

Vanderbilt University SPIE Student Chapter Annual Report
 August 2015

1) Chapter Officers:

	Name	SPIE ID #	Email
President:	Joe Sharick	3569304	joseph.t.sharick@vanderbilt.edu
Vice President:	Mohit Ganguly	3624892	mohit.ganguly@vanderbilt.edu
Treasurer:	Tiffany Heaster	3690833	tiffany.m.heaster@vanderbilt.edu
Secretary:	Daniel Gil	3550727	daniel.a.gil@vanderbilt.edu

2) List of Current Student Chapter Members:

Student Members
Abdallah, Shaimaa
Ayala, Oscar
Cannon, Taylor
Diaz Martinez, Myriam
Flint, Katelyn
Ford, Jeremy
Ganguly, Mohit
Gifford, Aliya
Gil, Daniel
Gowani, Zain
Harrigan, Robert
Heaster, Tiffany
Jenkins, John Logan
Lapierre-Landry, Maryse
Liu, Yuan
Makowski, Alex
McWade, Melanie
Nguyen, John Quan
O'Brien, Christine
Pence, Isaac
Poole, Kristin
Shah, Amy
Sharick, Joe
Sun, Peizhen
Tucker-Schwartz, Jason
Walsh, Alex
Xu, Zhoubing
Zhao, Yiyuan

Alumni Members
Cayce, Jonathan
Keller, Matthew
Welch, Edward
Patil, Chetan
Santoro, David
Weiss, Sharon

3) Details of Chapter activities since last report:

This year was a very exciting and busy year for the Vanderbilt University SPIE Student Chapter, as we made it our mission to raise awareness for the use of light and light-based technologies as part of our celebration of the International Year of Light. We also had another year of growth, increasing the number of student members to 28. We built on the success of the initial year of our Vanderbilt University Biomedical Photonics (VUBP) Seminar Series and hosted six more incredible external speakers and four internal speakers from Vanderbilt University:

External Speakers:

Paul Campagnola, University of Wisconsin (39 attendees)
Philip Stahl, SPIE & NASA (48 attendees)
Jason McClure, Princeton Instruments (25 attendees)
Eric Potma, UC Irvine (35 attendees)
Jeffrey Oleske, Andor (30 attendees)
James Mansfield, PerkinElmer

Internal speakers:

Shane Hutson, Vanderbilt University (22 attendees)
Jason Valentine, Vanderbilt University (34 attendees)
Karen Joos, Vanderbilt University (36 attendees)
Sten Vermund, Vanderbilt University (40 attendees)

In addition to the seminars themselves, we organized coffee hours with our external speakers which were reserved for graduate students to talk with the speakers and ask them questions about their research and careers. In particular, our coffee hour with SPIE President Dr. Philip Stahl was particularly enlightening for our members, because it gave us the opportunity to discuss not only what he considered to be the qualities that made a successful SPIE Student Chapter, but also his personal vision for what types of activities that SPIE Student Chapters could engage in order to celebrate the International Year of Light. The student coffee hour with Jeffrey Oleske from Andor gave us the opportunity to discuss the process of pursuing a career in industry and the opportunities therein for PhDs.

In part due to the success of our Student Chapter in promoting optics and photonics research on campus, the establishment of the Vanderbilt Biophotonics Center was announced in February. The Biophotonics Center includes 40 faculty members from 25 different academic and clinical departments at Vanderbilt. We expect that the increased visibility of biophotonics research on campus as a result of this new center will lead to an exciting increase in membership of our Student Chapter.

We have continued holding weekly meetings with student members and professors to discuss research and chapter activities. Our group has continued to mentor high school-level and undergraduate-level students on independent research projects and many of these partnerships have resulted in authorship on posters, journal publications, and even SPIE Author Travel Grant funding for one of our undergraduates to present at Photonics West 2015. Each week we organize a student-run journal club aimed at discussing new research topics outside of our areas of expertise. Outside of the workplace we have organized monthly “fluids labs” where our students can socialize and network with optics and photonics students.

This past March, our SPIE Student Chapter, The Vanderbilt Biophotonics Center, and Vanderbilt University sponsored Optics Day at the local hands-on science museum Adventure Science Center in Nashville, Tennessee. We organized a number of booths staffed by graduate and undergraduate students with hands-on activities designed to teach children and their families concepts such as absorption, scattering, diffraction, fluorescence, and fiber optics. We believe that by showing young children how the light-based phenomena they experience all around them are related to higher-level science and engineering concepts and are even used in medical diagnosis and treatment will inspire them to pursue STEM-based careers later in life. SPIE Student Chapter funds were used to pay for materials used in the hands-on demonstrations at the event as well as lunch for the graduate students and undergraduate volunteers.

Our group has been working with the Vanderbilt Biomedical Engineering Graduate Student Association to perform outreach activities with high school students from a Metro-Nashville Public High School (Glenclyff High School). These students are traditionally under-represented in the fields of optics and photonics, and our main goals have included exposing these students to light-based technologies and careers in the hopes that they will pursue high education in light-related fields. We have also done outreach activities with a variety of student groups that tour Vanderbilt University such as the Governor’s School, a group of highly talented high school students throughout the state of Tennessee that engage in a summer program that exposes them to cutting edge research and facilities.

The chapter grant funding received this past year from SPIE was also spent on putting on the seminar series. We used the funds to pay for the speakers to travel to Vanderbilt and stay the night in a hotel. The funds were also used towards providing lunch during the talks. We received an SPIE Visiting Lecturer Grant to bring Dr. Eric Potma and Dr. Joe Izatt to Vanderbilt, but unfortunately a winter storm postponed Dr. Izatt’s visit and we are currently working to reschedule a date for him to visit.

4) Details of planned activities for the future:

We are excited to continue our successful seminar series and have already booked the following speakers for the upcoming semester:

External:

Kristen Meyers, Columbia University

Xingde Li, Johns Hopkins University

Vasan Venugopalan, UC Irvine

Andrew Dunn, Texas

Renishaw plc

Joe Izatt, Duke University (Date TBD)

Internal:

Anita Mahadevan-Jansen, Vanderbilt University

Madan Jagasia, Vanderbilt University

We plan to continue having weekly research meetings, “fluid labs”, and our student-run journal clubs. We are working on expanding our outreach activities and developing new sessions with an emphasis on hands-on learning of complex methods such as Raman spectroscopy and optical coherence tomography for a variety of ages and levels of expertise.

We are planning to team up with the Vanderbilt University IEEE Student Chapter to organize events in our local area for International “Introduce a Girl to Photonics” Week in October. These events will focus on getting young women in the Nashville area more interested in pursuing STEM careers, especially in the field of photonics.

5) Financial Information

- a. Beginning balance -\$875.70
- b. Funds raised and expended (indicate amounts and source/destination)
 - Funds raised-
 - \$900 – SPIE student chapter funds
 - \$250 – Vanderbilt Student Activity Fee Sponsorship
 - \$200 – Andor Sponsorship
 - \$2,890 – 2015 SPIE Education Outreach Grant
 - Total = \$4,240
 - Funds Expended-
 - \$212.26 – Valentine Seminar
 - \$190.50 – Hutson Seminar
 - \$181.50 – Vermund Seminar
 - \$145.34 – Joos Seminar
 - \$201.50 – Potma Seminar (remaining costs after SPIE Visiting Lecturer Grant)
 - \$85.68 – Mansfield Seminar
 - \$459.23 – Optics Day activities
 - \$100.00 – Glencliff High School outreach activities
 - Total= \$1,576.01
- c. Details of SPIE funding received- We received \$900 in SPIE student chapter funds and \$2,890 for a 2015 SPIE Education Outreach Grant. We also received an SPIE Visiting Lecturer Grant but this info was not included above because visitors are reimbursed directly by SPIE.
- d. Other sources (please specify)- Andor Sponsorship and Vanderbilt Student Activity Fee Sponsorship
- e. Ending balance= \$3,539.69