Greetings from the Chair

The Department of Physics has continued its growth in the 2013-2014 Academic Year. The number of majors in our department has been growing over the last six academic years, as shown in the graph below.

This year again, we have an incoming Physics freshmen class of over 40 students, and all of our lecture and laboratory courses have been closed at full capacity, even though we offered two additional sections of the Physics Laboratory courses and increased the enrollment capacity of the introductory Physics lecture courses three times to incorporate the increasing flux of students coming into our Physics programs.

In spite of these increasingly demanding situations, the department’s scholarly productivity and extramural funding have continued to be at very high levels. Over this academic year, the Physics Faculty produced one edited book, two book chapters, one book review, four peer-reviewed journal articles in high-impact publications, 14 presented posters at national and international conferences, and six invited lectures, which totals to 28 scholarship activities. Given that the department consists of four tenure-track and/or tenured professors, this averages to seven scholar activities per faculty member.

The total number of undergraduate researchers who are advised by the Physics Faculty is now 25. All of these students have presented their work at national or international conferences.

Our intensive recruitment efforts once again led a strong freshmen class for the Fall of 2014. We continued to publish our departmental newsletter, and we have re-established the Physics Seminar in 2013-2014. This weekly seminar series includes talks from distinguished guest lecturers, faculty, and undergraduate and graduate students.

In 2013-2014, Dr. Jose Lopez was promoted to Associate Professor with tenure, and Dr. Anthony L. Troha and Dr. Weining Wang continued to improve the functionality of our Introductory Physics, Electronics, and Advanced Physics Laboratories.

The Department of Physics' Astronomical Observatory has been visited by faculty, students, and members of the general public throughout the year. The student-run “Observatory Nights” were coordinated with the Astronomy courses that the department offers.

The New Jersey Space Grant Consortium (NJSGC)–NASA grants have been renewed and expanded. In addition to the two academic-year Fellowship grants available to SHU STEM students, eight new undergraduate Summer research fellowships worth $19,200 were awarded to the Department of Physics through the NJSGC–NASA Consortium.

One of our Alumni, Adam Behr (Class of 2011, Physics research supervisor: Dr. Mitra Shojania-Feizabadi), received The Woodrow Wilson National Fellowship Foundation’s New Jersey Teaching Fellowship.

There were 14 student research presentations at local, national, and international conferences, and one student fellowship award from the American Physical Society. The Physics Faculty applied for eight research grants worth a total of $142,200 and secured $72,200 in external grants during the 2013-2014 Academic Year.

We are looking forward to another great year!

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Student Fellowships and Awards

- Fernanda Duarte, Isabella Duarte, and Angelique Demetillo received Clare Boothe Luce Scholar Awards to perform various experiments related to Plasma Physics and Organic Photovoltaic Cells during the Summer.
- Arya Nabizadeh, Darren J. Lesinski, and Luis Cerqueira have been rewarded NASA-Sponsored New Jersey Space Grant Consortium Summer Fellowships.
- Stacie Ballou, Michael C. Brown, Isabella Duarte, Jesus M. Duran, Kyle M. Honsinger, Arya A. Nabizadeh, Michael Rupnarain, and Anthony Scudieri have been inducted as members of Sigma Pi Sigma—The Physics Honor Society (see the picture on the next page).
- Leandro Gutierrez has been granted the American Physical Society’s (APS) Student Travel Award.

Student Conference Presentations

- Arya Nabizadeh, Leandro Gutierrez, Patrick Albers, Jesus M. Duran, Zachary E. Darby, and Michael O. McDougall presented various posters as part of their participation in the 18th Annual Petersheim Academic Exposition at Seton Hall University in March of 2014.

Where Did Our Graduates Go?

Industry
- William Alex Manners, Jr. ('14): Evans Analytical Group.

Medical School
- Leandro Gutierrez ('14): Rutgers University (UMDNJ).

Graduate School
- Kyle Honsigner ('14): The University of Copenhagen, Denmark.
- Adam Behr ('11): The College of New Jersey.

