Chemistry & Biochemistry

Graduate Programs

UNIVERSITY OF
TEXAS
ARLINGTON

Welcome

Welcome to the Department of Chemistry and Biochemistry at UTA. We have a vibrant department with 21 tenured and tenure-track faculty advising over 90 full-time graduate students, 20 or more post-doctoral fellows and visiting scientists, and a host of undergraduates getting their first exposure to scientific research at the highest-level. We have active and extramurally funded research programs in analytical, organic, biochemistry, physical, and inorganic chemistry, with most faculty having research programs which cross-over traditional divisional boundaries.

Currently we have research programs involving such varied and important topics as building analytical instrumentation for the Mars lander, investigating the environmental consequences of fracking on groundwater pollution, sustainable routes to olefin-paraffin separation, developing practical solar CO_2 to liquid fuels technology, anti-cancer drug discovery and development, designing and testing earth friendly catalysts, developing a better understanding of enzyme kinetics and function, especially those incorporating transition metals in their active sites, total synthesis of complex natural molecules, and enhanced methods for chiral separations and quantification.

UTA students gain a competitive edge as top-tier faculty and industry employees teach them to use state-of-the-art instruments.

I invite you to look over the individual faculty members' web pages to get a better idea of the range of research underway in the department and to identify faculty and research programs which may pique your interest! Our students enjoy working closely with the faculty in a growing department that retains a small department, collegial atmosphere that fosters active learning.

Not only are we proud of our faculty, undergraduate, and graduate students, the department enjoys state-of-the art laboratories and instrumentation including over $20M in modern instrumentation as part of the Shimadzu Institute for Research Technologies, plus a regular suite of high field NMRs, X-ray diffraction, electroanalytical, and surface analysis equipment.

An industrial internship is a unique component of our doctoral degree program at UT Arlington. In fact, it is one of the more popular components of our program and distinguishes us from most other doctoral chemistry programs, both locally and nationally. You will spend 3 to 4 months interning at companies such as Merck, Alcon Labs, SABIC, GlaskoSmithKline, Bayer, Exxon-Mobil, to name some past participants. This internship is often invaluable for our students in subsequently garnering research positions at these same and related companies.

For example, our past graduate students and postdoctoral fellows have found employment at the following well-known companies: Abbvie, Proctor and Gamble, GlaskoSmithKline, Shimadzu Scientific Instruments, Inc., Apollo Path, LLC, Genentech, Eli Lilly and Company, SABIC (formerly GE Plastics), Armstrong Forensic labs, Sid Richardson Carbon and Energy Co., Mapei America , plus many other companies and academic institutions. Many of our undergraduate majors have gone on to attend some of the finest graduate programs and medical schools in the country, attesting to the quality of education they received in this department.

Whether you are interested in Chemistry and Biochemistry as an undergraduate major or for graduate school, we hope you will consider us for your education and training. We believe ourselves to be one of the best undergraduate and graduate chemistry programs in the North Texas region and are aiming to be among the best nationally.
We are also in the geographic center of the Dallas-Fort Worth Metroplex, 5 min from Cowboys and Texas Rangers stadia, 20 min from DFW Airport, and 30 min to either Dallas or Fort Worth. Living costs in Arlington are relatively low and we offer competitive scholarships with partial tuition remission for qualifying graduate students.

Please take some time to peruse our departmental website and to contact us at Chemgrad@uta.edu to explore attending UT Arlington for your education.

Sincerely,

Rasika Dias

Department Chair
Distinguished University Professor

Graduate Programs

- Ph.D. in Chemistry
- M.S. in Chemistry
- Interdisciplinary M.S. and Ph.D. Program
- Materials Science and Engineering Ph.D.
- Environmental and Earth Sciences

100% Success rate obtaining employment

- Abbvie
- BASF
- Bristol Myers Squibb
- ExxonMobil
- GeneScript
- Gilead Sciences
- Glaxo SmithKline (GSK)
- Hexion
- Siemens
- U.S. Food & Drug Administration (FDA)

Overview

The Department of has comprehensive research and training activities in many areas of chemistry and biochemistry. State-of-the-art research facilities, excellent faculty, and support staff, combined with generous external funding, allow for cutting edge studies in a variety of disciplines.

Several advanced degree programs are offered but the most innovative is the PhD in chemistry which includes an industrial internship. The program is ideally suited for students interested in a career in chemical, pharmaceutical, biotech industries, government laboratories, or in academics.

The steady growth of the program, has led to development of new laboratory spaces and new buildings. The University of Texas at Arlington's Chemistry and Biochemistry Department currently includes 21 full-time research active faculty members. Each year averages approximately two dozen postdoctoral fellows and visiting faculty. The Department currently has over $7 million per year in external grant support.

Department Core Facilities

Nuclear magnetic resonance (NMR) facilities are crucial to chemical research and our department is well equipped with instrumentation for student use. The NMR Facility houses two high-field superconducting magnet FT-NMR instruments. The JOEL ECX300 (300 MHz) can handle liquid and solid samples. Liquid samples that require greater dispersion and sensitivity can use the JEOL ECA500 (500 MHz) for analysis. Each instrument is equipped with auto tune 5mm probes for collection of 1H, 19F, and 31P through 15N NMR data. Both instruments can utilize pulsed field gradients and have a working temperature range of -80 to 130 °C allowing for characterization of dynamic processes.

