



Chapter Officers

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|------------------|--------------------|
| President: | Michael Ambroselli |
| Vice president: | Tianheng Wang |
| Secretary: | Guangqian Yuan |
| Treasurer: | Adam Markman |
| Event organizer: | Saeid Zanganeh |
| Web master: | Guangqian Yuan |
| Advisor: | Faquir Jain |
| Co-Advisor: | Quing Zhu |

Members (10)

Umar Alqasemi, Fahad Althowibi, Michael Ambroselli, Hai Li, Adam Markman, Yevhen Rutovytsky, Gayathri Srinivasan, Tianheng Wang, Guangqian Yuan, Saeid Zanganeh

2012-2013 Past Activities

June 2, 2012: *Outreach at Massachusetts Middle School Science & Engineering Fair*

Together with Uconn's OSA student chapter, we set up a table with optics demonstrations for middle school students who attended the Massachusetts State Science & Engineering Fair at Worcester Technical High School (Details see Appendix).

Nov. 1, 2012: *Interdepartmental Graduate Student Halloween Party*

We co-sponsored, along with over 7 other math/science/engineering groups and organizations, this year's annual gradstudent halloween party.



Dec. 13, 2012: *SPIE Visiting Lecturer Talk*

Speaker: Yi-Pai Huang (National Chiao-Tung University, Taiwan)

Title: Adaptive Liquid Crystal Lens Array for 3D Display, Interaction, and Capturing

Abstract: A low driving voltage with fast response liquid crystal (LC) lens was developed. By implementing the LC lens as an array structure, it can be adaptively used for 2D/3D switching and 3D rotation on autostereoscopic display. Additionally, by using active TFTs with LC-lens array, it also can be utilized as a depth sensor for 3D capturing. Furthermore, combined with the embedded optical sensors in Display panel, a real 3D interactive/touch system for mobile application could realized.

(Pictures, see Appendix)

2013 Planed Activities

May 14, 2013: *Second Biennial SPIE/OSA Student Conference on Optics and Light*

Jointly hosted by UConn's SPIE and OSA student chapters, with two invited speakers (one sponsored by SPIE's visiting lecturer program, one by OSA), and student research presentations.

SPIE Speaker: Michael Larson, Ph.D. (University of Colorado at Colorado Springs)

(Details, see Appendix)

Financial Statement For Fiscal Year 2012-2013

Income: \$0.00

Expenses:

608 - Refreshments -- Organization 80.00

620 - Refreshments -- Events/Programs 100.00

632 - Prior Year Expenses 155.52

Total Expenses: \$335.52

Net Profit (Loss): (\$335.52)

Beginning Balance as of 07/01/2012: \$ 2,313.03

Current Balance: \$1,977.51



Appendix

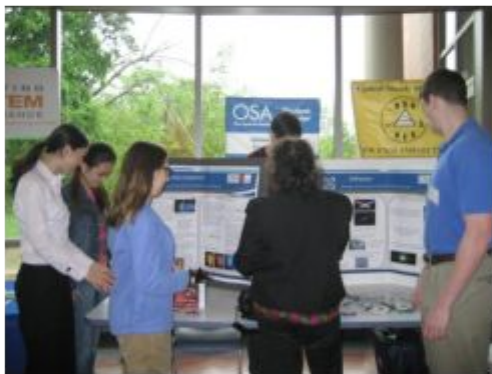
Outreach at Massachusetts Middle School Science & Engineering Fair:

Optics outreach in the Massachusetts Middle School Science & Engineering Fair

By: Xiao Xiao, Behnoosh Tavakoli, and Marianne LaRosa

The University of Connecticut Student Chapter held an optics demonstration at Worcester Technical High School on June 2, 2012. This demonstration was targeted to middle school students who attended the Massachusetts State Science & Engineering Fair. Our group used the Optics Suitcase and a holography kit to display two optical principles, diffraction and 3D holography. We also designed two posters to help explain these principles in detail.

One of the goals of our group was to present experiments that are engaging and interesting for middle school students. After discussing various options, we prepared a diffraction experiment by using the rainbow pinhole theme packages from the Optics Suitcase. To enhance the visual effect, we used a laser pointer to show different projection patterns through the pinhole. We also prepared a 3D holography demonstration by using a LitiHolo hologram kit, which uses a low power laser diode that can safely be used with supervised middle school students. Using several holograms that had previously been recorded using the kit, we illuminated the holograms with the laser diode, a blue LED, and a white LED flashlight. Because the 3D image that is formed can be viewed at different angles and even touched, we believe the hologram kit is an ideal education tool for young people as well as adults that have no optics background.



One of our members explaining the 3D holography demonstration

During the event, many middle school students and their parents came to our table to see what our experiments were about. As they looked through the rainbow pinholes and the illuminated holograms, many questions were asked. The 3D holography demonstration in particular attracted a lot of attention. Observers were often intrigued to see a 3D image that they could poke their finger through. Many observers had never seen this type of holography before and were very interested in learning how it was possible for such an image to be formed.

By holding optics outreach demonstrations, we shared our knowledge and enthusiasm to motivate others to consider learning more about optics. We especially motivate young people by hosting demonstrations that are interesting and engaging. Furthermore, our chapter members gain experience that helps us improve our demonstrations and develop effective ways to share our knowledge. We would like to thank the OSA for supporting this event.



Some of our members



3D holography demonstration

SPIE Visiting Lecturer Talk:





Second Biennial SPIE/OSA Student Conference on Optics and Light

Let there Be

LIGHT

ABOUT THE CONFERENCE

The University of Connecticut Student Chapters of SPIE and OSA present their 2nd biennial student conference on optical engineering and the science of Light. This conference gives students the opportunity to present their research to peers, in a relaxed and friendly setting. All research involving optics or light is welcome!

Cash prizes for best presentation: **\$100** for the winner, **\$50** for the runner-up!

CONFERENCE PROGRAM

Tuesday, May 14 - ITE 336 - 9am - 5pm

- 9:00: Opening Lecture by Dr. Michael Larson
- 10:00: Student Presentation Session I
- 12:00: Lunch
- 13:00: Afternoon Lecture by Dr. Charles Falco
- 14:00: Student Presentation Session II
- 16:30: Best Presentation Awards

SPIE & OSA at UConn

This conference is a joint event of both UConn student chapters, with financial support from both professional societies. To learn more about SPIE, OSA, and the benefits of (student) memberships, feel free to attend this conference, contact the UConn chapters, or visit spie.org and osa.org.

**2nd Biennial SPIE/OSA
Student Conference on Optics
and Light**

May 14, 2013

University of Connecticut

ITE Building, Room 336

371 Fairfield Way; U-4157

Storrs, CT 06269

INVITED SPEAKERS

"Starting and Running Your Own Company:



Michael C. Larson, Ph.D.

an entrepreneurial case study of KHET The Laser Game."

Michael co-founded Innovation Toys, LCC, with two former graduate students. He will discuss the joys of: product design, cash flow, working with foreign vendors, the import/export process, suing, being sued, marketing, etc., to help you decide if you would like to become a captain of industry.

"The Science of Optics; The History of Art:



Charles M. Falco, Ph.D.

Discoveries about Renaissance paintings resulting from a collaboration with the renowned artist David Hockney."

Evidence suggests that some paintings made as early as c1430 were produced using optical instruments to project images of objects illuminated by sunlight onto the canvas. The artist then traced portions of these images.

REGISTRATION INFORMATION

Registration is **free**, but required. If you would like to attend and/or present your research, please sign up at uconn2013.natureoflight.org. Presentation abstracts are due **Tuesday, May 7**. If you have any questions, please contact us at uconnOSA@gmail.com or SPIEUConn@outlook.com.

