Dr. Louis Campisi Recognized: Facere et Docere, 50 Years of Service

“I arrived at Iona College as a chemistry instructor at the start of Fall ’62, 50 years ago. How I was appointed to the position at Iona is a story in itself. I was a graduate student in chemistry at Fordham University finishing up a Ph.D. I had also worked (1961-1962) as a chemistry instructor at the College of Pharmacy at Fordham teaching General Chemistry lecture and lab, so I had a modicum of teaching experience. This background turned out to be useful, since during the summer of 1962 one of the three full-time chemistry faculty at Iona resigned and an immediate need was created for a new hire to teach the expected one hundred freshmen in General Chemistry. The Chair of the Chemistry Department, Dr. Viateur Rousseau, reviewed my background and hired me. I believe the Iona salary was about $4,800 per year (higher than at the College of Pharmacy) and the teaching load was about 15 contact hours per semester.

The chemistry labs in 1962 were located in the basement of Cornelia Hall, occupying about half of the floor including a portion of the hallway (passage from the east or west side of Cornelia to the other side was interrupted). The General Chemistry lab was the largest of the labs, capable of providing for up to 24 students; it was located on the north side of the building below the General Physics lab. Adjacent to the General Chemistry lab, facing the quadrangle, was a smaller lab devoted to Organic Chemistry and Quantitative Analysis. The small Physical Chemistry lab was adjacent to this space (now the chemical stockroom). Some time in 1970 with the advent of Instrumental Analysis, the department was granted a classroom in the basement, outfitted with a gift of lab cabinets and stone lab tops from Ciba Geigy.

For years it had been the feeling of the science faculty that the location of the chemistry labs needed to be changed to provide for a better lab experience. Ultimately we planned to move the general and organic labs to the top floor of Cornelia, establish a stock/prep room, and install an elevator. Initially a large, dual use, well-vented Organic/General lab was constructed. Holding Organic and General Chemistry labs in the same facility proved unworkable and the dual use lab was devoted to organic labs, research, synthesis, and physical chemistry labs. As a result the current General Chemistry lab was created with a quite manageable capacity of 14.

As new faculty joined the department we have provided for areas where they can conduct research. Currently these include the organic lab, the former stock room on the top floor, a computer lab, and the site of the organic/quant lab of yesteryear in the basement. Finally, there is now a science student resource room in the basement of Cornelia where students can meet, rest, and study.

I had taken the teaching position at Iona because I and my fiancé (now wife of 49 years) were planning a wedding for July 1963. My plan was to stay at Iona for a year or two, finish my dissertation, and then get a job in industry for “big bucks”. Obviously in the first year that I taught I was awakened to other dimensions of teaching, which ultimately changed my career path and enabled me to enjoy 50 years of teaching chemistry at Iona. I am glad I chose this path.”

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Eleven Chemistry/Biochemistry Students Present Research at 244th National Meeting of the ACS in Philadelphia PA on August 19-23, 2012

As a capstone to the student research experience of summer 2012, eleven Iona undergraduate research students attended the 244th National Meeting of the American Chemical Society (ACS) with their faculty mentor, Dr. Lee. The student attendees are shown in the photo right. This was made possible through a NSF research grant awarded to Dr. Lee. Among these 11 students, six (6) of the students, who are Patrick Martin Scholars (Erin Morgan, Jaclyn Robustelli, Courtney Veilleux, Michelle Muzzio, Omoakhe Tisor, Kevin Towler), are particularly grateful to Dr. Patrick Martin for his generous scholarship.

Each year the ACS organizes two national meetings that provide chemists with an opportunity to meet and share research experiences, learn what’s cutting-edge in their areas of interest, as well as network with colleagues from across the world. This year, the 244th such Meeting took place in Philadelphia, PA, and the team of eleven students was honored to be a part of it. The ACS National Meeting is an international conference attended by nearly 12,000 chemists world-wide. The conference consists of seminars, workshops, and poster presentations, scheduled over a five-day period, discussing frontier research and teaching in chemical science. The theme of this year’s meeting was “Materials for Health and Medicine” which showcased the latest developments in biomaterials research as they are related to health and medicine.

The student team made five presentations to an audience of interested chemists in both Colloid and Surface Chemistry Division and Division of Chemical Education.

Congratulations to Chemistry Awards Winners!

Kevin Towler (Chemistry ’15) 2012 CRC Press Chemistry Achievement Award

Darius Fartash (Chemistry ’13) ACS Analytical Chemistry Excellence Award

Tenesha Canzius (Chemistry ’12) Ionic Bonds Award for Dedicated Service to Chemistry Community

Michelle Muzzio (Biochemistry ’15) ACS Westchester Section Outstanding Chemistry Award.

Jaclyn Robustelli (Biochemistry ’14) Organic Chemistry Excellence Award

Cari Anderson (Chemistry, ’13) The Levkov Prize in Physical Chemistry
On April 20, 2012, Iona College hosted the third Undergraduate Research Day (URD). This annual event provides the perfect opportunity for students to highlight their research accomplishments, share their work with fellow students, and inspire others. Of about eighty research projects from various disciplines of the School of Arts and Science, eleven research projects were contributed by following fifteen chemistry and biochemistry students; Kiersten Giusto, Catherine Morris, Nousin Hauqe, Darius Fartash, Zuzanna Michalak, Erin Morgan, Allyson Moffat, Jaclyn Robustelli, Alexander Soderberg, Peter Vitale, Courtney Veilleux, Thomas Pennington, Zenaida Baksh, Genesis Cabrera, and Marianna Makrides.


3. Zuzanna Michalak, Nousin Hauqe, Darius Fartash, Sunghee Lee: "Effect of Calcium on Anionic Lipids in Bilayers".

Twelve Iona undergraduate research students attended the 60th Annual Undergraduate Research Symposium (URS) sponsored by the American Chemical Society’s New York Section. This event was held at SUNY Old Westbury, NY on Saturday, May 5.

The student attendees were seniors Kiersten Giusto and Catherine Morris; juniors Darius Fartash, Nousin Haque, Allyson Moffat, Erin Morgan and Zuzanna Michalak; sophomore Jennifer Barajas; and freshmen Kevin Towler, Rosario Giacomini, Michelle Muzzio, and Omoakhe Tisor.

They were accompanied by their faculty mentors, Dr. Thomas Castonguay, Dr. Kathleen Kristian, and Dr. Sunghee Lee.

Three oral presentations were made to an audience of local chemical scientists:


3. Zuzanna Michalak, Nousin Haque, Darius Fartash, Sunghee Lee: "Effect of Calcium on Anionic Lipids in Bilayers".
Alumni Spotlight

Congratulations to Fifteen 2012 Graduates!
Two Students Earn ACS-Certified Chemistry Degrees

Congratulations to fifteen chemistry and biochemistry Graduates!
We wish them the best of luck in their next journey!

***

Biochemistry (2) : Kiersten Giusto, Catherine Morris
ACS Chemistry (2) : Genesis Cabrera, Alexander Soderberg
Chemistry (11) : Nicole Tamburri, Tenesha Canzias, Zenaída Baksh,
Jeffrey Inabi, Stephanie Biondo, Leonobi Galvez,
Shqiçe Gjevukaj, Ines Silva, Sasha Richard,
Alexandra Boccanfuso, Victoria Calabrese

Recent Alumni Happenings

1. Paul Sanstead (’11) University of Chicago, PhD Program in Chemistry.
2. Nick Florio (’11) SUNY, Stony Brook, School of Medicine, MD Program.
3. Dean Saccomanno (’11) NYU, DMD Program.
4. Danielle Guerrino (’11) Medical University of South Carolina, DMD Program.
5. Garner Soltes (’11) Princeton University, PhD Program in Molecular Biology.
6. Catherine Morris (’12) St Joseph’s College of Pharmacy, Pharm. D Program.
7. Kiersten Giusto (’12) St John’s University, PhD Program in Pharmaceutical Science.
8. Alexander Soderberg (’12) Northern Arizona University, MS Program in Chemistry.

Alumni News

Dr. James G. Connery (’63) was honored as a 50-year ACS member at the Chemical Heritage Foundation in recognition of his long and faithful service to the Society. Dr. Connery graduated from Iona College as a Chemistry major, received a PhD in electroanalytical chemistry at St. John’s University in 1969. He has held a variety of positions in industrial R&D, most recently at Honeywell. He is currently involved in developing high precision pH measurement for deep sea applications.

Alvin Acerbo (’06) has graduated with the degree of PhD in Biomedical Engineering from SUNY Stony Brook, 2012. His PhD Thesis is “Local Chemical and Nanostructural Properties of Rat Cortical Bone are Altered by Osteoporosis and Pharmaceutical Treatments” under the advisor, Dr. Lisa M. Miller from Brookhaven National Laboratory (BNL).

Aaron Snyder (’08) will begin his residency training at the University of Florida College of Medicine Jacksonville/Shands Jacksonville Medical Center in Obstetrics and Gynecology. He earned his MD at the Florida State University in 2012.

Attention Alumni!
Please send us an email if you would like to share any news with Iona Chemistry Community!
Contact Dr. Sunghee Lee, Chair, Department of Chemistry, SLee@iona.edu

Kristin Allain (’08) has graduated with the degree of Juris Doctor (JD) on May, 2012 from Stetson University College of Law, Florida.
Scholarly Activities for Faculty and Students, AY 2011-12.

Iona Students Give Total of 22 Conference Presentations involving 33 students at the local, regional, and national level conferences

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<td>The Third Annual URD at Iona College, April 2012</td>
<td>Eleven poster presentations by fifteen students</td>
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<td>The 60th NY ACS Undergraduate Research Day, SUNY Old Westbury, NY, May 2012</td>
<td>Three oral presentations by five students</td>
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<tr>
<td>The Eastern Analytical Symposium, November, 2011</td>
<td>Three poster presentations by four students</td>
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<tr>
<td>The 244th ACS National Meeting, Washington, DC, August 2012</td>
<td>Five posters presented by nine students</td>
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**Peer Reviewed Journal Articles (Student Coauthors Underlined)**


Twelve Students Inducted to National Chemistry Honor Society (GSE)

**Gamma Sigma Epsilon**

- Jennifer Barajas (’14)
- Genesis Cabrera (’12)
- Courtney Veilleux (’14)
- David Blessington (’14)
- Peter Vitale (’14)
- Jaclyn Robustelli (’14)
- Chimuka Cheepa (’13)
- Thomas Pennington (’14)
- Alicia Pawelec (’14)
- Daniel Lipus (’12)
- Michael Guzzardi (’14)
- Zenaida Baksh (’12)

Chemistry Faculty and Staff

- Dr. Samuel Acerbo: Emeritus
- Dr. Louis Campisi: Professor
- Dr. Jerome Levkov: Professor
- Dr. Terrence Gavin: Professor
- Dr. Sunghie Lee: Chair, Associate Professor
- Dr. Thomas Castonguay: Assistant Professor
- Dr. Kathleen Kristian: Assistant Professor
- Dr. John Hand: Instructor
- Ms. Paula DiSanza: College Laboratory Technician

Ionic Bonds

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Faculty News

Dr. Sunghee Lee Awarded $250,000 Grant from the National Science Foundation / Receive Rising Star Award from American Chemical Society

Professor Sunghee Lee, chair of the Iona College chemistry department, was awarded a grant of $250,000 over four years from the National Science Foundation (NSF). This grant will provide funds for a team of Iona College undergraduate students to continue important research on the investigation of the chemistry of crystallization in living systems.

“Grant awards such as this are critical to providing our research students with the opportunity to learn and engage in the process. This would not be possible without the generosity of benefactors such as the Patrick Martin Foundation and the NSF,” said Dr. Lee.

This summer, 13 Iona College undergraduate students and two high school students continued research funded by the NSF. Their research is vital to understanding how crystals in living organisms form, from bones and teeth to coral and seashells. The student researchers are a diverse group of freshmen, sophomores, juniors and seniors. Dr. Lee stated, “It is gratifying to see the evolution of a student researcher. They are not only experiencing being a part of important research, but they are also empowered by learning transferrable skills that are utilized in all subject areas.”

Dr. Lee has also been selected to be a recipient of the 2013 Women Chemists Committee (WCC) Rising Star award from the American Chemical Society (ACS). The announcement states Dr. Lee is being recognized for “excellence in the development and understanding of the liquid-liquid interface, and passionately nurturing the talents of a large array of undergraduates in publishable research projects.”

This award recognizes ten (10) exceptional women scientists approaching mid-level careers across all sectors who have demonstrated outstanding promise for contributions to their respective fields.

Dr. Lee will present her work at an awards symposium to be held at the 245th National Meeting of the ACS in New Orleans, LA on Monday, April 8th 2013. Dr. Lee will be recognized at the WCC Luncheon reception on Tuesday April 9th, 2013.

Dr. Terrence Gavin: Neurotoxicology Research in Collaboration with Dr. LoPachin, Albert Einstein College of Medicine

Since 2007 my primary research work has been the application of chemical principles to the field of Neurotoxicology in collaboration with Dr. Richard M. LoPachin (Department of Anesthesiology, Albert Einstein College of Medicine/Montefiore Hospital). We hypothesized that nerve terminal damage via cellular oxidative stress and/or the bio-accumulation of environmental toxins is a primary pathway for neurodegenerative diseases (e.g., Alzheimer’s disease, ALS etc.) and also plays a role in acute tissue injury states (traumatic spinal cord damage, liver injury, stroke). We demonstrated that the conjugate addition of protein bound thiol to electron deficient species inhibits protein function in the nerve terminal, and we have shown that this type of adduct formation can be directly responsible for dysfunction in a purified protein (recombinant human GAPDH). In addition, we developed a computational model based on Hard Soft Acid Base (HSAB) parameters which offered considerable predictive ability for the assessment of the biologically active species that may be involved in disease/injury states. Since enolate forming β-dicarbonyl compounds also undergo conjugate addition to electron deficient alkenes (the Michael Reaction), we theorized that such compounds would be biochemically protective of protein function. We have recently published studies involving both solution chemistry and cellular models that indicate such protection is possible and our current work is an extension of this concept into in vivo experiments to demonstrate the potential therapeutic relevance of the dicarbonyl compounds.

Iona students who work on this project will work on the following:

- Chemical synthesis of rare or heretofore unknown 1,3-dicarbonyl compounds (mostly β-diketones) using the methods of modern synthetic chemistry and spectroscopic analysis; Measurement of pKa values of the newly synthesized compounds; Computation of HSAB parameters for various biologically and environmentally relevant electrophiles and nucleophiles using quantum mechanical models.

- Other projects include testing the efficacy of dicarbonyl compounds as potential therapeutic agents in cellular models of neurodegenerative disease.
Dr. Thomas Castonguay: Computational Physical Chemistry, Research on Computational Design for Hydrogen Storage

In Dr. Castonguay’s group you will get hands-on experience using the latest approaches in molecular modeling and simulation. Dr. C’s latest project relates to the search for alternative energy sources. Since a hydrogen-based energy economy has potential to rid the world of many of today’s current problems, e.g., air pollution, greenhouse gas production, research into the use of hydrogen as an energy carrier is growing at a rapid pace. A particular challenge is the development of materials that are capable of storing hydrogen safely. The particular focus of Dr. C’s research is on the use of modern computational approaches to assist in the design of hydrogen storage materials that require a delicate balance of a variety of properties in order to be practical. For example, to meet the 2015 storage system targets hydrogen storage materials require gravimetric and volumetric densities of at least 7.5 wt % and 70 g/L, respectively, a minimum delivery pressure of 12 bar, and a fueling time of approximately 3 minutes. There are no systems to date that meet these requirements. Dr. C’s strategy is to use molecular dynamics (MD) calculations to simulate the diffusion of molecular hydrogen within a host lattice. In order to obtain accurate diffusion rates it is important that the energetics of the adsorption/desorption reaction profile be precise and accurate. To achieve this we use the results of high-level quantum chemical calculations. MD studies will provide the corresponding thermal properties of the host material, i.e., the heat capacity and thermal conductivity, properties that determine how heat flows throughout the lattice. The buildup of heat within the host material during loading is a consequence of the fact that the potential energy between the H₂ molecules and the host gets converted into kinetic energy. These thermal properties are necessary to determine whether or not a particular host candidate should be considered for production. With results from the MD calculations as input, the kinetic monte carlo method will be used to simulate the overall loading and unloading process while faithfully capturing temperature fluctuations. The ultimate goal is to give material developers a valuable tool for screening candidates for hydrogen storage. Contact Dr. C if you would like to find out more about his research.

Dr. Kathleen Kristian’s New Lab: Bio-Inorganic Chemistry / Organized Inaugural Inorganic and Organometallic Topical Group of ACS NY section

In the 2011-12 academic year Dr. Kristian gained access to her lab space in Cornelia 206 and is excited to begin a research program in the synthesis and reactivity of transition metal complexes of nitrogen oxides. She gave a presentation about her work on rhodium complexes of nitrite and nitric oxide at the 2012 ACS fall meeting in Philadelphia.

In addition to cleaning out and setting up the lab space, she has initiated curriculum development research projects with several Iona chemistry majors. During winter break, Vincent Cefola ’13 and Teneisha Canjus ’12 developed several new laboratory experiments for CHM 322: Instrumental Analysis, covering topics including light scattering, fluorescence spectroscopy, absorbance spectroscopy, and GC-MS. The experiments they tested and developed were successfully implemented into the lab curriculum in Spring 2012. Scott Friedbauer ’15, Donika Kabashi ’14, Jennifer Barajas ’14, and Jennifer Gomez ’15 have worked hard during the spring semester and summer to develop an analytical method for the determination of the Cd and Hg content of commercial fish samples by both Flame and Cold Vapor Atomic Absorption Spectrometry (FAAS and CV AAS). In collaboration with Dr. Kristian, they have learned sample preparation techniques, tested various literature protocols, developed their own protocols, and become proficient AAS users. Their efforts will result in a new AAS laboratory exercise for students in CHM 322 in Spring 2013 as well as poster presentations at Undergraduate Research Day and the CSTEP conference in 2013. Dr. Kristian also organized the inaugural “Frontiers of Inorganic and Organometallic Chemistry” lecture symposium as part of her efforts as co-chair of the Inorganic and Organometallic Topical Group of the ACS NY Local Section. The event took place on Sept. 14, 2012 on the campus of Columbia University, and featured four prominent inorganic/organometallic chemists from the NY region as well as a keynote address by Prof. Paul Chirik of Princeton University. Three Iona College science students, chemistry majors Scott Friedbauer ’15, Jennifer Gomez ’15 and biology major Fawaz Abdulkarim ’14, worked as volunteers and attended the lectures.
Why Study Chemistry at Iona?

Chemistry is the study of the world around us at the atomic and molecular scale. It occupies a central position among the sciences interfacing with mathematics, physics, and engineering, biology, and medicine.

The study of chemistry, with its uniquely wide span within the scientific spectrum, is an excellent way to develop one’s intellect. You acquire a powerful battery of analytical skills for problem solving, as well as the ability to analyze critically and to ask the pertinent questions. These skills are transferable to almost any context and are highly valued in the world of commerce and finance.

ACS recognizes successful Student Affiliates (SA) Chapters for conducting exceptional programs and activities during the academic year. The Iona College student affiliate chapter received the “commendable” award four years in a row, establishing a wonderful track record.

Congratulations on Iona SA Chapter of ACS for a job well done!

Iona Chemistry Club Wins ACS Students Affiliates Chapter Award Four Years in a Row

Order Iona Chemistry T-Shirt and Support Club Activity
To order, please email JRobustelli2@iona.edu

Careers in Science at Iona (CSI):
Alumni, We Need You!

We established the CSI program in 2004 to provide information about career opportunities in the sciences and in science-related fields to Iona students.

This is the ninth year of this program in which we invite speakers to meet with our students, in an informal setting, to describe traditional and non-traditional science-related careers.

We are actively seeking alumni to serve as guest speakers at our events.

To sign up as a guest speaker, please contact:
Sunghee Lee, PhD, at SLee@iona.edu or Jerome Levkov, PhD, at JLevkov@iona.edu

More Details, Visit Chemistry Department Homepage for CSI Events.