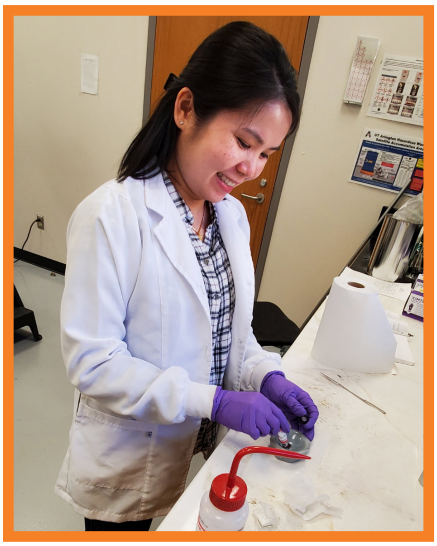
For those students interested in characterizing samples containing free radicals or paramagnetic materials, the department has a Bruker EMXplus X-band (9 GHz) EPR spectrometer equipped with a with a bimodal resonator (Bruker ER4116DM) for collection of data using microwave field polarization either transverse or parallel to the applied magnetic field. A double rectangular resonator (ER 4105DR) and high sensitivity X-band (ER 4102ST) are also available depending on experimental needs.

When I was applying for jobs, what set me apart and made me competitive was my hands-on experience with top-notch scientific instruments used in the industry. The UTA and Shimadzu partnership not only provided me with a wide array of instruments to work with, but also valuable training and connection to individuals within the industry. UTA helped me to find my dream job - before I graduated.

- Evelyn H. Wang, Application Scientist at Shimadzu Scientific Instruments

Low temperature measurements can be made using either the Oxford ESR 900 (> 4 K) or ultra-low Oxford ESR 910 (> 2. 2 K) liquid helium cyrostats. In 2011 the Department installed a LHeP18 liquid helium recovery plant to offset the rapidly escalating cost and limited availability of liquid helium.

One of our important structural resources is our X-ray diffraction (XRD) facilities. This instrumentation is an essential tool for the structural analysis of synthetic organic and inorganic compounds and solid materials. We currently house (3) XRD instruments for student research: The Bruker D8 QUEST fixed CHI XRD equipped with a PHOTON II 7 area detector and TRIUMPH monochromator and the Bruker SMART Apex II XRD with MONOCAP glass capillary optics are both equipped with an Oxford Cryostream 700. Additionally, the Department also has a Bruker SMART X2S automated bench-top X-ray diffractometer equipped with a BREEZE air-cooled 4K CCD detector. Analysis of XRD data can be performed using the Bruker APEX4 software suite.



For elemental analysis of solid materials (2) X-Ray Photoelectron Spectrometers (XPS) equipped with a sputter gun are available for use. Our PHI 5300 XPS is essentially the 'work-horse' instrument and is equipped a monochromatic source. State of the art electroanalytical instrumentation allows for characterization of materials for energy conversion and storage.

The Department houses a variety of research spectrophotometers including circular dichroism (CD), fluorescence, dynamic light scattering (DLS), UV-Visible, UV-Vis-NIR, FT-IR and Raman.

The Shimadzu Center for Advanced Analytical Chemistry

The Department houses one of the world's finest collections of equipment and instrumentation. The Shimadzu Center for Advanced Analytical Chemistry provides researchers with superb capability for detection and quantification of chemical components. The ultramodern instrumentation suite includes gas and liquid chromatograph-mass spectrometers, matrix-assisted laser desorption/ionization-mass spectrometers, and a variety of spectrophotometers. The center meets the needs of a wide variety of fields for the detection of small molecules, trace elements, proteins, lipids, and polymers. The laboratory was established in 2012 due to the generous support of Shimadzu Scientific Instruments and the University of Texas at Arlington. The $6 million mass spectrometry and analytical chemistry research center includes a large number of mass spectrometers, supporting peripherals, and other instrumentation.

The Shimadzu Center for Materials Genome is a state-of-the-art facility enabling efficient materials characterization, diagnostics, and prognosis methods relying on three-dimensional imaging and performance prediction based on accurate computational tools.

The Center for Nanotechnology Research is a preeminent research center of its kind; with its class 100 cleanroom and superior instrument capabilities the center has application to all science and engineering disciplines in micrometer and nanometer scale.

Your only limitation is your mind. We have all the tools and all the equipment you need. Anytime I want to do something, I can because I have the instrument to do it and that is what research is about.

-Ines Santos,
Post-Doctorate Fellow

"You can't go anywhere else in the country and get an experience like you can at UT Arlington with the Shimadzu partnership. We're in the business to prepare students to get jobs and we'll take every advantage that we can."