Laboratory Upgrade

Last Fall, the Advanced Physics Laboratory began to acquire new tools to create a workshop for the fabrication and repair of equipment in all of the Physics laboratories.

Three large tool cabinets were purchased to hold the new tools, and they are already filled to capacity. Another tool cabinet arrived recently, and plans are underway to mount the new continuously variable-speed drill press atop it. Next to these cabinets is a new workstation with additional storage, upon which will be mounted two vises.

Combined with the CNC (computer numerical control) milling machine, precision drill press, and 3-D printers in Dr. Lopez's Plasma Physics Laboratory, the department will have the ability to fabricate and maintain nearly any experimental apparatus, save for the most sophisticated electronic equipment.
**Society of Physics Students (SPS)**

**Election Results**

At the end of the Academic Year, the Seton Hall chapter of the SPS held its annual election to select the new executive board members for the 2014-2015 Academic Year. The elected officers were: Isabella Duarte as President of SPS, Fernanda Duarte as Vice-President, Darren J. Lesinski as Treasurer, and Patrick S. Wadie-Ibrahim as Secretary.

Some of the SPS Members sport their new hooded sweatshirts with the Chapter logo. Back row, from left to right: Zachary Darby, Patrick S. Wadie-Ibrahim, Darren J. Lesinski, David Rivella, Jesus Duran, Justin Hachlica, and Luis Cerqueira; front row, left to right: Michael M. Mount, Fernanda Duarte, Angelique Demetillo, and Isabella Duarte.

**SPS Out-Reach Activities**

On Friday, April 4, 2014, four students from our SPS chapter (David Rivella, Zachary E. Darby, Justin M. Hachlica and Luis C. Cerqueira) visited Dutch Neck Elementary School in Plainsboro, New Jersey to take part in their “Science Day”. Our four SPS members taught the elementary school students about projectile motion with catapults, hand and foot rockets, and slingshots. The objective was to get students excited and interested in the science field at a very young age. More than 200 enthusiastic pupils participated in our chapter's demonstrations entitled “Flinging Things”.

David Rivella teaches the kids about projectile motion using a slingshot.

Zachary Darby gives a demonstration with a catapult.

**SPS Hosts Zone 3 Meeting**

In April of 2014, our chapter of SPS was honored to host the Zone 3 Meeting. About 25 people from our chapter as well as from the University of Delaware, St. Peter's University, and Drexel University attended the meeting at Seton Hall University. The Zone 3 Meeting was mostly student-led, with five student oral presentations and about 12 poster presenters. We also had three professional speakers: Darren Lesinski from Total Specialties, Inc., Dr. Debing Zeng from St. Peter's University, and Prof. Daniel Guerrero from Seton Hall University. Dr. Jose Lopez gave the keynote lecture. Students presented their research, and we had guided laboratory tours for our invited guests to see the facilities and learn about how the research was conducted. All of the students and faculty had a chance to communicate with each other and, most importantly, network.

SPS members before the meeting began in the McNulty Hall Amphitheatre.

**Sigma Pi Sigma—Physics Honor Society**

On May 6, 2014, Seton Hall’s Sigma Pi Sigma chapter held an induction ceremony at SuzyQue’s Bar and Grill in West Orange, N.J. The formalities started with a ceremony in which the new inductees learned about the history and objectives of Sigma Pi Sigma, and finished with a very nice dinner. The students had the opportunity to share their interests, plans after graduation, and future goals with the faculty members and fellow students. The new members are Stacie M. Ballou, Michael C. Brown, Isabella Duarte, Jesus M. Duran, Kyle M. Honsinger, Arya A. Nabizadeh, Michael Rupnarin, and Anthony Scudieri.

The brand-new inductees with the Faculty. From left to right: Dr. Jose Lopez, Dr. Alper Şahiner, Isabella Duarte, Anthony Scudieri, Kyle Honsinger, Stacey Ballou, Jesus Duran, Dr. Mitra Shojania-Feizabadi, Prof. Raffi M. Manjikian, Dr. Weining Wang, and Dr. Anthony L. Troha.

Dr. Lopez (left) presents Kyle Honsinger with his Sigma Pi Sigma induction certificate.