Department of Chemistry
Summary

As a part of the Ray P. Authement College of Sciences, the UL Lafayette Department of Chemistry consists of ten tenured/tenure-track faculty, four instructors, two adjunct faculty, and three staff members. As an ACS certified department, the Department (for the fall semester of 2017) has 73 chemistry majors enrolled in a Bachelor of Science (B.S.) program, as well as 67 pre-pharmacy majors. In addition, we offer minors in chemistry and forensics.

Enrollments

On average, we graduate 15-20 chemistry majors per year. Annual enrollments in departmental course offerings have increased dramatically, notably in the recent past, from 3,797 students in 2012 to 5,327 students in 2017, or a 40% increase over the past six years. This amounts to significant increases in faculty teaching loads, as course offerings are expanded to accommodate increasing demands.

Peer-Reviewed Journal Publications

After one retirement, our faculty currently has ten research-active members (Junk, Gallo, Knierim, Louka, Massoud, Srivastava, Taylor, Wang, Xu, Yan). Between 2012 and 2017, the Department of Chemistry produced 95 peer-reviewed publications, most of which appeared in prestigious journals. This amounts to 1.58 publications per research active faculty per year over the past six years. It should be noted that, in the absence of a graduate program, virtually all research was accomplished with the active participation of undergraduate students.
External Funding

Between 2012 and 2017, members of the faculty of the Department of Chemistry served as Principal Investigators (Project Directors) for $1.77 M in external funding. Most were multi-year awards; the graph below reflects starting years. It is noteworthy that a significant percentage of successful proposals resulted from intra- and interdepartmental collaboration, reflecting team effort. In addition, significant funding was secured by faculty members co-authoring proposals with PI's external to the Department of Chemistry. For example, an award of $1,010,901, co-authored by Dr. F. R. Louka in 2012, is noteworthy in this respect.

Funding by calendar year, 2012 – 2017, reflecting starting dates of external awards by chemistry faculty acting as Lead-PI’s
Presentations

Between 2013 and 2017, the faculty of the Department of Chemistry has given 80 presentations, or 1.27 presentations per research active faculty member per year. Many of these presentations were given to international audiences, 27 were by invitation.

Noted Accomplishments

Three of our faculty (Louka, Xu, Massoud) have held, or are still holding, Distinguished Professorships. In addition, members of our faculty serve as editors of fifteen prestigious journals.

Editorship

- **F.R. Louka**, member of the Editorial Board Journal of Medicinal Chemistry and Drug Design (JMCDD), 2017- pres.
- **S.S. Massoud**, Invited as Guest Editor for “Crystals” (http://www.mdpi.com/journal/crystals) special issue “Advances in Antitcancer by Coordination Compounds”, 2017
- **W. Xu**, Journal of Molecular and Translational Medicine, 2015.
- **S.S. Massoud**, Editorial Board of Journal of Modern Chemistry and Applications (JMCA), 2014.
Publications, Presentations

Journal Papers Published
2017


12. L. Fang, H. Ge, X. Huang, Y. Liu, M. Lu, J. Wang, W. Chen, W. Xu and Y.Wang. Trophic Mode-Dependent Proteomic Analysis Reveals Functional Significance of


2016


5. F.A. Mautner, C. Berger, R.C. Fischer, **S.S. Massoud**. “Coordination Polymers of Azido and Thiocyanato Cd(II) and Zn(II) Complexes Based on 2,6-Lutidine-N-oxide.


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**2015**

1. J.P. Myers, F.R. Fronczek and **T. Junk**. The first crystal structures of six- and seven-membered tellurium- and nitrogen-containing (Te-N) heterocycles: 2H-1,4-benzo-


2014


42. **S.S. Massoud, E. Taylor, Y. Liu, J. Grebowicz, R. Vicente, R. Lalancette, U. Mukhopadhyay, I. Bernal, S.F. Watkins.** Synthesis, Structure, Thermal, Magnetic Properties and Quantum Mechanical Calculations of Bridged [Bis(di(2-pyridylmethyl)amine)-(µ2-1,2-bis(4-pyridyl)ethane)-tetaperchlorato-dicopper(II)]
http://dx.doi:10.1039/C3CE41821A.

2013

2012


Book Chapters


Conference Papers Published


79. E. Nazaretski, **H. Yan**, K. Lauer, X. Huang, W. Xu, S. Kalbfleisch, H. Yan, L. Li, N. Bouet, J. Zhou, D. Shu, R. Conley, and Y. S. Chu. Nm-scale spatial resolution x-ray imaging with MLL nanofocusing optics: Instrumentational requirements and


Colloquia and Seminar Talks

1. H. Yan, “Research activities in Yan’s energy and environment Surface Lab (YeeS Lab)”, 2017 Faculty Retreat-IMRI, Lafayette, LA, October 26, 2017 (Invited talk).


11. **S.S. Massoud.** DNA Cleavage by Cobalt(II) and Copper(II) Complexes Derived From Pyridyl Based Ligands. Factors Affecting DNA Cleavage. Okayama University of Science, Okayama-Japan, October 11 (2012).

12. **S.S. Massoud.** DNA Cleavage by Cobalt(II) and Copper(II) Complexes Derived From Pyridyl Based Ligands. Factors Affecting DNA Cleavage, Shimane University, Matsue-Japan, October 13 (2012).

**Invited Conference and Workshop Talks**


3. **Y. Wang,** Controlled polymer synthesis towards higher level of perfection, invited by Prof. John Pojman, department of chemistry, Louisiana State University, USA, 2017.


5. **F.R. Louka, T. Malinski.** Assessing nano-sensors in determination of the degree of endothelial dysfunction and lifespan of the cardiovascular system. World Congress and Expo on Nanotechnology and Nanoengineering, Dubai, UAE, March 25-29, 2017 (Invited speaker, Chair of a session).


7. **H. Yan,** “Research activities in Yan’s energy and environment Surface Lab (YeeS Lab)”, 2017 Faculty Retreat-IMRI, Lafayette, LA, October 26, 2017 (Invited talk)

8. **W. Xu.** Function and Structure of CBP and NCOA. Beifang University of Nationality, Yinchuan, China, June 23 (2016).


10. **R.S. Srivastava.** Metal-catalyzed asymmetric C-H amination of alkenes. 27th International Conference on Organometallic Chemistry (ICOMC), Melbourne, Australia, July 17-22 (2016).

11. **S.S. Massoud,** Keynote lecturer at the International Conference of Polymer Chemistry, Atlanta, GA, USA, November 14-16 (2016).


18. M. Mikuriyaa, Y. Naka, **T. Junk, S.S. Massoud, F.A. Mautner.** Dinuclear Copper(II) Complexes of 2,6-Bis[bis(pyridine-2-ylmethyl)aminomethyl]-4-methylphenol. 2014 Symposium on Coordination Compounds as Molecular Magnetic Materials, Kwansei Gakuin University – School of Science and Technology, Sanda, Japan, October 11, p-42 (2014).


24. **W. Xu.** Biochemistry research and education. Beifang University of Nationality, Yinchuan, China, June 3-8 (2013).


Contributed Presentations

2017


2016


2015


13. G. Sanford, K.E. Walker, F.R. Fronczek, **T. Junk.** Organotellurium Chemistry: Synthesis and Characterization of Te, N-Containing Heterocycles. 71<sup>st</sup> Southwest Regional Meeting of the American Chemical Society, Memphis, TN, Nov 4-7 (2015).


2014


2013


27. **A.A. Gallo**, M. Dartez, F.A. Mautner, **S.S. Massoud**. Dinuclear Copper (II) Complexes of Imidazole-4,5-Dicarboxylate. Poster presentation, Southwest ACS meeting. Waco, TX, Nov. 16-19 (2013).

28. C. Dupont, **A.A. Gallo**, R. Bajpai, **T. Junk**. Biodiesel from alligator fat using supercritical solvent conditions. Poster presentation, Southwest ACS meeting. Waco, TX, Nov. 16-19 (2013).


32. **A.A. Gallo**, M.J. Dartez, F.A. Mautner, **S.S. Massoud**. Dinuclear Copper(II) Complexes of Imidazole-4,5-Dicarboxylate. GEN INORG SWRM 466. SWRM Regional ACS Meeting. Waco, TX, November 16-19 (2013).


35. **R.S. Srivastava.** Metal catalyzed group transfer reactions: Allylic amination vs. hetero Diels-Alder reaction of 1,3-butadienes. Smolenice, Slovakia, June 2-7 (2013).


**2012**


**Patents**

Journal Referees

- S. S. Massoud: *Crystals, 2016.*
Hui Yan: *Applied Catalysis*, 2015.
August A. Gallo: *Chemosphere*, 2015.
• S.S. Massoud: *Organometallic Chem.* 2012
• S.S. Massoud: *RSC Advances* 2012.
• R.S. Srivastava: *RSC Advances*, 2012.

**Other**

**Organized Special Sessions and Conferences**

- **Salah S. Massoud:** Chair of the *Coordination Chemistry Session* of the 249th *ACS National Meeting*, Denver, CO, March 23-26 (2015).
- **K. Knierim:** Vice-Chair of Mechanisms of Pitting Corrosion symposium at the NACE Corrosion 2013 conference, Orlando, FL, March (2013).
- **K. Knierim:** Chair of Mechanisms of Pitting Corrosion symposium at the NACE Corrosion 2012 conference. Salt Lake City, UT, March (2012).
- **S.S. Massoud:** Organizer, *Bioinorganic Sessions in SWRM-Regional Meeting*. Baton Rouge, November 4-7 (2012).
- **A.A. Gallo:** Chair of the chemistry division of the Louisiana Academy of Sciences, (2000-pres).

**Undergraduate – Notable Figures**

- S.Y. Osman, student, and winner of the American Chemical Society (ACS) Outstanding Undergraduate Analytical Chemist Award, supervisor **F.R. Louka** (2015).
- **A.A. Gallo,** supervised over 40 undergraduate students during the period 2008-2013 in Chemistry 362/462- undergraduate research.
- **S.S. Massoud,** supervised over 34 undergraduate students during the period 2008-2013 in Chemistry 362/462- undergraduate research.
- **F.R. Louka,** supervised 14 undergraduate students during the period 2008-2013 in Chemistry 362/462- undergraduate research.

**Awards and Honors**

- **F.R. Louka,** Outstanding Faulty of Universities of Louisiana System (2017).
• **H. Yan**, Achievement in Sponsored Research Award, University of Louisiana at Lafayette (2017).
• **F.R. Louka**, Outstanding Teaching Award, Ray Authement College of Sciences (2016).
• **F.R. Louka**, Marvin and Warren Boudreaux / BoRSF Professorship in Chemistry #4. (2015- present)
• **F.R. Louka**, Undergraduate Research Mentoring award 2014.
• **R.S. Srivastava**, Distinguished Professor Award, R.A.P. College of Sciences, 2013.
• **F.R. Louka**, Summer Research Award Summer, 2012.
• **W. Xu**, Boudreaux/BORSF Professorship, 2008-2014
• **R.S. Srivastava**, Boudreaux/BoR Distinguished Professor, 2001-present.

**Other Professional Activities**

2017

• **K.D. Knierim**, Secretary of Faculty Senate (2017).
• **K.D. Knierim**, Director of Louisiana Region 2 Science Olympiad (2017).
• **W. Xu** and **Y. Wang**, Purchase of an Incubator and a shaker for Biochemistry Laboratory Courses. STEP Funds of University of Louisiana at Lafayette, $8,768.30 (2017).
• **W. Xu** and **H. Yan**, Purchase of Fluorescence Gel Documentation for Chemistry Laboratory Courses. STEP Fund of University of Louisiana at Lafayette, $13,986 (2017).
• **H. Yan** and **F.R. Louka**, Bringing Rotary Evaporators for Sample Preparation to Analytical Chemistry Laboratory Courses. STEP Fund of University of Louisiana at Lafayette, $ 8700 (2017).
• **H. Yan**, Improving Precision and Accuracy in Analytical Chemistry Laboratory Courses. STEP Fund of University of Louisiana at Lafayette, $5,138 (2017).
• **A.A. Gallo**, Acquisition of a Polarimeter for Chemistry Laboratories, STEP Fund of University of Louisiana at Lafayette, $525 (2017).
2016

- **F.R. Louka.** Economical Micro-scale Vacuum Assisted DigiFILTER Assembly in Chemistry Labs. STEP Technology grant, $13,901.
- **F.R. Louka.** Economical Micro scale Equipment in Chemistry Labs. STEP Technology grant, $16,843.
- **W. Xu.** Structural and Functional Studies of Photosystem I to Enhance Undergraduate Education through Research. UL Undergraduate Research Mini-Grant, $2,000.
- **R.L. Simon (PI), A.A. Gallo.** Organic Chemistry Laboratory Equipment Grant. STEP Technology Fund, $3666.
- **R.L. Simon (PI).** Purchase of Chemistry Laboratory and Demonstration Equipment”, STEP Technology grant, $501.64
- **T. Junk, A.A. Gallo.** Purchase of an Attenuated Total Reflectance (ATR) Tool for Chemistry to Conduct Infrared Spectroscopy on Solids, UL STEP Fund, $5,602.
- **K.D. Kierim,** director of regional Science Olympiad.

2015

- **A.D. Leonard, C.S. Langley, J. Roy.** Achieving A Successful Online STEM Class. Presentation at Student Retention Summit, University of Louisiana at Lafayette. March 2015.
- **T. Junk,** Raman Spectroscopy in Chemistry Labs, UL STEP program, $10,655.
- **W. Xu,** judge for Junior Division of Biochemistry Louisiana Region VI Science and Engineering Fair.
- **W. Xu,** judge for High School Senior Division on Protein Modeling. Louisiana Region II 26th Annual Science Olympiad.
- **W. Xu,** Judge for the Graduate Student Research & Project Symposium. University of Louisiana at Lafayette.
- **F.R. Louka (PI).** Applying New Techniques in Analytical Chemistry Laboratories: UL Instructor Mini-grant, $700.

2014

- **W. Xu,** hosted Darren Jindal, a student from Stanford University, and two visiting professors from China: L. Huang and Y. Wei.
- **R.S. Srivastava,** served as Graduate faculty representative on the committee of C. U. Chukwunonye, M.S. candidate, Department of Physics.
- **A.D. Leonard,** classified the entire library of 2000+ questions from Smith, General, Organic, and Biological Chemistry, 2nd ed. for the McGraw Hill Connect Online Homework System by Bloom’s Taxonomy, difficulty level, topic, and subtopic.
• **F.R. Louka** (PI). Enhancement of Instrumental Analysis Laboratory Techniques: UL Instructor Mini-grant, $849 (2014).

• **A.A. Gallo**, served as Chemistry Section Chair of the Louisiana Academy of Sciences.

• **K. Knierim**, served as director of the regional Science Olympiad.

• **K. Knierim**, was elected secretary of the faculty senate.

2013

• **W. Xu**, Judge for the Graduate Student Research & Project Symposium, University of Louisiana at Lafayette, 2013.


• **E.R. Taylor**, interviewed by Jim Hummel, KATC TV for segment on ammonium nitrate and its hazards to communities, aired at 22:00 hr news, 4 Nov 2013.


• **A.A. Gallo**, visiting Professor, Beifang University of Nationalities, Yinchuan, China, May-June 2013.


2012


• **T. Junk, A.A. Gallo**, Step Grant Funding for Smart Classroom, 2012.

• **S.S. Massoud**, reviewed textbook: Inorganic Chemistry by Hagerman: Chapters 1, 2, 8, 9, 10 and 11, W.H. Freeman & Co, 2012.

• **S.S. Massoud**, editorial board of *Dataset Papers in Materials Science*, 2012-present


• **F.R. Louka**, upgraded the Analytical Lab, supervised procurement, installation, and methods development for new gas chromatograph and atomic absorption spectrophotometer funded by College, 2012.


• **W. Xu**, judge for High School Senior Division on Protein Modeling. Louisiana Region Ii 23nd and 24th Annual Science Olympiad, 2011-2012.
Offices Held and Professional Memberships

- **F. R. Louka**, member, American Chemical Society (2007-Pres.)
- **S.S. Massoud**, member, American Chemical Society (2001-Pres.)
- **R.S. Perkins**, member, American Chemical Society (1967-pres.)

Graduate Student Production

Graduate

- A.K. Visvesvaraya, thesis evaluation. Technological University, Belagavi, Karnataka, India, 2015, **R.S. Srivastava**.
- R. Hill, Ethanol-Adenylyl Cyclase Pathway. Ph.D., LSU, 2015, Member of Committee: **W. Xu**.
- S. Singh, Title of the Final Defense: Spatial relationships based protein structure representation for alignment free comparison, local structural motif discovery and hierarchical classification, Member of Committee, 2015, **W. Xu**.
- A. Kascak, Ph.D. student, "Determining the Interactions Between the Ghost shrimp Lepidophthalmus louisianensis and Crude Oil." Member of committee, 2015, **F.R. Louka**.
• S. Sovine. Heterogeneous catalysis of glycerol to propylene glycol over copper chromite. Member of committee: MS, 2012, A.A. Gallo.

External Funding

2017
• Y. Wang. Controlled Polymer Synthesis Towards the Precision of Biomacromolecules, $145,500, BoRSF RCS (2017-2020).

2016

2015

2014
• W. Xu (PI), A.A. Gallo (Co-PI), R.S. Perkins (Co-PI), T. Junk (Co-PI), R.S. Srivastava (Co-PI), R. Bajpai (Co-PI). Integration of a Florescence spectrometer into chemistry and biochemistry. BoR- ENH, $32,000, 2014.


**2013**


**2012**
