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UCD SPIE Student Chapter

Elected Officers

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
<th>E-mail</th>
<th>Member No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>President</td>
<td>Laura Tobin</td>
<td><a href="mailto:laura.tobin@ucd.ie">laura.tobin@ucd.ie</a></td>
<td>3246337</td>
</tr>
<tr>
<td>Vice President</td>
<td>Changliang Guo</td>
<td><a href="mailto:changliang.guo@ucdconnect.ie">changliang.guo@ucdconnect.ie</a></td>
<td>3581475</td>
</tr>
<tr>
<td>Treasurer</td>
<td>Ra'ed Malallah</td>
<td><a href="mailto:raed.malallah@ucdconnect.ie">raed.malallah@ucdconnect.ie</a></td>
<td>3644552</td>
</tr>
<tr>
<td>Education Officer</td>
<td>Inbarasan Muniraj</td>
<td><a href="mailto:inbarasan.muniraj@ucdconnect.ie">inbarasan.muniraj@ucdconnect.ie</a></td>
<td>3657961</td>
</tr>
<tr>
<td>Advisor</td>
<td>Prof. John T. Sheridan</td>
<td><a href="mailto:john.sheridan@ucd.ie">john.sheridan@ucd.ie</a></td>
<td></td>
</tr>
</tbody>
</table>

Current Student Chapter Members

Rasoul Al-Majmaie  Sabad-e Gul
Changliang Guo     Shi Liu
Ra'ed Malallah     Ronan McCann
Inbarasan Muniraj  Laura Tobin
Harsha Vardhan Reddy Maraka

Members Update
The UCD SPIE Student Chapter welcomes Mr. Inbarasan Muniraj joined our research group and our SPIE student chapter in December 2014.

The UCD SPIE Student Chapter welcomes Ms. Victoria Bunny from ISEN Lille on her summer internship within our group.

UCD SPIE Student Chapter Grant
The UCD SPIE Student Chapter was awarded an SPIE International Year of Light (IYL) Activity Grant in November 2014. The IYL Activity Grant was in the amount of $1535 (€1200) for “the development of a traveling mobile darkroom to conduct optical experiments at science festivals”. This grant was spent on buying materials for Light & Shadow, InspireFest and Dublin Maker.

11 http://spie.org/x108865.xml
Chapter Activities 2014 - 2015

SPIE Optics & Photonics 2014
Dr. Shi Liu, Ms. Liang Zhao and Ms. Laura Tobin attended and presented their research at Optics & Photonics 2014.

Student Leadership Workshop Group in SPIE Optics & Photonics 2014

Ms. Liang Zhao attended the SPIE Leadership Workshop, and collected her SPIE Education grant in this conference.

Dr. Shi Liu (Right) and Ms. Liang Zhao (Left) in SPIE Optics & Photonics 2014

Ms. Laura Tobin joined the SPIE Education Committee at Optics & Photonics 2014 and subsequently the Grants subcommittee.
Former chair of the Future Leaders Committee, Ms. Anne-Sophie Poulin-Girard started a project to translate the International Year of Light logo into numerous languages (see photo below from IYL Opening Ceremony in UNESCO). At the Student Leadership Workshop, Ms. Laura Tobin collaborated with Ms. Poulin-Girard to translate as many languages as possible.

Ms. Laura Tobin and Ms. Anne-Sophie Poulin-Girard

SPIE Women in Optics Planner

SPIE Student Chapter President Ms. Laura Tobin was selected to have a featured profile in the 2015 SPIE Women in Optics Planner.  

http://spie.org/x111988.xml
SPIE UCD Student Chapter 10\textsuperscript{th} Anniversary

The SPIE UCD Student Chapter was established on the 15\textsuperscript{th} of April 2004 and we celebrated our 10 year anniversary with pizza and cake after the Light and Shadow day. The UCD SPIE Student Chapter received a commemorative plaque from SPIE which hangs outside the Chapter’s Advisor’s office in the Engineering building in University College Dublin.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{studentchapteradvisor_plaque.png}
\caption{Student Chapter Advisor, Prof. John T. Sheridan with SPIE commemorative plaque}
\end{figure}

Women in Engineering – “Engineering Your Future”

SPIE Student Chapter President, Ms. Laura Tobin was an invited speaker at Women in Engineering event, “Engineering your Future” in Dublin Castle on the 8\textsuperscript{th} October 2014\textsuperscript{3}. The Event was hosted by the Engineers Ireland\textsuperscript{4} STEPS team\textsuperscript{5} and was an opportunity for Second and Third Year female students (13 – 14 years), teachers, and parents to meet engineers who are passionate about their careers.