- Kevin Schug,
Shimadzu Distinguished Professor
of Analytical Chemistry

Faculty

Dr. Daniel W. Armstrong
sec4dwa@uta.edu
Molecular and Chiral Recognition, Separation Science, Colloid Chemistry, Ionic Liquids, Enantiomeric and Microbial Separation

Dr. Joe Buonomo
joseph.buonomo@uta.edu
Bioorganic Chemistry, Medicinal Chemistry, Chemical Bacteriology, Chemoproteomics

Dr. Colin G. Cameron
colin.cameron@uta.edu
Medicinal Inorganic Chemistry, Photophysics and Photochemistry, Cancer Drug Discovery, Photodynamic Therapy

Dr. Saiful M. Chowdhury
schowd@uta.edu
Mass Spectrometry Method Development in Proteome Research, Protein-protein and Protein-ligand Interaction and Post-translational Modifications

Dr. William Cleaver
cleaver@uta.edu
Instructional Chemistry and Organo-metallic Chemistry

Dr. Joshua Crowell
joshua.crowell@uta.edu
Instructional Chemistry, Physical-Inorganic Chemistry

Dr. Purnendu K. Dasgupta
dasgupta@uta.edu
Atmospheric Chemistry, Trace Analysis, Thin Film Flow Devices Process Analyzersand Perchlorate in the Environment

Dr. Rasika Dias
dias@uta.edu
Susatinable Technology, Olefin-paraffin Separation, Chemistry of Gases, Fluorinated-anions, Homogeneous Catalysis, Luminescent Materials, Conducting Polymers and Nanotechnology

Dr. He Dong
he.dong@uta.edu
Inorganic Colloidal Nanoparticles, Nanomaterials, Hydrogel Biomaterials, Supramolecular Assemblies

Dr. Frank W. Foss, Jr.
ffoss@uta.edu
Organic Synthesis, Medical Chemistry, Biomimetic Catalysis and Regulation of Biomolecular Interactions

Dr. Jongyun Heo
jheo@uta.edu
Redox Regulation of Small GTPases, Phosphatases and Kinases, Intervention of Anti-cancer Drugs

Dr. Junha Jeon
jjeon@uta.edu
Tandem Reaction Design and Catalytic Processes, Medicinal and Biological Chemistry and Asymmetric Synthesis

Dr. Kayunta Johnson-Winters
kayunta@uta.edu
Enzyme Cofactors (F420), Structure Determination, Enzyme Kinetics and Reaction Intermediates

Dr. Morteza Khaledi
khaledi@uta.edu
Extraction, Enrichment and Characterization of Membrane Proteins; Two-dimensional Liquid Chromatography, Nonaqueous CE

Dr. Peter M. Kroll
pkroll@uta.edu
Computational Chemistry, Nanostructured Materials, Inorganic Networks and High Pressure Chemistry

Dr. Carl Lovely
lovely@uta.edu
Synthetic Methodology, Heterocyclic Chemistry, Natural Product total Synthesis

Dr. Robin Macaluso
robin.macaluso@uta.edu
Crystal Growth of Intermatallics, Synthesis of Novel Oxynitrides and Neutron and X-ray Scattering

Dr. Frederick M. MacDonnell
macdonn@uta.edu
Metal-Directed Chiral and Supramolecular Coordination Chemistry, Photochemistry, Bioinorganic

Dr. Subhrangsu S. Mandal
smandal@uta.edu
Eukaryotic Transcription and Gene Expression in Humans, Chromatin Structure-Function, Histone Modification, Epigenetics and Cancer

Dr. Sherri A. McFarland
sherri.mcfarland@uta.edu
Medicinal Inorganic Chemistry, Photophysics and Photochemistry, Chemical Biology and Photomedicine, Cancer Drug Discovery

Dr. Kwangho Nam
kwangho.nam@uta.edu
Computational Biochemistry, Molecular Biophysics and Molecular Simulations

Dr. Krishnan Rajeshwar
rajeshwar@uta.edu
Semiconductor Electrochemistry and Photocatalysis, Conducting Oxides and Polymers and Environmental Chemistry

Dr. Jimmy Rogers
jimrogers@uta.edu
Physical Chemistry, Computational Studies of Potential Energy Surfaces in Organometallic Complexes

Dr. Kevin A. Schug
kschug@uta.edu
Separations, Mass Spectrometry, Electrospray Ionization, Molecular Recognition, Natural Products Drug Discovery and Trace Analysis

Dr. C. Phillip Shelor
charles.shelor@uta.edu
Poly- and Per-fluoroalkyl substances (PFAS) in the environment, Trace Analysis, Automated Analyzers, Liquid Chromatography

Dr. Ranny So
byungran.so@uta.edu
Biochemistry, RNA Biology, RNA-Protein Complexes

Dr. Seiichiro Tanizaki
tanizaki@uta.edu
Instructional Chemistry, On-Line Teaching Materials, Computational Chemistry

Daniel W. Armstrong

Robert A. Welch Professor

B.S. 1972, Interdepartmental Science and Math, Washington & Lee University, Lexington, VA

M.S. 1974, Oceanography, Texas A&M University, College Station, TX

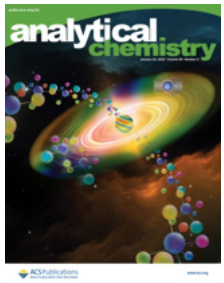
Ph.D. 1977, Chemistry, Texas A&M University, College Station, TX

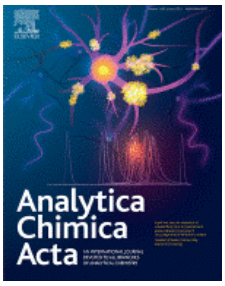
Research

- Ionic Liquids
- Chromatography
- Mass Spectrometry
- Molecular and Chiral Recognition
- Separation Science
- D-Amino Acids in Biological Systems

