativity at a billionth of the speed of light” at the Joint Atomic Physics Seminar at Harvard University, and on Oct. 26, he delivered two guest lectures at Bucknell University.

Clark has been appointed to the Leadership Board, College of Sciences and Technology, Western Washington University, and serves as a participant in the Adopt-a-Physicist Program at the American Institute of Physics.


**JQI Fellow Paul Lett** gave talks at a meeting in Leiden, The Netherlands, on Sept. 14 and in Paris on Sept. 18. The talks were titled “Quantum Imaging with Light From Four-Wave Mixing.” The Leiden talk was at a European Network meeting for the unfortunately named HIDEAS (High-dimensional entangled systems) collaboration. The talk in Paris was at the Université Pierre et Marie Curie.

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