DUKE OSA/SPIE CHAPTER REPORT
June
2007

Outgoing Officers

President- Ryan McNabb
Vice-President- Mingtao Zhao
Treasurer- Yuankai (Kenny) Tao
Secretary- Neil Terry
Outreach Coordinator- Ashwin Wagadarikar

Newly Elected Officers (2007-2008)

Position	Name	Email	SPIE #
President	Ashwin Wagadarikar	aaw14@duke.edu	#03098942
Vice President	Neil Terry	neil.terry@duke.edu	#03158804
Treasurer	Ryan McNabb	rpm10@duke.edu	#03158373
Secretary	Yuankai (Kenny) Tao	yt13@duke.edu	#03098540

Current Members (26)

Janelle Bender
Bradley Bower
Amarpreet Chawla
Anjul Davis
Al-hafeez Dhalla
Dan Fu
Robert Graf
Molly Gregas
Hansford Hendargo
Robert Ike
Christina Li
Xiang Li
Priti Madhav
Ryan McNabb
Elizabeth Nelson
Benjamin Pollard
David Sebba
Christina Shafer
Swatee Singh
Jin Wooi Tan
Yuankai Tao
Neil Terry
Ashwin Wagadarikar
Benjamin Wu
Hsiang-Kuo Yuan
Mingtao Zhao

Chapter Activities:

FIP/DOSC Breakfast

The Fitzpatrick Institute of Photonics (FIP) and the Duke OSA/SPIE Chapter (DOSC) have had Friday breakfasts in previous years. In the past couple of semesters though, this has really come into its own, and is now a weekly fixture at Duke. Since mid-fall, DOSC has worked with FIP to bring a weekly Friday breakfast that features a poster illustrating a student's photonics research within Duke. This is a great time as it allows for students and faculty from various departments to interact in an informal environment on a regular basis. Students and faculty from electrical engineering, medical physics, biomedical engineering, physics, and chemistry have all participated either through posters or as attendees. FIP has been instrumental in this endeavor providing support not only by acting as a connection point for various schools and departments within the university but also granting financial resources as well. Funding has been through generous donations by companies such as Hamamatsu, New Focus, and New Port to FIP.

Poster Highlights
10/19/2007
Design and Measurement of Frequency Tunable Metamaterials
Thomas H. Hand, Stephen A. Cummer

2/22/2008
High Quantum Efficiency Single Photon Detection in the Ultraviolet Wavelengths
Kyle S. McKay, Felix Lu, Jungsang Kim, Henry H Hogue

4/25/2008
Extension of Spectral Domain Phase Microscopy to Three-Dimensional Nanoscale Displacement Mapping in Cardiomyocytes
Hansford C. Hendargo, Audrey Ellerbee, Amy Motomura, Joseph A. Izatt

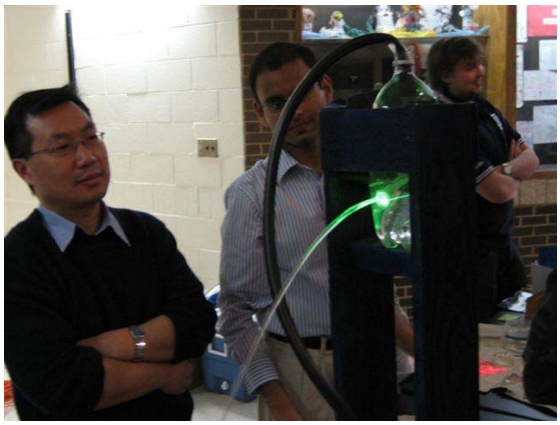
Guest Speaker – Dr. Warren Warren

This spring, we invited Dr. Warren Warren, James B. Duke Professor and Chair in the Department of Chemistry at Duke University to give a talk on his research targeted towards undergraduate and graduate students, faculty members and other interested members of the Duke community. The talk was entitled: "Breasts and brains: similarities and differences: Using novel physics to improve molecular imaging in tissue" and presented ideas on the use of shaped laser pulses and two photon microscopy for in vivo tissue imaging of breast cancer tumors and in vitro imaging of neurons. Pizza was provided by the Fitzpatrick Institute for Photonics for all who

attended the talk.

Outreach Events

The chapter participated in Githens Middle School's Science Fair. The target audience was kids in grades 6-8. We set up several demos for children, parents and teachers to observe and admire as they walked past our tables. The demos included (i) optical illusions that confused many of the kids, (ii) jello optics, where some of the kids were more interested and in eating the jello, (iii) total internal reflection using green and red lasers through a water fountain and (iv) demos with filters in the optics discovery kits. We also used some of the new components that we purchased using the SPIE grant for outreach events that we received last year.



Demonstrating total internal reflection through a water fountain waveguide

Middle schoolers admiring the optical illusions and other demonstrations

Neil demonstrating jello optics

Neil building an laser maze using mirrors

Chapter Finances:

Beginning Balance: $366

Outside Funding: All events this year requiring funding were co-sponsored by FIP allowing for no out of pocket expenses.

End Balance: $366

Future Activities:

Already, plans have been made to continue the FIP/DOSC breakfasts through the summer and into the fall. This has been a very successful event that allows for weekly interaction among faculty and students in various departments as well as highlighting photonics research throughout Duke. Brad Bower continues to be involved nationally with outreach programs and we plan on continuing that tradition. In the fall semester, plans are in place to provide an outlet for a weekly speaker some of which will be hosted by DOSC.