Awards

- Analytical Scientist Power List Top 100 (2021)
- LCGC Lifetime Achievement Award (2020)
- Power List Top 10 Analytical Scientist in the World (2019)
- UTA Excellence in Doctoral Mentoring (2018-2019)
- Doctor Honoris Causa Degree, Slovak University of Technology (2018)
- Dow Chemical WesTEC Award for "Distinguished Leader in Science and Technology" (2018)
- Separations Power List Top 10 and Mentor Power List Top 10
- Analytical Scientists Power List Top 10 (2015)
- W.T. Doherty Research & Service Award (2015)
- ACS Award for Separation Science & Technology (2014)
- Chirality Medal (2003)





Selected Publications

"Enhanced Carboxypeptidase Efficacies and Differentiation of Peptide Epimers" Sung, Y.; Putman, J.; Du, S.; Armstrong, D.W.; Anal. Biochem. 642, 114451 (**2022**).

"An Examination of the Effects of Water on Normal Phase Enantioseparations" Aslani, S.; Wahab, M.F.; Kenari, M.E.; Berthod, A.; Armstrong, D.W. Anal. Chim. Acta 1200, 339608 (**2022**).

"Enhancing Sensitivity for High-Selectivity Gas Chromatography-Molecular Rotational Resonance Spectroscopy" Wahab, M.F.; Aslani, S.; Mikhonin, A.V.; Neill, J.L.; Armstrong, D.W. Anal. Chem., 93, 15525-15533 (**2021**)

"Production of Both L- and D-N-Acyl-Homoserine Lactones by Burkholderia Cepacia and Vibrio Fischeri" Portillo, A.E.; Readel, E.; Armstrong, D.W. MicrobiologyOpen, 10, 6 (**2021**) mbo3.1242.

"Evaluation of Gas Chromatography for the Separation of a Broad Range of Isotopic Compounds" Thakur, N.; Aslani, S.; Armstrong, D.W. Anal. Chim. Acta 1165 (**2021**) 338490.

"Headspace Study of Chiral Interconversion of N-Acetyl-Homocysteine Thiolactones" Simon, P.; Krupcik, J.; Portillo, A.E.; Majek, P.; Spanik, I.; Armstrong, D.W. J. Chromatogr. A 1653 (**2021**) 4623781

Research

Organic, Bioorganic, and Medicinal Chemistry

- Bioorthogonal Chemistry
- Bioconjugation
- Metabolic Engineering
- Chemical Bacteriology
- Medicinal Chemistry
- Chemoproteomics

Awards

- University of Texas System Rising STARS
- ChemBioChem Early-Career Investigator in Chemical Translational Biology
- NIH Ruth L. Kirschstein F32 Postdoctoral Fellow
- UMN Dissertation Award; NSF Graduate Research Fellow

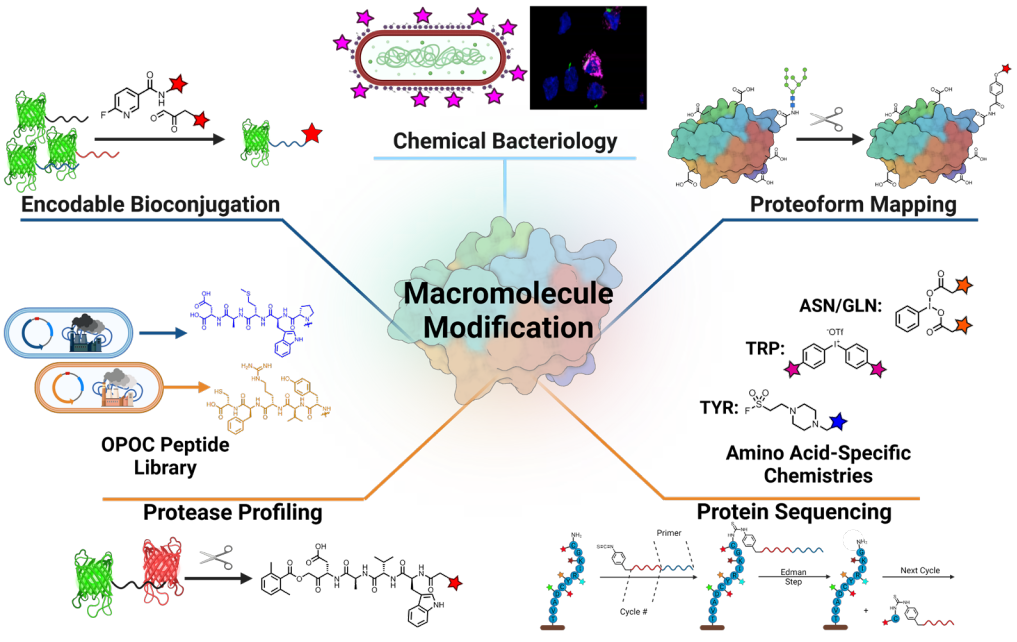
Selected Publications

Cole, M. S.; Howe, M. D.; Buonomo, J. A.; Sharma, S.; Lamont, E. A.; Brody, S. I.; Mishra, N. K.; Minato, Y.; Thiede, J. M.; Baughn, A. D.*; Aldrich, C. C.* "Cephem-Pyrazinoic Acid Conjugates: Circumventing Resistance in Mycobacterium tuberculosis," Chem. Eur. J. **2022**, e202200995 (DOI: 10.1002/chem.202200995)

Cambier, C. J.; Banik, S. M.; Buonomo, J. A.; Bertozzi, C. R.* "Spreading of a Mycobacterial Cell-Surface Lipid into Host Epithelial Membranes Promotes Infectivity" eLife, **2020**, 9, e60648 (DOI: 10.7554/eLife.60648)

Buonomo, J. A.; Cole, M. S.; Eiden, C. G.; Aldrich, C. C.* "1,3-Diphenyl-Disiloxane Enables Additive-Free Redox Recycling Reactions and Catalysis with Triphenylphosphine," Synthesis, **2020**, 52, 3583-3594 (DOI: 10.1055/a-1709-3426)

Buonomo, J. A.; Aldrich, C. C.* "Mitsunobu Reactions without the Waste: a Catalytic Phosphine and Fully Catalytic System," Angew. Chem. Int. Ed. **2015**, 54, 13041-13044 (DOI: 10.1002/anie.201506263)



Joe Buonomo

Assistant Professor

B.S. Chemistry,
University of Rochester,
Rochester, NY
Prof. D. Weix

Ph.D. 2018, Medicinal Chemistry,
University of Minnesota-Twin Cities,
Minneapolis, MN
Prof. C. Aldrich

Post-Doctoral Research,
2018-2022, Stanford University
Prof. C. Bertozzi

Colin G. Cameron

Professor of Research

B.Sc. 1992, Chemistry, University of Ottawa

Ph.D. 2000, Chemistry, Memorial University of Newfoundland

Post-Doctoral Research, 2002, California Institute of Technology

Member:
American Chemical Society;
National Academy of Inventors

Research

Our group's research focuses on the development of light-activated compounds to treat cancer and infection, emphasizing clinical translation and commercialization. The excited state energetics of our compounds determine much of the photobiological response; we use the techniques of steady-state and time-resolved spectroscopy plus electrochemistry to understand how these compounds interact with light and how this in turn can be tuned for optimal performance in diseased tissue.

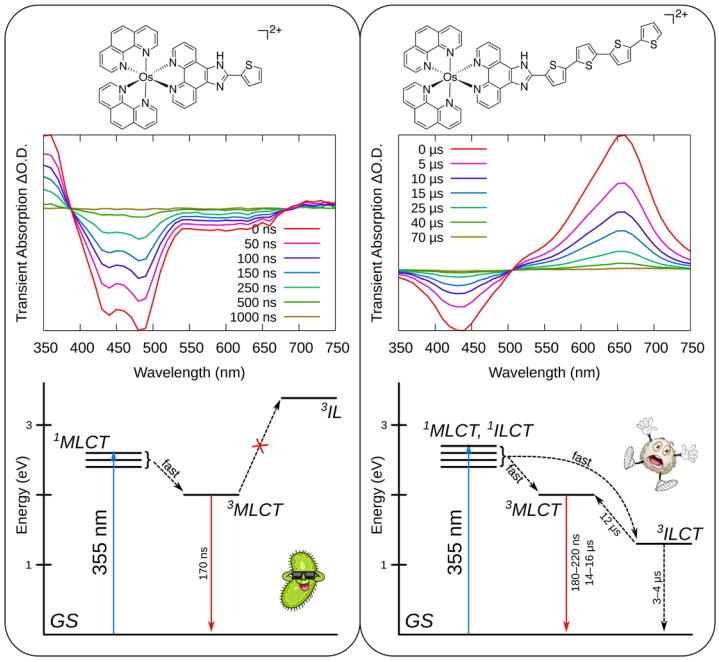
Selected Publications

Roque III, J. A.; Cole, H. D.; Barrett, P. C.; Lifshits, L. M.; Hodges, R. O.; Kim, S.; Deep, G.; Francés-Monerris, A.; Alberto, M. E.; Cameron, C. G.; McFarland, S. A. Intraligand Excited States Turn a Ruthenium Oligothiophene Complex into a Light-Triggered Ubertoxin with Anticancer Effects in Extreme Hypoxia. J. Am. Chem. Soc. **2022**, 144, 8317–8336.

Roque, J. A.; Barrett, P. C.; Cole, H. D.; Lifshits, L. M.; Bradner, E.; Shi, G.; von Dohlen, D.; Kim, S.; Russo, N.; Deep, G.; Cameron, C. G.; Alberto, M. E.; McFarland, S. A. Os(II) Oligothienyl Complexes as a Hypoxia-Active Photosensitizer Class for Photodynamic Therapy. Inorg. Chem. **2020**, 59 (22), 16341–16360.

Roque III, J. A.; Barrett, P. C.; Cole, H. D.; Lifshits, L. M.; Shi, G.; Monro, S.; von Dohlen, D.; Kim, S.; Russo, N.; Deep, G.; Cameron, C. G.; Alberto, M. E.; McFarland, S. A. Breaking the Barrier: An Osmium Photosensitizer with Unprecedented Hypoxic Phototoxicity for Real World Photodynamic Therapy. Chem. Sci. **2020**, 11, 9784–9806.

Monro, S.; Colón, K. L.; Yin, H.; Roque, J.; Konda, P.; Gujar, S.; Thummel, R. P.; Lilge, L.; Cameron, C. G.; McFarland, S. A. Transition Metal Complexes and Photodynamic Therapy from a Tumor-Centered Approach: Challenges, Opportunities, and Highlights from the Development of TLD1433. Chem. Rev. **2019**, 119 (2), 797–828.



Research

Proteomics and bio-analytical mass spectrometry reserach:

- Global and targeted discovery of protein-protein/protein ligand interactions by chemical cross-linking and mass spectrometry
- Identification and quantitative characterization of protein posttranslational modifications (PTMs)
- Elucidation of protein structures by mass spectrometry.
- Quantitative proteomics (bio-markers discovery)
- Host-defense interactome (toll-like receptors signaling) caused by environmental and external stimulus

Awards

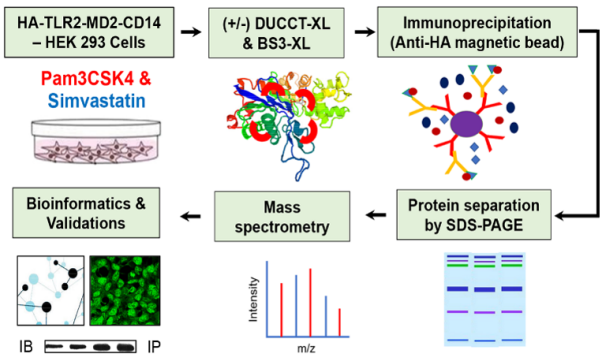
- Fellow Award for Research Excellence (FARE), National Institute of Health (2011)
- Journal of American Society for Mass Spectrometry Emerging Investigator (2017)

Selected Publications

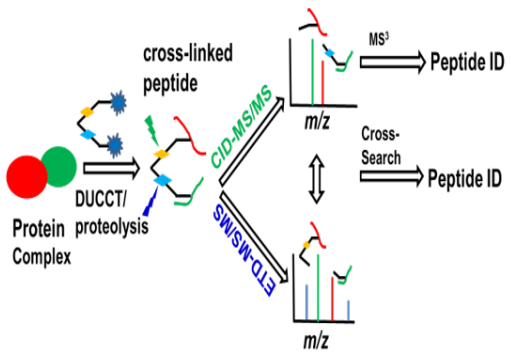
Fang, Z.; Wanigasekara, M. S. K.; Yepremyan, A.; Lam, B.; Thapa, P.; Foss, F. W., Jr.; Chowdhury, S. M*. Mass Spectrometry-Cleavable Protein N-Terminal Tagging Strategy for System-Level Protease Activity Profiling. Journal of the American Society for Mass Spectrometry **2022**, 33, 189-197.

Fang, Z.; Chowdhury, S. M*. Dual-Stage Neutral Loss Tandem Mass Spectrometric Strategy for Confident Identification of Protein Prenylation. Analytical chemistry **2021,** 93, 13169-13176.

Kamal, A. H. M.; Aloor, J. J.; Fessler, M. B.; Chowdhury, S. M*. Cross-linking Proteomics Indicates Effects of Simvastatin on the TLR2 interactome and Reveals ACTR1A as a Novel Regulator of the TLR2 Signal Cascade. Molecular & cellular proteomics **2019**, 18(9), 1732-1744.



Affinity Purification Spacer Arm Controlled Cross-linking Proteomics (AP-SPAC-XL-MS)



DUal Cleavable Crosslinking Technology (DUCCT)

Saiful M. Chowdhury

Associate Professor

B.Sc (Honors) and M. Sc Applied Chemistry and Chemical Technology, University of Dhaka, Dhaka, Bangladesh

M.S. 2001, Chemistry, Florida International University, FL

Ph.D. 2006, Chemistry, Washington State University, Pullman, WA

Post-Doctoral Research, 2006-2009, Pacific Northwest National Laboratory, Richland, WA

Research Fellow 2009-2012, NIEHS, National Institute of Health (NIH)

Purnendu K. (Sandy) Dasgupta

Hamish Small Chair Professor

Ph.D. 1977, Analytical Chemistry, Louisiana State University, Baton Rouge

Aerosol Research Chemist: University of California, Davis 1978-1981.

Paul W. Horn Professor: Department of Chemistry and Biochemistry, Texas Tech University, Lubbock, Texas, 1981-2006.

Member: American Chemical Society, IEEE Fellow, Phi Lambda Upsilon, Phi Kappa Phi, Phi Beta Delta, Sigma Xi

Research

- Extraterrestrial Platforms: An Ion Chromatograph for Mars, Enceladus...
- Nonlinear spectrometry: Cavity Enhanced systems for high sensitivity high dynamic range measurements – Measuring absorption, not transmission
- Miniature detectors for chromatography and other applications: New electrochemical, optical and conductivity detectors
- A new look at pH and other potentiometric measurements: breaking the barrier
- Representative talk: https://docs.google.com/presentation/d/10cScbjO2NiJFsDB6XUD1l55jPzhCNiqX/edit?usp=sharing&ouid=110524896292696208628&rtpof=true&sd=true

Awards

- American Chemical Society (ACS) Award in Chemical Instrumentation, 2018
- Texas Academy of Science, Texas Distinguished Scientist Award, 2018
- Talanta Gold Medal Award in Analytical Chemistry, 2017
- Giorgio Nota Medal for Open Tubular Liquid Chromatography, 2017
- Eastern Analytical Symposium. Fields Award in Analytical Chemistry, 2016
- Metroplex Technology Business Council. Tech Titans Technology Inventor Award, 2016
- Elected honorary member, Japan Society for Analytical Chemistry, 2015
- ACS Award in Chemical Education, 2015

Selected Publications

Geometric characterization of polymeric capillaries. Yousef, E. N. †; Dasgupta, P. K.; Horn, S. A. §; Shelor, C. P.; Roy, S. Anal Chim. Acta **2022**, (in press)

Automated Programmable Generation of Broad pH Range Volatile Ionic Eluents for Liquid Chromatography. Shelor, C. P.; Yoshikawa, K.; Dasgupta, P. K. Anal. Chem., **2021**, 93, 5442-5450.

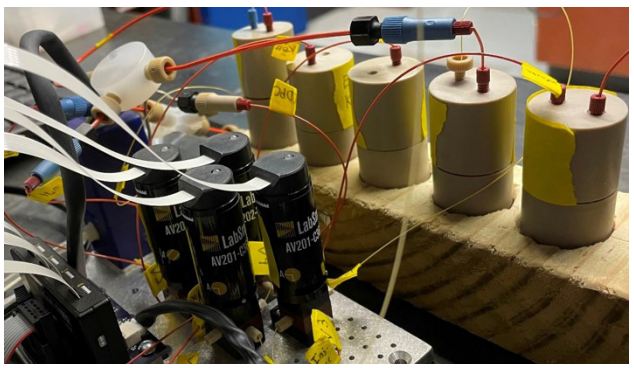
Shape-based Peak Identity Confirmation in Liquid Chromatography. Kadjo, A. F.; Dasgupta, P. K.; Srinivasan, K. Anal. Chem., **2021**, 93, 3848-3856.

Moldable Strong Cation Exchange Polymer and Microchannel Fabrication. Maleki, F.†; Dasgupta, P. K. Anal. Chem., **2020**, 92, 13,378-13,386.

Optimum Cell Pathlength or Volume for Absorbance Detection in Liquid Chromatography. Transforming Longer Cell Results to Virtual Shorter Cells. Kadjo, A. F.†; Dasgupta, P. K.; Shelor, C. P. Anal. Chem., **2020**, 92, 6391-6400.

Innards of our open tubular capillary ion chromatograph 18x14x12 cm, 2 kg 2W

We foster builders, not users!

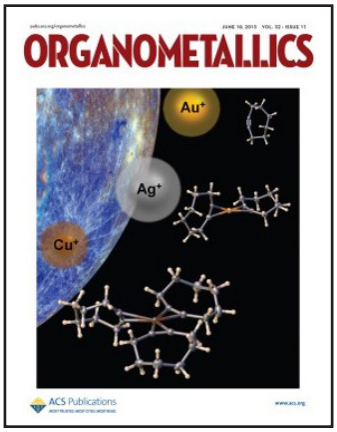


Research

- Sustainable separation and utilization of gases
- Catalysis of earth-friendly metals
- Luminescent Materials and sensors
- Weakly coordinating, poly-fluorinated ion chemistry

Awards:

- Jenkins Garrett Professorship (2020-2023)
- UTA Academy of Distinguished Scholars (2012)
- ACS Southwest Regional Award (2009)
- Wilfred T. Doherty Award of the Dallas-Fort Worth Section of the American Chemical Society (2009)
- Advisory Board of Dalton Transactions
- (2009-), Polyhedron (2021-), Inorganic Chemistry (2007-2009)
- UTA Outstanding Research Achievement Award (2007)
- Outstanding Research Achievement, UTA College of Science (2006)
- The Robert A. Welch Foundation Lectureship (2004-2005)
- UTA Research Excellence Award (2005, 2006, 2007, 2008)
- UTA Outstanding Academic Advisor (2003)
- Outstanding Teacher, UTA College of Science (2000-2001)



Selected Publications

"Overcoming Fundamental Limitations in Adsorbent Design: Alkene Adsorption by Non-porous Copper(I) Complexes", D. Parasar, A. H. Elashkar, A. A. Yakovenko, N. B. Jayaratna, B. L. Edwards, S. G. Telfer, H. V. R. Dias, M. G. Cowan, Angew. Chem. Int. Ed., **2020**, 59, 21001-21006.

"Gold(I) ethylene complexes supported by electron-rich scorpionates", J. Wu, A. Noonikara-Poyil, A. Muñoz-Castro, H. V. R. Dias, Chem. Commun., **2021**, 57, 978-981.

"A molecular compound for highly selective purification of ethylene", A. Noonikara-Poyil, H. Cui, A. A. Yakovenko, P. W. Stephens, R.-B. Lin, B. Wang, B. Chen, H. V. R. Dias, Angew. Chem. Int. Ed., **2021**, 60, 21784-27188.

"When SF5 outplays CF3: Effects of pentafluorosulfanyl decorated scorpionates on copper", A. Noonikara-Poyil, A. Muños-Castro, A. Boretskyi, P. K. Mykhailiuk, H. V. R. Dias, Chem. Sci., **2021**, 12, 14618-14623.

