



American Chemical Society - Orange County Section

# High School Awards Dinner Banquet

**Tuesday, May 24<sup>th</sup> 2016**

**Student Center, University of California, Irvine**  
**Corner of West Peltason Drive and Pereira Drive**

Registration - 5:45 pm

Dinner (Italian Buffet) - 6:00 pm

Speaker - 6:45 pm

Award Presentation - 7:45 pm

## **Reservations:**

- Teachers should make the reservations for students and teachers.
- Parents and teachers may make up to 1 or 2 additional reservations.

Registration and payment must be done online. Go to the Orange County American Chemical Society website [www.ocacs.org](http://www.ocacs.org). On the 'Education' tab, click on the 'High School First-Year Exam' button and then the 'Awards Dinner' button. Alternatively, open [www.ocacs.org/acshighschoolsexam.htm](http://www.ocacs.org/acshighschoolsexam.htm). Follow the directions to register all the guests and pay for their dinners with a credit/debit card or PayPal. **Please remember to pay for the Dinners after filling in and submitting the registration form.** Print out the PayPal receipt and bring it to the Banquet.

Registration and payment for the Dinner must be completed by **midnight** on **Wednesday, May 18<sup>th</sup> 2016**.

To be seated with a particular high school's students, make sure you enter the name of the High School and we will do our best to accommodate you.

**Cost:** \$25 per person. The teacher of each student awardee and the student attend as guests of ACS, but reservations are required. No one can be seated for dinner without advance reservations.

E-mail questions to Helen Wagner at [hwagner0227@gmail.com](mailto:hwagner0227@gmail.com).

**Directions:** Exit the 405 freeway on Culver Drive going South. Turn right onto University Drive and then left onto Harvard Avenue. Turn right onto Bridge Road and finally left onto Pereira Drive. See attached map.

The parking structure is across from the Student Center. Cost: \$10.

# **Incorporating Small Tools to Address Large Problems: Using Microfluidic Devices in Applications Ranging from Point-of-Care Diagnostics to Single Cell Nucleomics**

**Mary Arrastia**

*California Institute of Technology, Pasadena, CA*

## **Biography**

Mary Arrastia grew up in Buena Park, California, and has currently attained all of her educational degrees in the Southern California area. She graduated from Troy High School in 2011 and pursued her undergraduate studies at California State University, Los Angeles (CSULA), under the university's Presidential Scholarship. During the summer of 2013, she partook in an international research experience in Brazil at the Instituto de Química de São Carlos. She graduated Magna Cum Laude from CSULA in 2015 with a degree in Chemistry (with honors) and a minor in Mathematics. Following graduation, she started her Ph.D. in Chemistry at California Institute of Technology as an Earle C. Anthony graduate fellow with hopes of becoming a bioanalytical chemistry professor.

## **Abstract**

Microfluidic devices are small yet versatile tools that are widely used in addressing a number of questions in biological and chemical research. Mary will be discussing the use of these devices in both her undergraduate and graduate school research experiences, where they have been used to address topics in point-of-care (POC) diagnostics and single-cell nucleomics studies. Microfluidic POC devices can be small, low-cost and rapid tools in disease diagnosis, especially in limited resource settings where large equipment typically found in doctor's offices is not always readily available.

Mary will describe her current research to show how microfluidic devices can be used to encapsulate single cells and map out the DNA-RNA interactions in these nuclei to better understand the roles RNAs play in shaping nuclear organization. In combination with her research, she will lay out her experiences to illustrate how she decided to pursue graduate studies in Chemistry. She will close her talk by discussing her plans after attaining her Ph.D.