

ANNUAL REPORT

CCNY CITY LIGHTS SPIE CHAPTER



Elected officers for school year 2013-2014

President: Ada-Simona Popescu ada.simona.popescu@gmail.com 3525043

Vice-president: Abdou Diba adiba00@citymail.cuny.edu 3579096

Treasurer: Simeon Bikorimana blionceau@gmail.com 3579036

Secretary: Tamelia Ali ali.tamelia@gmail.com 3572534

Elected officers for school year 2014-2015

President: Abdou Diba adiba00@citymail.cuny.edu 3579096

Vice-president: Robert Foster rfoster01@citymail.cuny.edu 3537362

Treasurer: Carlos Carrizo athelus2004@yahoo.com 3439744

Secretary: Derek Kosciolk derekkosciolk@gmail.com 3629477

Current chapter members

Kaveh Bastani

Simeon Bikorimana

Adrian Diaz

Abdou Diba

Robert Foster

Ishmael Garraway

Zabir Hossain

Farzaneh Hoveyda

Young Uk Jung

Derek Kosciolk

Ada-Simona Popescu

Richard Sam

Lingyan Shi

Laura Sordillo

Alex Vlachokostas

Note: a number of members have to renew their memberships. Since that is usually done when student attend a conference, some have neglected to renew.

CITY LIGHTS is a graduate organization whose mission is to bring together students and professors to create a cohesive and strong optics and photonics community. We aim to educate students on topics related to optics and photonics, enrich their knowledge and professional skills.

Activity

Science talks

Location: City College, Steinman Hall, EE Department

Purpose: All members will present their research work or other interesting subjects which are photonics and optics related. The target for the frequency of presentations per student is once every two months.

Benefits: Give students the opportunity to enhance their public speaking skills and refine their technical language by practicing in a professional medium of peers. Talks and presentations will be limited to 15-20 min, which is the usual amount of time reserved for a conference presentation. The presentation will be followed by a Q&A session and also constructive critique and suggestions.

Ever since the club started, we have been organizing science talks, held by graduate students. We also invite students from other universities. Towards the end of last we stopped having these meetings with the same frequency as during the past semesters, due to other projects we become involved with, projects concerning the International Year of Light.

A complete list of the talks presented can be found on our website, at

<https://sites.google.com/site/citylightsspiechapter/creative-staffing-models/science-talks>.

Students enjoy these meeting especially because they get to discuss their work and understand better the work of their peers. All the discussion take place in a relaxed, friendly atmosphere. Student often used this opportunity to simply practice for talks they were to give at conferences, which was very useful as well.

Visiting Lecturer

We invited Prof. Douglas Petkie, Prof. of Physics and Electrical Engineering at the Wright State University in Ohio to talk to us about his research in the Terahertz field. His talk in fact was composed of two subjects: “Millimeter wave and Submillimeter-wave molecular Spectroscopy” and “Millimeter wave and terahertz radar”.

The event took place on May 7th 2014 in Steinman Hall, on campus of City College of New York.



Prof. Douglas Petkie holding a “Terahertz Science” presentation at CCNY

More photos from the event can be found at

<https://sites.google.com/site/citylightsspiechapter/creative-staffing-models/past-events/terahertz-science>.

Field trips

Purpose: Visit the facilities, connect with peer scientists.

Benefits: Students can observe the facilities of this company, ask questions and inquire about internships.

One of the favorite events this past year was the Brookhaven National Laboratories, on June 2nd, 2014. A group of approximately 15 students visit the BNL facilities: Interdisciplinary Science Bldg, The Center for Functional Nanomaterials (CFN), The National Synchrotron Light Source (NSLS), The Accelerator Test Facility (ATF), The PHENIX Detector at the Relativistic Heavy Ion Collider (RHIC). Scientist welcomed us at each facility and gave us tours of their labs, presented their projects, and answered a lot of questions.



Students at the PHENIX Detector at the Relativistic Heavy Ion Collider (RHIC) together with Chris Pinkenburg, the scientist who showed us around and told us beautiful science stories.

More photos from the event can be found at:

<https://sites.google.com/site/citylightsspiechapter/creative-staffing-models/past-events/field-trip-at-brookhaven-national-laboratories>.

An article was written about this trip, which will be published in the school's magazine.

International Year of Light Activities

I. Educational Outreach - Light Switch Project

The club recently was awarded an Educational Outreach grant by the SPIE organization. The club will organize K-12 student field trips to City College of New York and Optics/Engineering demonstration as well as lab visit.

This event is a collaboration with the CUNY Center for Advanced Technology



Group of visiting middle school students, Camille Santistevan and Ishmael Garraway

Update prepared by Derek Kosciolk, Club Secretary

The stated objective of Project Light Switch is demystify light and light-based technologies for secondary school students. From answers to qualitative questions like “Why is the sky blue?” to quantitative demonstrations on the Law of Reflection, students gain a deeper understanding of the nature of light. It also provides an opportunity for students to visit a higher education institution and interact with undergraduate and graduate students, many of whom are researchers. This may be an equally valuable experience as they begin to consider attending college themselves, and ponder future careers.

This year the CCNY City Lights SPIE Chapter is hosting the Young Women’s Leadership School of the Bronx (<http://schools.nyc.gov/SchoolPortals/09/X568/default.htm>). We have already had two visits (1/9/2015 and 2/6/2015) and more are scheduled. The visit begins with a group lunch, which we provide. One volunteer activity leader (undergraduate or graduate student enrolled at CCNY) sits at each lunch table to make introductions and break the ice. After lunch, the students sit for a 10-minute presentation where the basics of light are addressed. The concept

of the electromagnetic spectrum, along with vocabulary such as “wavelength” and “frequency” are introduced.

Then the students are split into small groups and take a turn at different activities. Some of the the activities we have used are:

Hit the Target – Students learn the law of reflection and steer a laser beam with mirrors to a variety of targets. The laser and target are fixed, and the students must position the mirrors with the laser off using protractors and string, and of course the law of reflection.

Gummy Bears and Lasers – The concepts of transmission, absorption, and reflection with regards to energy are introduced by shining light of different colors on gummy bears of different colors. Students note what happens to the incident light for all the different pairings and make inferences on their observations.

Optical Engineering – Students steer laser light with lenses to understand how certain vision problems are solved. Light “bending” via refraction is introduced and discussed.

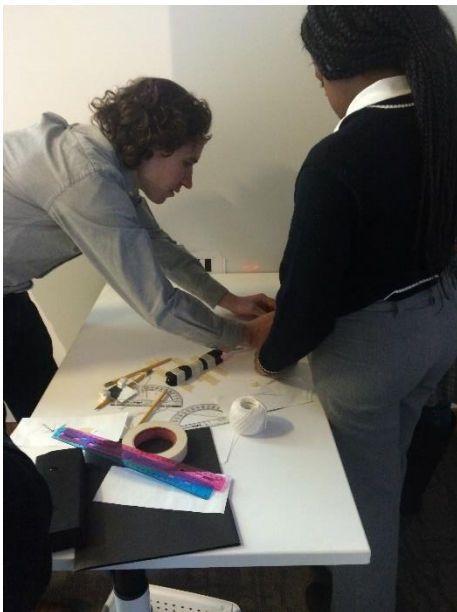
Energy and Light – Light is demonstrated to contain energy through a fluorescence activity with spinach.

After completing the activities we all get back together and share what we’ve learned. We also supply a Project Light Switch key chain LED light and an SPIE “Women in Optics” year planner to each student.

The budget to this point is listed below:

9/2/2014	Initial transfer	4000
9/2/2014	Wire transfer fee	-15
9/8/2014	Light & Laser Education Outreach Kit	-312.44
9/19/2014	Ethanol	-17.48
9/19/2014	Wax paper, mortar & pestle, gummies	-32.68
10/31/2014	Flashlights	-662.5
11/7/2014	Masking tape	-4.94
11/7/2014	Protractor, batteries, black light, digital camera, case, folders, rulers, string, photo disk, pencils, baskets	-158.85
11/17/2014	Gelatin, rainbow glasses, screwdriver	-37.32
1/6/2015	Markers, black light, name badges, UV beads, cookie cutters	-39.8
1/9/2015	Luncheon 1	-437
1/9/2015	Spinach & tangerines	-7
2/6/2015	Luncheon 2	-263.5

Anticipated	Luncheon 3	
BALANCE	BALANCE	2011.49
	Spent to date	- 1988.51



Derek and Ishmael demonstrating optics principles to students.

More pictures will be soon available on the website, as soon as we will update the website. A page was created <https://sites.google.com/site/citylightsspiechapter/education-outreach>. However, we are waiting for permission from the school to post pictures from the events.

II. Collaborative Design Projects

Project 1: Fly's Eye 3D Screen Optimization

Brief Update

Student Ishmael Garraway worked with M. Henry Jones and his team to optimize the Fly's Eye 3D lens array screen using Zemax optical modeling software.

A through progress report will be provided for this project separately. The overall outcome is very good, both the artist and the student were very happy with the results. A workshop/showcase will be organized to present the work done.

We show here only a few pictures taken during the project.



Ishmael Garraway and artist M Henry working on the project. Photo credit: Raymond Bishir.

Project 2: Motion responsive LED Wearable Vests

Brief Update

Initial proposal: A team of 24 students will work with West Harlem Art Fund Curator, Savona BaileyMcClain and interdisciplinary artist Lady K Fever (Kathleena Howie) to create eight LED vests to be worn by dancers during the 2015 West Harlem Art Fund Festival of Lights, an annual public art intervention at the West Harlem Piers.

A through progress report will be provided for this project separately. The club asked SPIE permission to cease this collaboration and reassign the funds (\$450). Very little progress has been made, due to miscommunication between the parts. SPIE coordinator Pascale Barnett approved the request and the funds will be reallocated. We will use the funds for a collaboration project with a club on campus which involved Optics games and activities. This event is meant to bring more awareness about the International Year of Light. Details will be offered online and in the future report.

III. Collaboration with CultureHub & Seoul Institute of the Arts in the Republic of Korea

Initial proposal

The SPIE IYL Activity Grant will be used for an outdoor, large scale, public projection mapping project created by CultureHub in collaboration with the Seoul Institute of the Arts in the Republic of Korea. Projection mapping offers a highly visible, accessible art experience that expands the SPIE CCNY City Lights Chapter's mission to include promotion and involvement with art and technology projects in NYC and to cultivate the chapter's international outreach. The funds will go towards supplies, tools, design and audio/visual fees needed for this unique and international collaborative art and technology project.

No updates are available yet on this project.

Planned Activities

- Invite a Professor lecturer from the Visiting lecturer list offered by SPIE
- Field trips: these were already announced. We will probably collaborate with other clubs as well.
 - PNC Printed circuit boards manufacturer - in New Jersey
Students manifested interest in seeing first hand the PCB fabrication process. This will be a short trip, probably half a day.
Time: Sometime in March, most probably during spring break.
 - Composite Prototyping Center
This will be a longer trip, one day.
Time: very end of semester, right after exams. but before June 1st.
- Continue the Science Talks
- Continue Light Switch project
- Science on the Hill: graduate students community building event. This event will be hosted by the 3 clubs on campus, SPIE and 2 other clubs. It will take place in a restaurant very close to campus, "Grill on the Hill". Associate Dean of Graduate Studies for Engineering, Ardie Walser, accepted the invitation to open the series as a speaker for this event. The event will be a happy hour, where the organizers will have speakers or/and organize social games.

Expected expenses: Appetizers ~\$200

Inspiration: similar events in the city, for example "Astronomy on Tap".

Expected date of first event: 4/20/15

Budget

The club has been receiving funds every year from the college as well. The club has been focused on spending those funds before spending SPIE funds. If a club doesn't spend the amount of money that was awarded, than the following year the club will be awarded less money. This year our club did not apply for SPIE funds because we didn't spend yet all the funds awarded the last year.

Funding 1 1Dec 2013 – The club finished all paperwork to officially become a club on campus and was granted a funding of \$2,500 by CCNY.

\$1,600 – The club awarded 3 students in the club \$500 each to travel to the Baltimore DSS conference in Spring 2014. This decision was made based on the fact that the club was very new, therefore not ready for major event and wanted to invest the money in a good purpose. An email was send to the whole club and the 3 students awarded the funding were chosen based on the timing of their Ph. They were all level 3 PhD students, therefore needed a lot of exposure to conferences and job expos. Furthermore, they were the only ones really interested in this opportunity.

\$200 - Terahertz Science presentation – covered partially the food costs for the event.

\$500 - Brookhaven Nation Labs Field trip

Remaining balance : 0.

Funding 2 Jan 2014 – The club was approved by SPIE as a chapter. Soon after that, it was granted a funding of \$900.

- Brookhaven Nation Labs Field trip - \$100

For this trip we used mostly funds from the college to which we added money from our SPIE funds. The expenses consisted in : renting cars, gas money, memories for our hosts at BNL.

- Terahertz Science presentation - \$100

The food costs for this event were approximately \$300. We used both funds from the school and SPIE funds.

- Science Talks - \$100

Sometimes we offer pizza at our Science Talks events. Approximately \$100 were spend for this purpose.

Remaining balance: \$600.

Funding 3 November 2015 –The club was granted 2,500 by CCNY.

\$150 – Christmas party

\$100 – Visiting Princeton University graduate student Pierre Bouzi – talk on “Quantum Cascade Laser”

\$100 – Supported the TEDxCUNY Screening event on CCNY campus

\$100 – Sponsored 2 women in the club to go to the “Grace Hopper Celebration of Women in Computing (GHC)” in New York City. (\$50 each for registration)

Remaining balance: ~ \$2,000.

Funding 4 Separately funded projects:

- Project Light Switch – outreach project
- International Year of Light Projects

Budget reports for these projects will be offered separately.

SPIE Separate Funding

SPIE funded one the events “Terahertz Science” as part of the Visitor Lecturer program and also the a travel grant was offered to former vice president and present president, Abdou Diba.