\begin{itemize}
\item \textsuperscript{3} http://www.steps.ie/media/news/women-in-engineering-career-event-preview.aspx
\item \textsuperscript{4} https://www.engineersireland.ie/home.aspx
\item \textsuperscript{5} http://www.steps.ie/
\end{itemize}
Student Chapter President, Ms. Laura Tobin at “Engineering Your Future”

Overview of “Engineering Your Future” presentation
International Year of Light in Ireland

SPIE Student Chapter President, Ms. Laura Tobin joined the national committee in Ireland for the International Year of Light (IYL) and represents the SPIE and OSA Student Chapters in Ireland for IYL. Ms. Tobin has been in contact with the NUIG Student Chapter in Galway to coordinate a collaborative event for IYL between the chapters. The Patron for IYL Ireland is the Irish President, Michael D. Higgins.

International Year of Light Opening Ceremony in UNESCO

SPIE Student Chapter President, Ms. Laura Tobin attended the Opening Ceremony of the launch of the International Year of Light at UNESCO in Paris, 19th – 20th January 2015. Ms. Tobin attended as a representative of the International Year of Light, Irish committee member. Ms. Tobin met with fellow SPIE Student and FLC Committee members, Ms. Anne-Sophie Poulin-Girard (Univ. Laval Chapter) and Ms. Sona Hosseini (Univ. of California, Davis Chapter).

Ms. Laura Tobin, Ms. Anne-Sophie Poulin-Girard and Ms. Sona Hosseini

Ms. Tobin also met with SPIE representatives who were in attendance at the Opening Ceremony; Krisinda Plenkovich (Director, Education and Community Services), Phil Stahl (Past President) and Eugene Arthurs (CEO).

6 http://light2015.ie/about/committee/
Ms. Laura Tobin, Ms. Anne-Sophie Poulin-Girard and Ms. Krisinda Plenkovich (Director, Education and Community Services)

On display in the UNESCO building in Paris were the translated IYL logos that Ms. Anne-Sophie translated with some small help from Ms. Laura Tobin and the FLC committee\(^8\).

\(^8\) [http://www.repol.copl.ulaval.ca/index_en.html](http://www.repol.copl.ulaval.ca/index_en.html)
The launch of the International Year of Light in Ireland took place on Friday 13th of March at the Spire in Dublin city centre which coincided with the kick-off of the 4 day St. Patrick’s Day festival. The Spire (or Monument of Light) is a 121.2 metre high landmark monument located on O’Connell St, right in the heart of Dublin city centre. It was illuminated for the first time by Philips Lighting and the lighting sequence was choreographed to Reel around the Sun from Riverdance. The Spire also streamed a live scrolling twitter feed using the hashtag #lightirl which featured messages from all around the world.
This evening’s proceedings were overseen by Grand Marshal of the 2015 St. Patrick’s Festival Parade, Brendan O’Carroll who pushed the button to illuminate the Spire of Dublin green at 7:15pm. Brendan was joined by Susan Kirby, CEO of St. Patrick’s Festival, Professor Martin Leahy NUIG, and Professor John Sheridan UCD, of the National Committee for IYL in Ireland. Both Prof. Leahy & Prof Sheridan are SPIE fellows. They were joined by the UCD and NUIG Student Chapters.
The light installation and live twitter feed remained in place throughout St. Patrick’s Festival and had a prominent place at the centre location of St. Patrick’s Day parade.
SPIE European Conference on Optics and Optoelectronics
UCD SPIE Student Chapter member Mr. Ra’ed Malallah and Chapter Advisor Prof. John T. Sheridan attended and presented at the SPIE European Conference on Optics & Optoelectronics, April 13th - 16th 2015, Czech Republic.

Mr. Ra’ed Mallah and Prof. Ali H Reshak (University of West Bohemia, Pilsen)

Mr. Ra’ed Mallah, Prof. John T. Sheridan and Prof. Ali H Reshak
Light and Shadow

The UCD SPIE Student Chapter participated in the UCD Science open day, Light and Shadow in celebration of the International Year of Light and the light based research within University College Dublin Saturday 23rd May 2015\(^1\). There were over 500 attendees on the day.

