

### **Outgoing Officers**

President – Ashwin Wagadarikar

Vice President – Neil Terry

Treasurer – Ryan McNabb

Secretary – Kenny Tao

### **Newly elected Officers**

President – Neil Terry

Vice President - Tyler Drake

Treasurer – Ryan McNabb

Secretary - Michael Giacomelli

### **Current members**

Janelle Bender

Bradley Bower

Nihshanka Debroy

Christy Fernandez

Dan Fu

Christina Li

Xiang Li

Ryan McNabb

Stephen Odaibo

Andrew Portnoy

Jin Wooi Tan

Neil Terry

Ashwin Wagadarikar

Kenny Tao

Ryan McNabb

Tyler Drake

Michael Giacomelli

### **Chapter Activities**

Below we present a list of the chapter activities over the past year.

#### **9/11/2008 - Welcome ice cream social**

We began our activities for the year by holding an ice cream social with a presentation delivered to describe the year's activities to current and new members of DOSC.



DOSC members enjoying ice cream.

**10/30/2008 - Trip to Pearsontown elementary school**

We conducted an optics outreach activity at Pearsontown elementary school. The class had close to 30 students from grades 3 to 5. We began our session by giving a presentation to the students about light and optics in general. It also allowed students to ask questions. Then, we set up multiple stations around the room. The kids split up into groups of 5-6 students that went around the room from station to station. The demos at the various stations included optical illusions, a total internal reflection waterspout, jello optics (a big hit!), a telescope and a mirror setup to guide a laser to hit a number of targets simultaneously.



Students at Pearsontown elementary school listening intently.



Neil delivering a presentation on light and optics to the students.

The Fitzpatrick Institute of Photonics (FIP) and the Duke OSA/SPIE Chapter (DOSC) continued partnering to present posters at the regular Friday breakfasts. This allowed students and faculty from various departments to interact in an informal environment on a regular basis.

#### **12/05/2008 - Trip to Morehead observatory**

We visited UNC's Morehead observatory which operates a 24" Cassegrain telescope. Brian Pohl, a graduate student in Physics gave us a guided tour. Members were able to observe the moon, a couple of nebulae and a binary star. Based on the connections we have made here, we might work with the Chapel Hill astronomical and observational society to build a telescope as a group.



Brian Pohl demonstrating making observations through the telescope.

**12/10/2008 - Interviewed by David Shenkenberg of Photonics Spectra magazine**

Our group's activities were featured in February 2009's issue of Photonics spectra magazine. See the following link for more details:

<http://www.photonics.com/Content/ReadArticle.aspx?ArticleID=36485>

**02/04/2008 - Entrepreneurship talk**

We were visited by Dr. Steve Gebhart and Dr. Scott McCain, both entrepreneurs in the optics industry in the research triangle area and both formerly affiliated with labs at Duke. They described their experience of life after graduate school and what they have learned in their new roles.



Dr. Steve Gebhart and Dr. Scott McCain at the entrepreneurship talk.

**02/23/2008 - Visit by Brookhaven National Labs' Ralph James**

Dr. Ralph James, an SPIE visiting lecturer delivered his talk on "Cadmium Zinc Telluride Radiation Detectors – Past, Present and Future". The talk was attended by close to 30 DOSC members.



Dr. Ralph James delivering his talk in Schiciano auditorium.



DOSC members listening to Dr. Ralph James.

### **03/16/2008 - Visit by JPL's Scott Basinger**

Dr. Scott Basinger of NASA's Jet Propulsion lab was our visiting lecturer sponsored by OSA. He talked about JPL's history of sending optics into space and issues and trends in modeling optical systems. He also talked about correcting for aberrations, either planned or unplanned, once the optics are put into space.



Ashwin introducing Dr. Scott Basinger to members of the audience.



Dr. Scott Basinger talking about the Hubble Space Telescope.



Members of the audience listening to Dr. Basinger.

#### **04/23/2008 - Trip to James E. Shepard IB Middle School**

Ms. Altonia Moore's Core 2 Science class was visited by our group for an outreach visit. The students were given an interactive lesson on light and lasers. They were also treated to many different hands-on experiments. Some of the experiments included constructing optical elements using Jell-O, laser guiding in a water fountain, telescope observations, light scattering from fog, and optical illusions. They also received computer generated holographic elements to observe diffracted patterns around light sources as souvenirs. The students left the session excited and confident about their newly acquired knowledge about light and optics.

#### **04/23/2008 – End of year ice cream social**

We finished the year with another ice cream social to entice students to run for office and to participate in future DOSC activities.

#### **Group projects**

We began working on two group projects and had undergraduate involvement in our group for the first time. We started working on an LCD based projector based on ideas on [www.instructables.com](http://www.instructables.com). We also plan to build the “death ray” experiment from instructables, which is a combination of a Fresnel lens to focus sunlight and then a collimation lens to collimate the beam.



Richard and Roby working on building the LCD projector.

**Other achievements**

We have spent considerable time over the past year updating our website:

[www.dosc.pratt.duke.edu](http://www.dosc.pratt.duke.edu)

Finally, we affiliated our group with the Graduate and Professional Student Council at Duke University so that we could apply for student group funding. We submitted our constitution on April 15, 2009. Over the course of the year, we got \$600 in GSPC funding by submitting funding requests. We got funding for T-shirts for DOSC members (\$400) and for the group projects (\$200).

**Chapter Finances**

Beginning Balance = \$366

We received to major sources of funding this year. First was \$900 from SPIE for the chapter activity grant. This money went toward the funding of our first project, the LCD projector as well as having guest lecturers, the chapter outing to the observatory, and our Fall Welcome Social. We also received money from Duke's Graduate and Professional Student Council (GPSC) which totaled \$600 and fully financed our t-shirts and partially funded our spring project.

End Balance = \$ 444

**Future Activities**

We hope to continue our collaboration with FIP. We also hope to extend our interaction with UNC's Morehead observatory. We plan to make significant progress on our group projects and to conduct more outreach events at local elementary, middle and high schools. We hope to finish both of our group projects over the summer and start a new exciting project in the fall that we hope will be great for outreach events.