

# Paige Aiona

385-B Rowland Hall, University of California, Irvine

Irvine, CA 92697

Office Phone: (949) 824-7473

Mobile Phone: (808) 960-1985

[paiona@uci.edu](mailto:paiona@uci.edu)

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## Education:

**Ph.D. in Chemistry, University of California, Irvine.** Anticipated Graduation 2017.

**B.S. in Chemistry, Chapman University,** Minor in Mathematics. Graduated May 2012.

## Research Experience:

**Graduate Research Assistant,** University of California, Irvine. (Feb. 2013-Present)

Department of Chemistry, Principle Investigator: Dr. Sergey Nizkorodov

- Analysis of light-absorbing aerosols, brown carbon, via UV-Vis and fluorescence spectroscopy, as well as high resolution mass spectrometry

**Undergraduate Research Manager,** Chapman University (August 2011-May 2012)

Department of Chemistry, Principle Investigators: Dr. Catherine Clark and Dr. Warren De Bruyn

- Managed ongoing projects and trained new undergraduate research assistants

**Undergraduate Research Assistant,** Chapman University (February 2009-August 2011)

Department of Chemistry, Principle Investigators: Dr. Catherine Clark and Dr. Warren De Bruyn

- Analysis of the levels and diel cycling of hydrogen peroxide, a reactive oxidant produced photochemically from chromophoric dissolved organic matter (CDOM), in estuarine and coastal waters
- Optical characterization of the source and aging of CDOM in salt marshes, natural treatment wetland systems, and coastal waters using UV-Vis absorption and scanning fluorescence 3D excitation-emission spectroscopy
- Depth profiling of CDOM in the porewaters of salt marshes and natural treatment wetland systems using scanning fluorescence 3D excitation-emission spectroscopy
- Analysis of polycyclic aromatic hydrocarbons using scanning fluorescence 3D excitation-emission spectroscopy

## Teaching Experience:

**Graduate Mentor,** University of California, Irvine (June-September 2013, June-August 2015)

- Mentor to high school student looking into pursuing chemistry (Summer 2013)
- Mentor to undergraduate participating in the Summer Undergraduate Research Fellowship (SURF) Program (Summer 2013)
- Mentor to incoming graduate student in the University of California, Irvine: Competitive Edge Summer Research Program (Summer 2015)

**Graduate Teaching Assistant**, University of California, Irvine (September 2012-June 2013)

- Analytical Chemistry laboratory (Fall 2012)
- General Chemistry laboratory (Winter 2013)
- Analytical Chemistry laboratory (Spring 2013)

**AirUCI Workshop Teaching Assistant**, University of California, Irvine (June 2013)

- Atmospheric Integrated Research at UCI Teacher Workshop – outreach program for science teachers

**Undergraduate Student Grader**, Chapman University, (August 2011-May 2012)

- General Chemistry

### Work Experience:

**Office Assistant**, Chapman University, Department of Chemistry (August 2011-May 2012)

- Assistant for the Assistant to the Associate Dean

### Publications:

Fooshee, D. R., **Aiona, P. K.**, Laskin, A., Laskin, J., Nizkorodov, S. A., Baldi, P., Atmospheric oxidation of squalene: Molecular study using cobra modeling and high-resolution mass spectrometry. *Environ. Sci. Technol.* Accepted, 2015.

Romonosky, D. E., Ali, N. N., Saiduddin, M. N., Wu, M., Lee, H. J., Aiona, P. K., Nizkorodov, S. A., Effective absorption cross sections and photolysis rates of anthropogenic and biogenic secondary organic aerosols. *Atmos. Environ.* Accepted, 2015.

Clark, C.D., De Bruyn, W. J., **Aiona, P.**, Temporal variation in optical properties of chromophoric dissolved organic matter (CDOM) in Southern California coastal waters with near-shore kelp and seagrass. *Limnology and Oceanography*, Published Online, 2015.

Lee, H. J., **Aiona, P. K.**, Laskin, A., Laskin, J., Nizkorodov, S. A., Effect of solar radiation on the optical properties and molecular composition of laboratory proxies of atmospheric brown carbon. *Environmental Science & Technology*, 48(17), 10217-10226, 2014.

Clark, C. D., **Aiona, P.**, Keller, J. K., De Bruyn, W. J., Optical characterization and distribution of chromophoric dissolved organic matter (CDOM) in soil porewater from a salt marsh ecosystem. *Marine Ecology Progress Series*, 516, 71-83, 2014.

De Bruyn, W.J., Clark, C.D., Ottelle, K., **Aiona, P.**, The photodegradation of phenanthrene as a function of natural water variables modeling fresh to marine environments. *Marine Pollution Bulletin*, 64(3), 532-538, 2012.

Clark, C.D., De Bruyn, W. J., Hirsch, C.M., **Aiona, P.**, Diel cycles of hydrogen peroxide in marine bathing waters in Southern California, USA: in situ surf-zone measurements. *Marine Pollution Bulletin*, 60, 2284-2288, 2010.

Clark, C.D., **Aiona, P.**, De Bruyn, W. J., Brahm, B., Optical properties of chromophoric dissolved organic matter (CDOM) in the surface waters and sediment porewaters of a Southern California freshwater natural treatment wetland system. *Environmental Science & Technology*, In preparation.

**Aiona, P. K.**, Nizkorodov, S., Lee, J., Laskin, A., Laskin, J., The ability of 4-oxopentanal to act as a brown carbon precursor and the determination of 2-methyl pyrrole as an intermediate in brown carbon production. *Atmos. Environ.* In preparation.

Lee, H. J., **Aiona, P. K.**, Leslie, R., Lin, P., Laskin, A., Laskin, J., Nizkorodov, S. A., Photochemistry of aqueous mixtures of methylglyoxal and ammonium sulfate. In preparation.

### Oral Presentations:

**Paige K. Aiona.** Analysis of brown carbon in aerosols and the aqueous phase. Conference of Ford Fellows, Irvine, CA, September 2014.

**Paige K. Aiona,** Alexander Laskin, Julia Laskin, Hyun Ji (Julie) Lee, Sergey A. Nizkorodov. Analysis of brown carbon in aerosols and the aqueous phase. 248<sup>th</sup> American Chemical Society National Meeting, San Francisco, CA, August 2014.

### Poster Presentations:

**Paige K. Aiona,** Amanda MacMillan, Julie Lee, Xiaolu Zhang, Taylor Helgestad, Gordon Novak, Peng Lin, Veronique Perraud, Julia Laskin, Alexander Laskin, Timothy Bertram, Christopher Cappa, Sergey A. Nizkorodov. Effects of humidity, NO<sub>x</sub>, and ammonia on the optical properties and molecular composition of photo-oxidized naphthalene secondary organic aerosols. International Chemical Congress of Pacific Basin Societies, Honolulu, HI, December 2015.

**Paige K. Aiona,** Julia Montoya, Sergey A. Nizkorodov. Effects of ammonia on aerosol composition. Conference of Ford Fellows, Washington, D.C., September 2015.

**Paige K. Aiona,** Hyun Ji (Julie) Lee, Sergey A. Nizkorodov, Julia Laskin, Alexander Laskin. Absorption coefficient, molecular composition, and photodegradation of different types of brown carbon aerosols. 32nd Informal Symposium on Kinetics and Photochemical Processes in the Atmosphere, Northridge, CA, April 2015.

**Paige Aiona,** Catherine Clark, Warren De Bruyn, Jason Keller. Association of optical properties of Chromophoric dissolved organic matter in soil porewaters with seasonal variations in dated sediment cores. 243rd American Chemical Society National Meeting, San Diego, CA, March 2012.

**Paige Aiona,** Catherine Clark, Warren De Bruyn, Benjamin Brahm. Analysis of Chromophoric Dissolved organic matter (CDOM) in a Southern California freshwater natural treatment wetland system (NTWS). 43rd American Chemical Society Western Regional Meeting, Pasadena, CA, November 2011.

**Paige Aiona,** Catherine Clark, Warren De Bruyn, Jason Keller. Optical characterization of NOM in surface water and sediment porewater in Southern California wetlands: comparison of a restored salt marsh to a natural treatment wetland system. Fourth International Water Association Specialty Conference on "Natural Organic Matter: From Source to Tap and Beyond," Costa Mesa, CA, July 2011.

**Paige Aiona**, Catherine Clark, Warren De Bruyn. Biological influences and photodegradation of chromophoric dissolved organic matter (CDOM) produced by sea grass and kelp in Southern California coastal waters. Schmid College of Science Student Research Fair and Student Undergraduate Research Fair and Creative Scholars, Orange, CA, May 2011.

**Paige Aiona**, Catherine Clark, Warren De Bruyn. Analysis of chromophoric dissolved organic matter (CDOM) in a Southern California salt marsh with relationship to sediment depth. Southern California Undergraduate Research Conference in Chemistry and Biochemistry, Santa Barbara, CA, April 2011.

Benjamin Brahm, **Paige Aiona**, Catherine Clark, Warren De Bruyn. Determination of the optical characteristics and photodegradation of chromophoric dissolved organic matter with 3D fluorescence excitation-emission matrices from the Southern Californian wetland species *Typha latifolia* and *Scirpus lacustris*. 241st American Chemical Society National Meeting, Anaheim, CA, March 2011.

**Paige Aiona**, Catherine Clark, Warren De Bruyn. Optical characterization of chromophoric dissolved organic matter in sediment pore waters of a Southern Californian salt marsh. 241st American Chemical Society National Meeting, Anaheim, CA, March 2011.

Catherine Clark, Warren De Bruyn, **Paige Aiona**, Benjamin Brahm. Diel cycling of hydrogen peroxide and optical properties of chromophoric dissolved organic matter in Southern California coastal waters. National Meeting of the American Society of Limnologists and Oceanographers (ASLO), Santa Fe, NM, June 2010.

**Paige Aiona**, Charlotte M. Hirsch, Catherine Clark, Warren De Bruyn. Diel studies of hydrogen peroxide production and cycling in urban-impacted Southern California coastal receiving waters. Schmid College of Science Research Fair, Orange, CA, April 2010.

Catherine Clark, Warren De Bruyn, Charlotte M. Hirsch, **Paige Aiona**. Diel cycling of hydrogen peroxide in Southern California coastal waters. National American Geophysical Union Meeting (AGU), San Francisco, CA, December 2009.

**Paige Aiona**, Charlotte M. Hirsch, Catherine Clark, Warren De Bruyn. Spatial and temporal measurements of hydrogen peroxide concentrations in recreational marine bathing waters in Southern California. Schmid College of Science Research Day, Orange, CA, April 2009.

### **Fellowships:**

Graduate Research Fellowship, National Science Foundation: Awarded 2014

Ford Foundation Pre-doctoral Fellowship: Awarded 2014

### **Honors, Awards, and Scholarships:**

Associated Graduate Students (AGS) Travel Grant, University of California, Irvine: Fall 2015

Cheverton Award Finalist, Chapman University: May 2012

Graduated Magna Cum Laude, Chapman University: May 2012

Outstanding Leadership as President of American Chemical Society, Chapman University and the Faculty of Chemistry: April 2012

Special Recognition and Special Achievement-American Chemical Society, Chapman University and the Faculty of Chemistry: April 2012

Outstanding Senior Chemistry, Chapman University and the Faculty of Chemistry: April 2012

Program Honors, Chapman University and the Faculty of Chemistry: April 2012

The Om and Saraswati Bahethi Scholarship, American Meteorological Society: 2011- 2012

Outstanding Chemistry Student at Chapman University, American Chemical Society Orange County Section: 2011-2012

Shuichi, Katsu & Itsuyo Suga Scholarship, Hawaii Community Foundation: 2011-2012

Chancellors List, Chapman University: Fall 2008, Spring 2009, Spring 2011, Spring 2012

Deans Scholarship, Chapman University: 2008-2009, 2009-2010, 2010-2011, 2011-2012

Chapman Grant, Chapman University: 2008-2009, 2009-2010, 2010-2011, 2011-2012

Office of Hawaiian Affairs Higher Education Scholarship Program, Hawaii Community Foundation: 2009-2010, 2010-2011, 2011-2012

Kaiulani Home for Girls Trust Scholarship, Hawaii Community Foundation: 2009-2010, 2010-2011, 2011-2012

Gamma Beta Phi Scholarship, Chapman University: Fall 2011

Norris Foundation Scholarship, Chapman University: 2010-2011

National Science and Mathematics Access to Retain Talent (SMART) Grant: 2010-2011

Na Ho`okama a Pauahi Scholarship, Kamehameha Schools: 2008-2009, 2009-2010, 2010-2011

### **Associations and Leadership Experience:**

**Iota Sigma Pi National Honor Society for Women in Chemistry** (February 2013-present)

- Student Member, University of California, Irvine – Calcium Chapter:

**American Chemical Society** (August 2009-present)

- Student Member, Chapman University Student Branch: August 2009 to May 2010
- Secretary, Chapman University Student Branch: May 2010 to May 2011
- President, Chapman University Student Branch: May 2011 to May 2012

**Gamma Beta Phi Honor Society** (May 2009-May 2012)

- Student Member: May 2009 to May 2011
- Retention Officer: May 2011 to May 2012

**American Society of Limnologists and Oceanographers (ASLO)**, Member (2010-2011)

**Outreach/Volunteer Work:**

UCI Chemistry Outreach Program: November 2015-present

- Performed chemistry demonstrations for the local elementary schools

Guide for AirUCI Lab Tours: April 2015 and October 2015

- Lead groups of high school students and teachers to different chemistry laboratories on the UCI campus for demonstrations/Q&A sessions

Scientist in the Room at the Boys and Girls Club: June 2015

- Participated in an after school program with hands-on science experiments to encourage children from all age groups to be interested in learning about science.

Organized Lab Tour for Lennox Math, Science & Technology Academy: October 2014

- Organized experiments/demonstrations that our lab would show high school visitors

Science Day at the Santa Ana Zoo: October 2009, October 2010, and October 2011

- Performed science demonstrations for the public

Magic @ the Library: December 2009, April 2010, and December 2010

- Reading and making crafts with children at the public library

Relay for Life: March 2010

- Team Leader-Created a team and participated in Relay for Life on campus

Science and Nature at the Park (SNAP): February 2010

- Performed demonstrations related to research done at Crystal Cove State Park

Caring Friends Cat Rescue: November 2008-present

- Adoption Center Cleaner and Adoption Manager