

UCR SPIE Student Chapter Annual Report 2016-2017

1) Names and email addresses of elected officers

President: Thompson Lu (tlu011@ucr.edu)

Vice President: Joshua Burns (joshua.burns@email.ucr.edu)

Secretary: Erick Membreno (ememb001@ucr.edu)

Treasurer: Minerva Uribe-Robles (murib002@ucr.edu)

2) List of current student chapter members and membership expiration dates

Members

Crysthal Alvarez	7 January 2019
Ece Aytan	29 August 2018
Joshua Burns	7 June 2018
Nami Davoodzadeh	3 October 2018
Thompson Lu	6 September 2018
Jenny Mac	6 March 2019
Dante O'Hara	15 June 2018
Jack Tang	16 December 2018
Minerva Uribe-Robles	20 February 2019
Erick Membreno	1 May 2019

3) Details of Chapter Activities (June 2017 - May 2018)

Professional Development:

Interview Skills Workshop (Oct 2017)

We hosted an interview skills workshop presented by the UCR Career Center!



Field Trips:

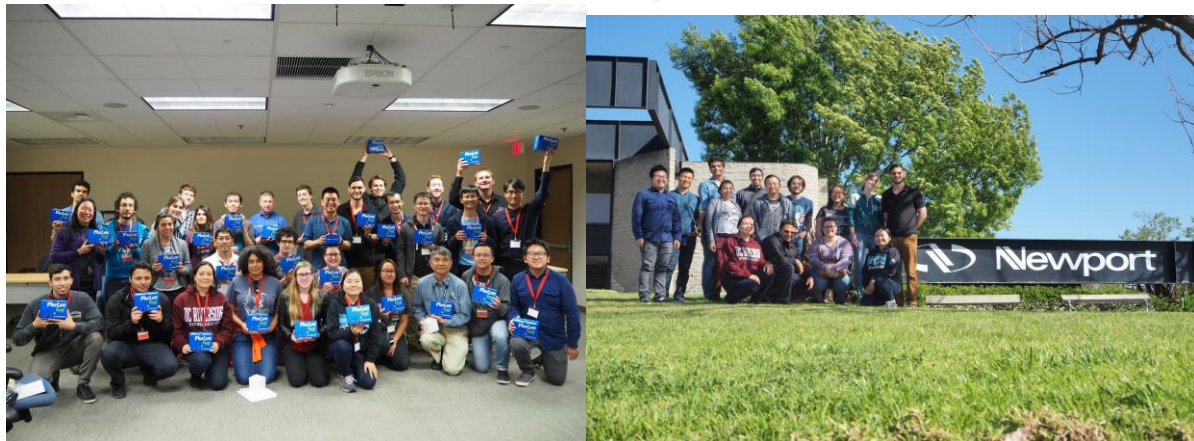
Field Trip to Murillo Family Observatory (Nov. 2017)

We attended visitor nights at the Murillo Family Observatory, which provides tours of the facility and telescopes for viewing the night sky.



Field Trip to Newport Corporation (April 2018)

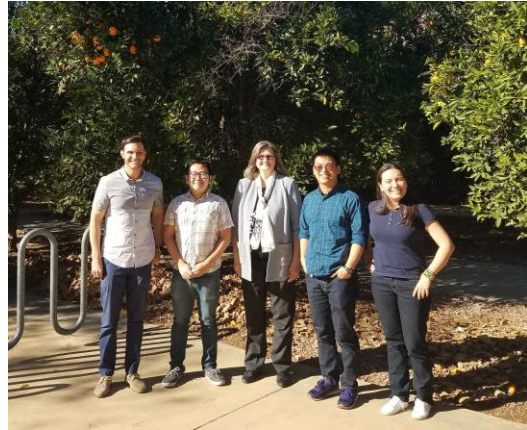
We organized several Southern California SPIE Student Chapters together (UCLA, USC, Irvine Valley College) for a tour of the Newport Corp manufacturing facilities. We got to see the machines and process for creating optical tables, lenses, coatings, and mounts, and learned more about the day-to-day operations at Newport. The event was a great success!



Guest Lecturers:

Dr. Maryellen L. Giger (January 2018)

SPIE President Maryellen Giger visited our campus to present her recent research and meet with SPIE student board members.



Dr. Jean-luc Doumont - "Getting the Message Across" (April 2018)

Jean-luc Doumont came to our campus to give a lecture on how to effectively communicate data. We had a huge turn out from graduate students across many departments at UCR.



5) Expenses 2017-2018

Food and drink for Interview Skills Workshop: \$100.00

Transportation for Murillo Family Observatory: \$60.00

Food and drink for Dr. Jean-luc Doumont Lecture - "Getting the message across": \$300

Transportation for Newport Corporation Field Trip: \$60.00

Transportation and supplies for outreach at King High School: \$100.00

We hosted field trips to Newport Corporation and Murillo Family Observatory instead of the proposed field trips in the funding request (Jet Propulsion Laboratory and Griffith Observatory). We still plan to visit King High School for outreach during the end of May and are in the process of assembling our weather balloon.

6) Projected Costs for 2018-2019

Transportation for Jet Propulsion Laboratory Field Trip: \$60.00

Transportation for Griffith Observatory: \$60.00

Senior Design Project Funding: \$200.00

Parts for assembling weather balloon camera and spectrometer: \$180.00

7) Planned Activities for 2018

Project: Weather balloon camera and spectrometer (June 2018)

Field Trip: Jet Propulsion Laboratory (November 2018)

Field Trip: Griffith Observatory (January 2019)

Guest speaker: TBD

Outreach: King High School (May 2019)

8) List of photonics-related publications by chapter members

A. Geremew , M. A. Bloodgood, **E. Aytan**, B. W. K. Woo, S. R. Corber, G. Liu , K. Bozhilov, T. T. Salguero, S. Romyantsev, M. P. Rao and A. A. Balandin. "Carrying Capacity of Quasi-1D ZrTe₃ Van Der Waals Nanoribbons," *IEEE Electronic Device Letters*, 39:5, 2018.

M. A. Bloodgood, P. Wei, **E. Aytan**, K. N. Bozhilov, A. A. Balandin, and T. T. Salguero. "Monoclinic structures of niobium trisulfide," *APL Materials*, 6, 026602, 2018.

E. Aytan, B. Debnath, F. Kargar, Y. Barlas, M. M. Lacerda, J. X. Li, R. K. Lake, J. Shi and A. A. Balandin. "Spin-phonon coupling in antiferromagnetic nickel oxide," *Appl. Phys. Lett.*, 111, 252402, 2017.

R. Ionescu, B. Campbell, R. Wu, **E. Aytan**, A. Patalano, I. Ruiz, S. W. Howell, A. E. McDonald, T. E. Beechem, K. A. Mkhoyan, M. Ozkan and C. S. Ozkan. "Chelant Enhanced Solution Processing for Wafer Scale Synthesis of Transition Metal Dichalcogenide Thin Films." *Scientific Reports*, 7, 6419, 2017

R. Vankayala, S. R. Corber, **J. T. Mac**, M. P. Rao, M. Shafie, and B. Anvari "Erythrocyte-derived nanoparticles as a theranostic agent for near infrared fluorescence imaging and thrombolysis of blood clots." *Macromolecular Bioscience*, 1700379, 2018.

D. J. O'Hara, T. Zhu, A. H. Trout, A. S. Ahmed, Y. K. Luo, C. H. Lee, M. Brenner, D. McComb, S. Rajan, R. Kawakami, "Intrinsic ferromagnetism in epitaxial MnSe₂ van der Waals monolayers at room temperature," *Bulletin of the ACS*, 2018.

D. J. O'Hara, T. Zhu, A. H. Trout, A. S. Ahmed, Y. K. Luo, C. H. Lee, M. R. Brenner, S. Rajan, J. A. Gupta, D. W. McComb, R. K. Kawakami, "Room temperature intrinsic ferromagnetism in epitaxial manganese selenide films in the monolayer limit", *Nano Lett.*, 2018.

C. H. Lee, S. Krishnamoorthy, P. K. Paul, **D. J. O'Hara**, M. R. Brenner, R. Kawakami, A. R. Arehart, S. Rajan, "Large-area SnSe₂/GaN heterojunction diodes grown by molecular beam epitaxy." *Appl. Phys. Lett.*, 111, 202101, 2017.

W. Amamou, I. V. Pinchuk, A. H. Trout, R. E. A. Williams, N. Antolin, A. Goad, **D. J. O'Hara**, A. S. Ahmed, W. Windl, D. W. McComb, R. K. Kawakami, "Magnetic proximity effect in Pt/CoFe₂O₄ bilayers" *Phys. Rev. Mater.* 2(1), 011401, 2018.

9) Conference proceedings

N. Zamora-Romero, V. Robles, **C. Alvarez**, N. Cuando-Espitia, L. F. Devia-Cruz, E. Penilla, D. L. Halaney, and G. Aguilar. "Laser-excited gold nanoparticles for treatment of cancer cells in vitro," Proc. SPIE 10417, Medical Laser Applications and Laser-Tissue Interactions VIII, 1041707, 2017

Y. Y. L. Palacios, **C. Alvarez**, N. Cuando-Espitia, D. L. Halaney, S. Camacho-Lopez, G. Aguilar. "Femtosecond laser assisted antibacterial activity of ZnO nanoparticles," Proc. SPIE 10417, Medical Laser Applications and Laser-Tissue Interactions VIII, 104170J, 2017.

J. M. Burns, E. Schaefer and B. Anvari, "Near infrared spatial frequency domain fluorescence imaging of tumor phantoms containing erythrocyte-derived optical nanoplatfoms", Proc. SPIE 10506, Nanoscale Imaging, Sensing, and Actuation for Biomedical Applications XV, 105060B, 2018.

N. Davoodzadeh, G. Uahengo, D. Halaney, J. E. Garay and G. Aguilar. "Influence of low temperature ageing on optical and mechanical properties of transparent yttria stabilized-zirconia cranial prosthesis," Proc. SPIE 10486, Design and Quality for Biomedical Technologies XI, 104860A, 2018

N. Davoodzadeh, D. Halaney, C. R. Jonak, N. Cuando, A. Aminfar, D. K. Binder and G. Aguilar. "Laser speckle imaging of brain blood flow through a transparent nanocrystalline yttria-stabilized-zirconia cranial implant," Proc. SPIE 10493, Dynamics and Fluctuations in Biomedical Photonics XV, 1049303, 2018

I. Pinchuk, W. Amamou, A. Goad, **D. O'Hara**, R. Kawakami, "Tuning Magnetic proximity effect inside CoFe₂O₄/Pt bilayers by controlling the interface structure," APS Meeting Abstracts, 2017