

CCNY CITY LIGHTS SPIE CHAPTER

ANNUAL REPORT March 2018 - March 2019

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, and enrich their knowledge and professional skills.



Figure 1: Promoting optics, photonics and engineering to K-12 students. CCNY City lights SPIE chapter, May 31st, 2018.

ELECTED OFFICERS:

Elected officers for school year 2017-2018:

	Name	Email:	SPIE ID #:
President	Ahmed El-Habashi	aelhaba00@citymail.cuny.edu	3510713
Vice-president	Adrian Diaz	adiaz001@citymail.cuny.edu	3583592
Treasurer	Eder Herrera	edr_x@hotmail.com	4056675
Secretary	Claudia Duran	cdurang000@citymail.cuny.edu	4084755

CURRENT STUDENT CHAPTER MEMBERS:

Name	Email:
Ahmed El-Habashi	aelhaba00@citymail.cuny.edu
Adrian Diaz	adiaz001@citymail.cuny.edu
Carlos Carrizo	athelus2004@yahoo.com
Claudia Duran	cdurang000@citymail.cuny.edu
Eder Herrera	edr_x@hotmail.com
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ACTIVITIES:

Promote optics/photonics to pre-university students

March 23th, 2018

Location: City College, Steinman Hall, EE Department

Purpose: Promoting optics/photonics to pre-university students.

On March 23rd around 40 visiting students from different high schools in New York metro area participated on a program called "Bridge to College" sponsored and co-hosted by The Grove School of Engineering at The City College of New York, NOAA CREST Institute and CCNY City Lights SPIE Chapter. The students were first introduced to the different STEM disciplines which they are likely to encounter as they pursue higher education at the City College of New York during undergraduate studies. Later on the day, students were introduced to concepts including the electromagnetic spectrum and the nature of light by members of the City Lights SPIE Chapter. During this workshop, the students were exposed to the use of active and passive optical instrumentations to study atmosphere and ocean compositions. Light Detection and Ranging system (LIDAR) system and hyperspectral optical sensors were shown and described to the students. The optical signal acquired from these instrumentations is used to derive useful information about the ocean and atmosphere composition. Some light's phenomena were also explained to the students such as scattering, reflection, refraction and polarization of light. The students were introduced to the research and career opportunities at the field of remote sensing, optics and photonics offered by The City College of New York and the different research institutions working within it.



Figure 2: CCNY City Lights SPIE chapter promoting optics/photonics to 40 pre-university students from different NY high schools.

Promote optics/photonics to pre-university students

April 26th, 2018

Location: City College, Steinman Hall, EE Department

Purpose: Promoting optics/photonics to pre-university students.



On April 26th around 53 visiting students from different high schools in New York metro area participated on a program called “NOAA CREST DAY” sponsored and co-hosted by The Grove School of Engineering at The City College of New York, NOAA CREST Institute and CCNY City Lights SPIE Chapter. The students were first introduced to the different STEM disciplines which they are likely to encounter as they pursue higher education at the City College of New York during undergraduate studies. This program is one of the major recruitment and outreach events of each year that welcomes potentially graduating high school seniors to learn about NOAA, NOAA-CREST and different internships and research training opportunities. NOAA-CREST Day engages high school students in hands-on learning through NOAA-related activities. It's also a day to share with the community. Students interested in STEM fields are also encouraged to participate in summer internships and fellowships throughout the year offered by this research institute. Later on the day, students were offered a lab tour where members of the City Lights SPIE Chapter introduced them to concepts including the electromagnetic spectrum, the nature of light, and instruments used to measure light and quantify and/or described its properties. During this tour, the students were exposed to the use of active and passive optical instrumentations to study atmosphere and ocean compositions. Light Detection and Ranging system (LIDAR) system and hyperspectral optical sensors were shown and described to the students. The optical

signal acquired from these instrumentations is used to derive useful information about the ocean and atmosphere composition. Some light's phenomena were also explained to the students such as scattering, reflection, refraction and polarization of light. The students were introduced to the research and career opportunities at the field of remote sensing, optics and photonics offered by The City College of New York and the different research institutions working within it.



Figure 4: CCNY City Lights SPIE chapter promoting optics/photonics to pre-university students from different NY high schools during NOAA CREST day.

CCNY City Lights SPIE recruiting Event

May 31st, 2018

Location: City College, Steinman Hall, EE Department.

Purpose: Learning optics principles with elementary school students.