The SPIE UCD Student Chapter

The event was opened with a keynote speaker, Evelyn Cusack, the Deputy Head of Forecasting in Met Éireann\(^2\) on the connection with spectroscopy and the weather. Following the keynote there were 11 shorts talks;

- Light sources for electronics Padraig Dunne
- Imaging Molecules with light James Rice
- Harvesting Solar Energy Dominic Zerulla
- Listening to See in Dark: a Bat’s perspective Emma Teeling
- Light for Eye Diagnostics Brian Vohnsen
- Light, Vision and Health Paul Kenny
- Sunlight, Excited Molecules and DNA Damage: An Incredibly Fast Process Susan Quinn
- Using Vision to find new Drugs for Blindness Breandán Kennedy
- Light from the Edge of Time Lorraine Hanlon


In addition there were also displays, exhibits and tours;

- **Therapeutic Light**
  - The Dark Net

  - **Cellular Light Show**
    - Biology & Environmental Science – Dr Mariana G. Bexiga, Dr Carl Ng, Prof Jeremy C. Simpson
  
  - **Uncover Molecular Structures with Infrared Light**
    - Chemistry and Chemical Biology – Dr Paul Evans
  
  - **The Colour Box**
    - Physics – Prof Padraig Dunne
  
  - **From Rays to Waves in Light & Colour**
    - Physics – Dr Brian Vohnsen
  
  - **Light & the Planet’s most important Organisms – Plants**
    - UCD Program for Experimental Atmospheres and Climates (PEAC)
  
  - **The Chemistry of Light**
    - UCD Chemical Society, a UCD student society
  
  - **Light, colour & flavour – a multisensory experience**
    - Institute of Food & Health – Dr Emma Feeney
  
  - **Light & Nature’s Life Cycle**
    - Engineering – Prof John Sheridan; Agriculture & Food Science – Dr Barbara Murphy
  
  - **Fun with light workshop**
    - Laura Tobin – UCD SPIE/OSA Student Chapter
  
  - **KHET Tournament**
    - Laura Tobin – UCD SPIE/OSA Student Chapter
  
  - **Exploration Dome**
    - Supported by UCD Research Public Engagement & Outreach, and partners
  
  - **Tunnelling Art & Science Exhibition**
    - Organised and curated by UCD – Lorraine Hanlon & UCD/NCAD – Emer O’Boyle; collaborative exhibition by students of Fine Art NCAD and UCD Science
  
  - **Explore the UCD O’Brien Centre for Science**
    - Sponsored by UCD Science, guided by student ambassadors

The SPIE UCD Student Chapter ran 9 tables during Light and Shadow, 4 tables for the KHET tournament and 5 on optics outreach. Both stands were extremely popular and we were able to provide materials for science communicators and educators for their own IYL activities. The outreach optics tables had a mixture of optical equipment (lasers, LEDs, optical fibres, spectrosopes etc…), optical illusions (Mirrorscope, Euler’s Disk, Centripetal Spinner, Strobotop etc…) and hands on making (LED badges, UV bracelets, UV makeup, build your own spectroscope etc…). We also provided a number takeaway materials that we handed out such as; templates for creating your own spectroscope, diffraction gratings (500 & 1000 lines/mm), polarisers, liquid crystals sheets and the very popular diffraction glasses. These glasses are not widely available in Europe and had to be sourced from the US. Our Advisor, Prof. John T. Sheridan gave a talk on “Theraputic Light” and also helped out on the optics outreach stand for the remainder of the day. Volunteers: Ms. Laura Tobin, Ms. Liang, Zhao, Mr. Ra’ed Malallah, Mr. Changliang Guo, Mr. Haoyu Li, Mr. Inbarasan Muniraj, Ms. Victoria Bunny (ISEN Lille), Mr. Sudharsan Rajasekaran (UCD) and Mr. Nithish Deepankar.
Feedback:

· *This event is brilliant!*
· *I thought it was very fascinating and I would love to return next year*
· *Great event – the kids had an excellent time*
· *Fantastic education experience*
· *Very interesting talks!*
· *Good mixture of events and talks. Too much to choose from, almost. (That's a good complaint)*

The SPIE UCD Student Chapter is grateful for the support from three volunteers on the day, Ms. Victoria Bunny (ISEN Lille), Mr. Sudharsan Rajasekaran (UCD) and Mr. Nithish Deepankar (DBS).

The SPIE UCD Student Chapter wishes to acknowledge the support from SPIE for the IYL Activity Grant which allowed us to purchase materials.

The SPIE UCD Student Chapter wishes to thank Ellen Byrne from the Festival of Curiosity\(^{15}\) for gifting the Chapter 10 pots of Bare Conductive paint\(^{16}\) for Light and Shadow.

We would also like to acknowledge the support from Karen McCarthy and the Tyndall Institute, Cork in providing us with an EU Photonics Explorer kit that we used on the day.

\(^{15}\) [http://festivalofcuriosity.ie/](http://festivalofcuriosity.ie/)

\(^{16}\) [http://www.bareconductive.com/](http://www.bareconductive.com/)
Upcoming Events

Following our success at Light and Shadow, Ms. Laura Tobin has been approached to provide an outreach stand at two upcoming events.

**InspireFest**

Inspirefest 2015 is a two day international event that connects professionals interested in the future of science, technology, engineering, and mathematics with new perspectives on innovation, leadership and success. Plus unique networking at our exciting Fringe Festival taking place from 18th -20th June17.

SPIE UCD Student Chapter President Ms. Laura Tobin has coordinated an optics stand, Light2015 for the InspireFest Fringe Festival18. There will be hands on activities that showcase optics and photonics and will have volunteers from the SPIE UCD Student Chapter. It is expected that there will be high numbers in attendance at this fringe festival in Merrion Square in Dublin city centre.

**DublinMaker**

Dublin Maker will be held on July 25th, 2015 in a tented festival space on the grounds of Trinity College Dublin. It is a free to attend, family friendly and community driven event. Dublin Maker takes the form of a “show and tell” experience where inventors/makers sourced through an open call, will have an opportunity to showcase their creations at individual booths in a carnival atmosphere. It’s a place where people show what they are making, and share what they are learning. Ms. Tobin is a co-organiser of Dublin Maker following her Student Chapter outreach stand three years ago. Last year, Dublin Maker had over 8,500 visitors and is expected to grow this year.

SPIE UCD Student Chapter President Ms. Laura Tobin has coordinated an optics stand, Light2015 for Dublin Maker 2015. Ms. Tobin has collaborated with the NUIG Student Chapter and they will travel from Galway to share this space and promote to light, optics, photonics and IYL together.

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Financial Report

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<th>Date</th>
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<td>Opening Balance</td>
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<td>11th NOV 2014</td>
<td>SPIE (10 year anniversary $200)</td>
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<td>2nd DEC 2014</td>
<td>SPIE Activity Grant ($1535)</td>
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<td>30th DEC 2014</td>
<td>Bank Fees (quarterly)</td>
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<td>13th MAR 2015</td>
<td>IYL Ireland Launch (tea &amp; coffees)</td>
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<td>28th APR 2015</td>
<td>IYL Outreach Materials (Light &amp; Shadow)</td>
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</tbody>
</table>

Financial Notes:

Any items bought outside of Europe and imported into Ireland is subjected to a 23% VAT rate and a 6.5% import duty rate which is calculated on the cost of the items plus shipping.

As 2015 has been declared the International Year of Light, the SPIE UCD Student Chapter decided to purchase large quantities of materials to sustain outreach activities throughout 2015. The three large events planned (Light and Shadow, InspireFest and Dublin Maker) will have large attendance rates from members of the public. Unfortunately it was found (after exhaustive efforts) that the cheapest suppliers for many of the materials came from outside of Europe and this incurred extra costs due to VAT and import duty. Therefore it was decided to split the types of purchases - purchase materials that can be reused and disposable materials such as giveaways. The disposable materials were mainly materials that were used on hands on activities such as create your own LED badge or design a UV bracelet. The giveaways were the Rainbow Symphony diffraction glasses\(^\text{19}\) which we bought in bulk (1500) to avail of the cheaper price. These glasses were/will be handed out to members of the public during Light and Shadow, InspireFest and Dublin Maker. Diffraction Glasses are not common in Ireland and they are impossible to purchase in Europe, despite an exhaustive search. These glasses were also handed out to science communicators, educators and teachers to help them teach and promote the International Year of Light. We received a number of thank you e-mails and tweets for providing materials\(^\text{20}\).

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\(^{19}\) [http://www.rainbowsymphonystore.com/digrgl.html](http://www.rainbowsymphonystore.com/digrgl.html)

\(^{20}\) [https://twitter.com/skysketcher/status/604246387245596672](https://twitter.com/skysketcher/status/604246387245596672)
Acknowledgements

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