

**ANNUAL REPORT**  
**SPIE STUDENT CHAPTER**  
**UNIVERSITY OF HOUSTON**  
**July 2016**

## Member List

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## ➤ **Activities**

### 1) International Year of Light 2015 SPIE Outreach

In order to promote international year of light 2015, our UH chapter reached out to a local school in Houston to demonstrate interesting optics experiments making use of the optics boxes sent by SPIE. Other than the apparatus included in the suitcase, we also prepared several simple optical experiments for the students, such as “Bending of light”, “Optical illusion in oil”, and “Total internal reflection”. Students really enjoyed these optical demos and were excited about all kinds of interesting phenomena they observed from it. The most popular optical experiment among students was “Bending of light”: A small hole was drilled on the bottle, and water stream was let to flow out through the hole; when laser light was illuminated to the hole, the light was “bent” by the water stream. We encouraged students to repeat this simple experiment at home and try to explore the science behind it.



## 2) Guest speaker

In February 2016, we held a seminar at the University of Houston and invited Dr. Valery V. Tuchin to give a lecture about his research. Dr. Tuchin is one of the most top researchers in the biophotonics field and his research mainly focuses on tissue optical clearing.



The lecture topic was “Tissue Optics and Nanomedicine”. In his lecture, he touched upon the fundamentals and advances in tissue optics and tissue optical clearing.



This was one of the most attended seminars last year and had the maximum show up in a long time. People were very interested in the optical clearing effect on tissue imaging. We received a lot of positive feedback from students regarding the seminar. We especially arranged a meeting after the lecture for faculty to see if there is a chance for collaborations between our guest speaker and our university.



### 3) Chevron Girls Engineering the Future Event (Optical Session)

Our UH student chapter cooperated with Chevron company to hold the 1st annual “Girls Engineering the Future!” event at the University of Houston this April. This was a big event and our chapter was mainly responsible for the optical session. Female STEM

(science, technology, engineering and math) enthusiasts between grades 4-8 were invited to participate in this event. Girls participating in the event were taught about the different engineering fields and professions and were given opportunities to communicate with current and former industry leaders.

We prepared different types of experiments to demonstrate basic properties of light and interesting phenomena, such as polarization, refraction, reflection and so on. More advanced optical technique such as Optical Coherence Tomography (OCT) was used to show what the light can do in the biomedical field. During the event, the most active participants had the chance to get their optical fingerprints using OCT. Students who showed up really loved this experience.

We would like to thank Dr. Larin for providing valuable lab resources to successfully hold this event.



➤ **Details of planned activities for future**

- 1) Invite guest speaker for a seminar in 2017;
- 2) Organize poster sessions at an intra-university level to spread news about our chapter and also its activities. This would be a great way to invite more students to our campus and bring attention to STEM research.
- 3) We really hope to re-hold “Girls Engineering the Future Event” next year and make it an annual event. This is a very good chance to promote our SPIE and local chapter to local community and future researchers.
- 4) As a way of bringing attention to the field of optical engineering, we hope to hold “Optical Engineering Day”. Attendees will be briefed about the different research labs in the university working on the different fields of optics. Hands on experience in some parts of research and design will also be given, which is integral to the advancement of the field.



## Financial information

<b>Previous Year Balance: 23</b>			
<b>Received</b>		<b>Spent</b>	
Activity grant	500	International Year of Light 2015 SPIE Outreach	120
		Guest speaker seminar	140
		Chevron Girls Engineering the Future Event	220
<b>Total Current balance: 43</b>			