On May 31st, 11 elementary school students and their parents from Shakespeare elementary school in South Bronx were invited to celebrate the International Day of Light (IDL). This event was to increase the students' awareness of the nature of light and its properties using an Egyptian-themed game (KHET). First, students were introduced to the most fundamental concepts of light and its properties, including light propagation in different media and laser safety, interaction with matter and processes such as reflection, scattering, refraction, absorption and transmission of light beam through different materials. The game combines lasers with classic strategy. Players alternate turns moving pieces (pharaoh, Anubis, pyramid and scarab). Each turn ends by firing the real laser diode built into each player's sphinx piece. After playing for a while, students were introduced to the different instruments used by scientists to

measure light in different aspects of remote sensing and therefore take care of the Earth and its ecosystems, monitor oceans, predict weather events and monitor climate change. Finally, students were exposed to the concepts of infra-red thermal radiation and conducted an outdoor experiment consisting of measurements of surface temperatures from different surfaces using a laser-emitting heat gun.



Figure 3: CCNY city light SPIE chapter promoting and recruiting new SPIE members.

Optics + Photonics 2018: San Diego

August, 2018

Location: San Diego Convention Center

Purpose: Exhibit SPIE City Lights training and outreach activities during the past years.

On August 2018, student from all around the world were presenting their work and activities as members of the different SPIE Student Chapters. SPIE City Lights participated in this big effort to show the world all we have accomplished in research and outreach. This exhibition allows current and prospective students to learn more about the kind of activities carried out at the different SPIE chapters and encourage them to create their own chapter when it is not available at their academic institutions.

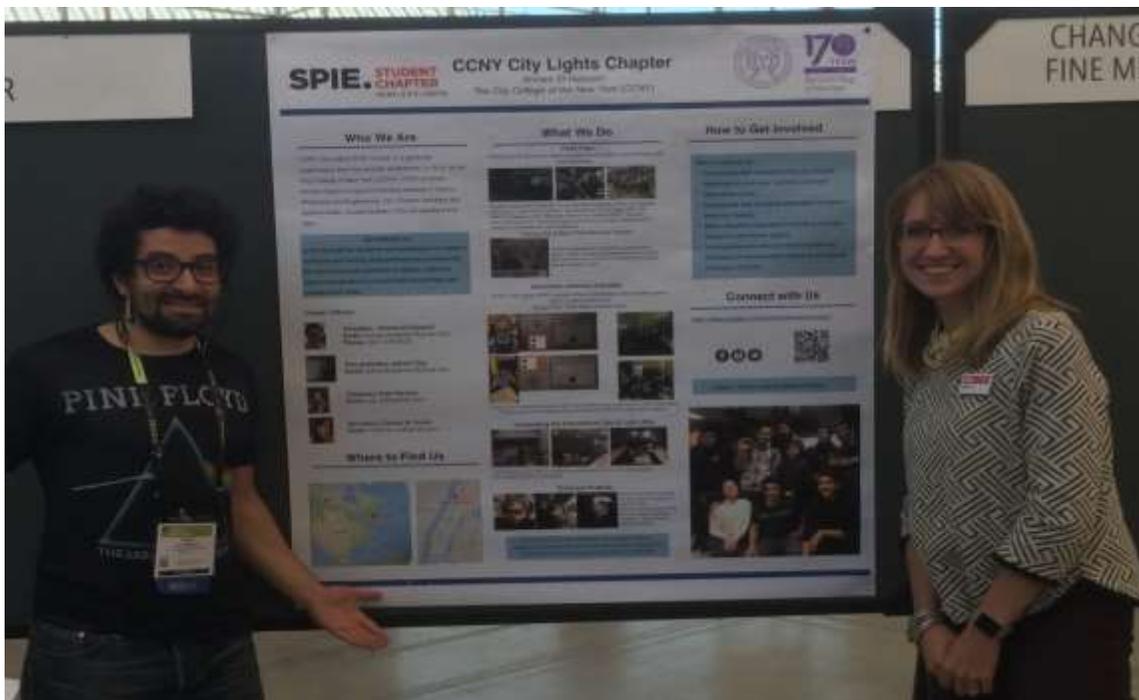


Figure 5: Exhibition of some of SPIE City Lights activities during the past years.

FINANCIAL INFORMATION

A spreadsheet showing beginning and ending balances for the period April 2018 to March 2019 are included at the end of this report in the section **APPENDIX**. For the period of this present report SPIE City Lights Club did not received any funds from the school's Office of Club Relations.

Funding sources:

- Previously acquired funds were spent as follows for the period of concern:

Amount	Event	Description	CCNY funds	SPIE funds
\$50.00	Outreach event: "Total Solar Eclipse" – March 23 rd 2018	Appetizers, drinks, prizes	0	\$50.00
\$0.00	Outreach event: "CREST DAY" – April 26 th 2018	Co-hosted	0	\$0
\$0	Outreach event: "Promote optics/photonics to elementary school students" – May 31 st 2018	Co-hosted	0	\$0

The ending balance of 2019 is \$578.95. This balance may not reflect current activities being funded during the beginning of the Spring Semester (January-March 2019).

Planned future activities

The chapter is planning to organize a field trip with City College students to one of the National Research Laboratories, location not decided yet. In addition to that, our chapter is planning to continue the celebration of the International Year of Light by scheduling two outreach events for this upcoming year:

