ALUMNI NEWS

Spring 2016

CU Denver Chemistry Department

A Word from the Chair

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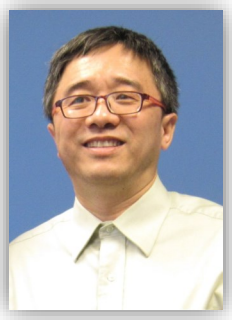
At the end of every academic year the college conducts an award ceremony to recognize special achievements of our students, faculty, and staff. This year our department has four awardees: Roubina Tatavosian was recognized as the Outstanding CLAS M.S. graduate student, Marta Maron received the CLAS Excellence in Teaching Award, Priscilla Burrow received the CLAS Excellence Award in Service and Leadership, and Laura Cuellar received the CLAS Outstanding Staff Award. We are truly proud of them and are fortunate to work with such extraordinary individuals to continuously improve our department.

May 13, 2016 our Department held its Student Recognition Celebration. A list of the award recipients and their group pictures are included in this newsletter. This year we have established a new award and a new scholarship. The first, is the graduate & undergraduate research award, which recognizes a senior undergraduate, a first-year graduate, and a senior graduate student for their research achievements. The second, is the Douglas F. Dyckes Scholarship, which recognizes and supports CU Denver's outstanding undergraduate students majoring in chemistry that plan to pursue careers in health sciences. Former professor and chair of the Chemistry Department Douglas Dyckes assisted in the set up of this scholarship and provided the initial funding. The department will work with the Office of Advancement to raise funds for the endowment of this scholarship in the next three years.

A major event of the 2015-2016 academic year was the academic program review which is conducted every seven years. The site visit by the external review team took place on September 21 and September 22, 2015. During their two-day visit, the reviewers met with Dean Pamela Jansma, Associate Dean for Planning, Initiatives and Diversity Marjorie Levine-Clark, myself, department faculty and staff, and students. The team members were very impressed by the achievements accomplished by our faculty and students, they offered some valuable suggestions to the



department. The department will work with the college to develop an implementation plan for the next three years using the recommendations and suggestions from the External Review Team.

One distinguished feature of the department, as pointed out by the external reviewers and many others, is that we have excellent students and hard-working faculty members. Meanwhile, most of the students interviewed by the reviewers expressed appreciation of learning frontier research with our award-winning faculty members. It is important to keep this tradition and build more strength in the area of research and teaching. Many visitors noted that although this department only offers M.S. degrees, the level of external funding and publications in peer-reviewed journals of this department is comparable to a small Ph.D. program. I am confident that things will further improve in the next few years.

The department has finished several curriculum developments, and is implementing additional courses in the area of biochemistry. New leadership is being developed as the composition of faculty changes. Currently the department has twelve tenure-track faculty members and five non-tenure track instructors. Among the first category seven are assistant professors, two are associate professors, and three are full professors. In the coming year, four will apply for tenure and promotion to associate professors, and two will apply for promotion to full professors. This will help overcome an area of weakness with respect to the lack of senior faculty to mentor junior faculty. The department plans to have two junior hires in the next two years to strengthen the areas of computational chemistry and material chemistry, and will also work on creating an external advisory board composed of alumni and scientists from local chemical/biotech companies, national labs, and academic institutions to help guide curriculum development and enhance the competitiveness of graduates. Your thoughts and suggestions on these matters are extremely welcome.

Sincerely,

Haobin Wang

Haobin Wang

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Douglas F. Dyckes Scholarship

The Chemistry Department announced a new scholarship honoring former professor and Chairman Douglas F. Dyckes.

This scholarship, is awarded annually to an undergraduate student majoring in chemistry, and was established to recognize the many contributions that Douglas F. Dyckes has made, and continues to make, to the chemistry department and the broader University of Colorado Denver community. Given his influence, guidance, and dedication to educating students, this scholarship is a fitting way to recognize Dr. Dyckes.

Dr. Liliya Vugmeyster, New Assistant Professor

Dr. Liliya Vugmeyster received her Ph.D. at the University of New York at Stony Brook in collaboration with a Columbia University laboratory. Following two postdoctoral trainings in Switzerland and Brandeis, she joined the University of Alaska Anchorage as a faculty member in 2006. There she taught various General Chemistry and Physical Chemistry courses with an emphasis in biomolecular applications.

Dr. Vugmeyster joined the CU Denver Department of Chemistry in Fall of 2015 as an Assistant Professor to pursue teaching in Biochemistry. As a faculty member, she plans to continue her research program currently funded by the National Institutes of Health.

Dr. Vugmeyster's research has three major directions: fundamental studies of protein dynamics and folding using NMR spectroscopy and modeling, applications to amyloid fibrils involved in Alzheimer's Disease, and investigation of water survival mechanisms in Antarctic soils.

Dr. Vugmeyster is dedicated to the highest quality of student training by sharing her research passion. She provides in-depth training with state-of-the-art instrumentation, as well as theory of NMR and protein folding.

Dr. Jung-Jae Lee, New Assistant Professor

Dr. Jung-Jae Lee Received his Ph.D. degree in Organic Chemistry from the University of Notre Dame in 2009. His doctoral dissertation research in supramolecular chemistry and molecular imaging was under the direction of Dr. Bradley Smith. Subsequently, he completed his postdoctoral research at the Notre Dame Integrated Imaging Facility developing targeted luminescent probes for optical imaging of cancer and bacterial infection in patients. In 2011, Dr. Lee worked for the laboratories of Dr. Robert Langer and Dr. Daniel Kohane at the Massachusetts Institute of Technology and Harvard Medical School. He developed an *in vivo* stimuli responsive drug delivery systems for the treatment of cancer, age-related macular degeneration, and an approach to clear bacteria from the bloodstream using microfluidic channels for the treatment of sepsis.

Dr. Lee joined the CU Denver Department of Chemistry as an Assistant Professor in Fall of 2015. Dr. Lee's research is currently focused on nanomedicine for clinical use in a wide range of topics in drug delivery, biomaterials, and molecular imaging.

Dr. Kyoung Nan Kim, New Instructor

Dr. Kyoung Nan Kim received her Ph.D. in Chemistry with a focus in bio-nano technology at the University of Notre Dame in 2012. Her research focused on developing a nano-scale programmable DNA chip that could be utilized as a biosensor, computer IC chip, and cargo for drug delivery systems. During her Ph.D. study, she obtained advanced biochemistry and engineering skills.

Her particular interest in chemistry began in high school, with the Chemistry Club. During this time she found that information from textbooks does not always express the full concept of chemistry. Hands on experience in labs however, offer an in depth understanding.

As such, her interest focused on developing an advanced education program in chemistry utilizing software, lab work, models, etc. Dr. Kim also sub-majored in Science Education to support her philosophy by understanding purposed application and interpretation of learning. More specifically, she was interested in higher science education that helps students understand difficult concept.

Dr. Kim joined the CU Denver Department of Chemistry in Fall of 2015 as a full time Instructor. Dr. Kim plans to develop advanced course material in biochemistry and organic chemistry by utilizing her background in chemistry and science education. Her main goal is to make chemistry fun.

CU Denver Chemistry Club

The CU Denver Chemistry Club had an eventful 2015-2016 academic year. Among their contributions was the 3rd annual DataBlast. DataBlast connects students through a series of presentations in student research and their experiences. The Chemistry Club also organized student research presentations in the spring to honor award recipients of the Dreyfus Student Research Awards. Guest included students, faculty, as well as the Dreyfus Awards guest speaker, Dr. Sharon Hammes-Schiffer.

An important mission of the Chemistry Club is youth outreach. The group was honored to participate in four outreach activities hosted by various organizations. Having worked with the full spectrum of K-12 students, they explored various scientific concepts with groups of ten to one hundred students. Included in their experiments were non-Newtonian fluids, molecular modeling, polymer formation, and acid-base indicators.

Lastly, the Chemistry Club re-designed their monthly meetings and created a new tradition, with the Chemistry Club's Welcoming Party. This change was made to encourage new memberships and appreciate existing members. Over the year the Club participated in campus events including CLAS Kickball, taking home the trophy with the Department of Mathematic; conducting fundraiser events through the sale of lab goggles, ACS exam study guides; and they held discussions with the Department of Chemistry's weekly seminars guest speakers.

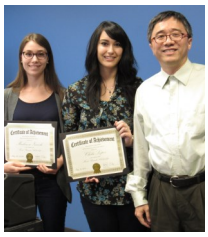
We are proud of all that The CU Denver Chemistry Club has been involved in this year and look forward to another successful year.

2015-2016 Student Recognition Awards Recipients

2015-2016 Award Recipients left to right:
Jack Henderson, Mackenzie Zarecki, Adam Duster, Bradley Reid, Rupinder Kaur, Chelsi Lopez, Roubina Tatavosian, Isaac Falconer, Lana Salah, Chloe Pitsch, Nara Chon, Haobin Wang, (Professor and Chairman), Thao Huynh, Danielle Miller , Christina Garza, Jack Baldasare, Vishruti Patel, William Obilisundar

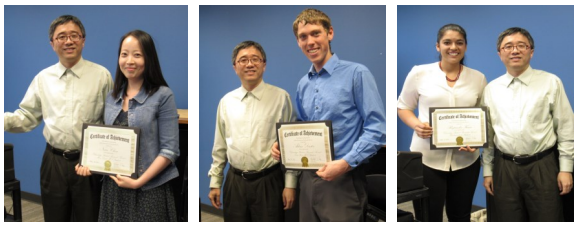
Douglas F. Dyckes Award:
Thao Huynh
Dr. Haobin Wang

Robert Damrauer Award:
Chelsi Lopez
Dr. Haobin Wang

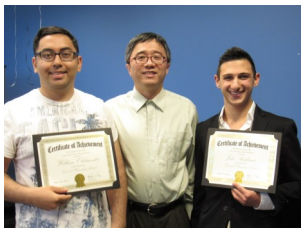


Marti Barrett Award:
Mackenzie Zarecki, Chelsi Lopez
Dr. Haobin Wang

Michael Milash Award:
Dr. Haobin Wang
Roubina Tatavosian



Student Research Award: Left to Right
Dr. Haobin Wang , Nara Chon, Dr. Haobin Wang, Adam Duster
Rupinder Kaur, Dr. Haobin Wang



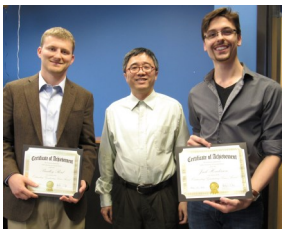
General Chemistry Award:
William Obilisundar,
Dr. Haobin Wang, Jake Baldasare

Honors General Chemistry Award:
Dr. Haobin Wang,
Vishruti Patel

Inorganic Chemistry Award:
Lana Salah, Dr. Haobin Wang,
Chloe Pitsch

Organic Chemistry Award:
Dr. Haobin Wang
Danielle Miller

Biochemistry Award:
Dr. Haobin Wang, Christina Garza,
Isaac Falconer



Outstanding Graduates Award:
Bradley Reid, Dr. Haobin Wang,
Jack Henderson

Douglas F. Dyckes Award	Thao Huynh
Robert Damrauer Award:	Chelsi Lopez
Marti Barrett Scholarship:	Chelsi Lopez
	Mackenzie Zarecki
Michael Milash Award:	Andrew Schildkret
	Roubina Tatavosian
Student Research Award:	Nara Chon
	Adam Duster
	Rupinder Kaur
General Chemistry:	Jake Baldasare
	William Obilisundar
Honors General Chemistry:	Vishruti Patel
Inorganic Chemistry:	Chloe Pitsch
	Lana Salah
Organic Chemistry:	Danielle Miller
Analytical Chemistry:	Jeanne Kim
Biochemistry:	Isaac Falconer
	Christina Garza
Outstanding Graduates:	Jack Henderson
	Bradley Reid

CU Denver Chemistry Faculty Publications

L. G. Anderson, Effects of Using Renewable Fuels on Vehicle Emissions, Renewable and Sustainable Energy Reviews, 47, 162-172, 2015. DOI information: 10.1016/j.rser.2015.03.011

L. G. Anderson, Effects of Biodiesel Fuels Use on Vehicle Emissions, Journal of Sustainable Energy and Environment, 3, 35-47.

Margaret Bruehl, Denise Pan, and Ignacio J. Ferrer-Vinent. Demystifying the Chemistry Literature: Building Information Literacy in First-Year Chemistry Students through Student-Centered Learning and Experiment Design. Journal of Chemical Education Article ASAP September 11, 2014 DOI: 10.1021/ed500412z.

"Introducing Scientific Literature to Honors General Chemistry Students: Teaching Information Literacy and the Nature of Research to First-Year Chemistry Students". Ignacio J. Ferrer-Vinent, **Margaret Bruehl**, Denise Pan, and Galin L. Jones J. Chem. Educ., 2015, 92 (4), pp 617–624.

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Leng, C. B.; Pang, S. F.; Zhang, Y.; Cai, C.; **Liu, Y.***, Zhang, Y. H.*, Vacuum FTIR Observation on the Dynamic Hygroscopicity and Efflorescence of Aerosols under Pulsed Relative Humidity, *Environ. Sci. Technol*., 2015, under revision.

Reid E. Messersmith, Greg J. Nusz, and **Scott M. Reed.** "Using the Localized Surface Plasmon Resonance of Gold Nanoparticles to monitor Lipid Membrane Assembly and Protein Binding." Journal of Physical Chemistry C, 2013, DOI: 10.1021/jp406013q.

Benjamin R. Ayres and **Scott M. Reed.** "A minor lipid component of soy lecithin causes growth of triangular prismatic gold nanoparticles." Enviromental Science: Nano, 2014, DOI:10.1039/C3EN00015J.

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Colleen M. Bartmana, Jennifer Egelstona, **Xiaojun Ren**, Raibatak Dasa, Christopher J. Phiel (2014) A simple and efficient method for transfecting mouse embryonic stem Cells using polyethylenimine. *Experimental Cell Research* Aug 4.

Bo Cheng[#], **Xiaojun Ren**, Tom K Kerppola (2014) KAP1 represses differentiation-inducible genes in embryonic stem cells through cooperative binding with PRC1 and derepresses pluripotency-associated genes. *Molecular and Cellular Biology* 34(11):2075-91

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Nelson, J. W.; Grundy, L. M.; Dang, Y.; Wang, Z.-X.; **Wang, X**. "Mechanism of *Z*-Selective Olefin Metathesis Catalyzed by a Ruthenium Monothiolate Carbene Complex: A DFT Study," *Organometallics* 2014, *33*, 4290–4294.

CU Denver Chemistry Faculty

Larry Anderson, Prof. Emeritus
Margaret Bruehl
Priscilla Burrow
Robert Damrauer
Douglas Dyckes Prof. Emeritus
Vanessa Fishback
Kim Nan Kyoung
Doris Kimbrough
Karen Knaus
Jefferson Knight
Jung-Jae Lee
Hai Lin
Yong Liu
Marta Maroń
Scott Reed
Xiaojun Ren
Marino Resendiz
Liliya Vugmeyster
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