"Isolable acetylene complexes of copper and silver", A. Noonikara-Poyil, S. G. Ridlen, I. Fernández, H. V. R. Dias, Chem. Sci., **2022**, 13, 7190-7203

Rasika Dias

Distinguished University Professor

Department Chair

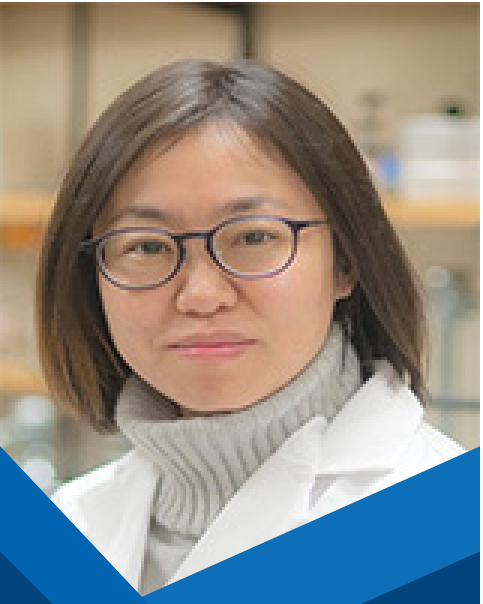
B.Sc. (Honors) 1983, University of Peradeniya, Sri Lanka

Ph.D. 1988, University of California, Davis, CA

Post-Doctoral Research, 1989 University of California, Davis, CA

1990-1992 DuPont Central Research, DE

Financial Support:
The Welch Foundation; NSF; American Floral Endowment



He Dong

Associate Professor

B.S. 1999, Chemistry,
Tsinghua University

M.S. 2002, Analytical Chemistry,
Tsinghua University

Ph.D. 2008 Organic Chemistry,
Rice University

Financial Support: National Science Foundation

Research

- Supramolecular chemistry
- Protein mimetics design and synthesis
- Antimicrobial peptides and cell penetrating peptides
- Nanomaterials for drug and gene delivery
- Hydrogel biomaterials and tissue engineering

Awards

- Journal of Materials Chemistry B Emerging Investigator, 2018
- National Science Foundation Early Career Award, 2017
- Chinese Association for Biomaterials Young Investigator Award, 2017

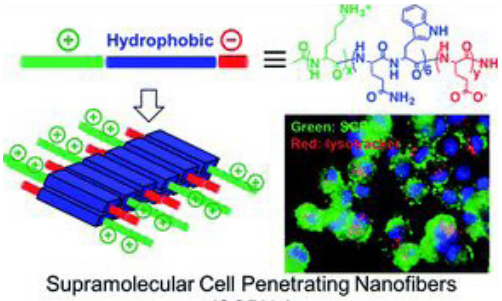
Selected Publications

Weike Chen, Shan Hazoor, Ryan Madigan, Ashley A. Adones, Uday K. Chintapula, Kytai T. Nguyen, Liping Tang, Frank W. Foss Jr., He Dong*, "Alkaline-Responsive Polydiacetylene-Peptide Hydrogel for pH-Sensing and On-Demand Antimicrobial Release", Materials Today Advances, **2022**, in press. (Special Issue of Nanomaterials and Nanomedicine)

Su Yang, Yan Chang, Shan Hazoor, Chad A. Brautigam, Frank W. Foss Jr., Zui Pan, He Dong*, "Molecular Design of Supramolecular Ionic Peptides with Cell-Selective Membrane Activity", ChemBioChem, **2021**, 22, 3164-3168.

Weike Chen, Shuxin Li, John Lang, Yan Chang, Zui Pan, Peter Kroll, Xiankai Sun, Liping Tang, He Dong*, "Combined Tumor Environment Triggered Self-Assembling Peptide Nanofibers and Inducible Multivalent Ligand Display for Cancer Cell Targeting with Enhanced Sensitivity and Specificity", Small, **2020**, 16, 2002780.

Su Yang, He Dong*, "Modular Design and Self-assembly of Multi-domain Peptides Towards Supramolecular Cell Penetrating Nanofibers", RSC Advances, **2020**, 10, 29469-29474. (Feature Interview; 2020 RSC Advances HOT Article; Featured as an outstanding advance of Materials Chemistry in the Year in Review in RSC Advances)



Supramolecular Cell Penetrating Nanofibers (SCPNs)

Weike Chen, Su Yang, Shuxin Li, John C. Lang, Chuanbin Mao, Peter Kroll, Liping Tang, He Dong*, "Self-Assembled Peptide Nanofibers Display Natural Antimicrobial Peptides to Selectively Kill Bacteria without Compromising Cytocompatibility", ACS Applied Materials and Interfaces, **2019**, 11, 28681-28689.

Su Yang, Dawei Xu, He Dong*, "Design and Fabrication of Reduction-Sensitive Cell Penetrating Nanofibers For Enhanced Drug Efficacy", Journal of Materials Chemistry B, 2018, in press. (2018 Emerging Investigator Themed Issue)
Linhai Jiang, Su Yang, Reidar Lund, He Dong*, "Shape-specific Nanostructured Protein Mimics From de novo Designed Chimeric Peptides", Biomaterials Science, **2018**, 6, 272-279. (Front Cover)

Research

- Biomimetic Organocatalysis
- Aerobic Oxidations
- Dual Catalysis
- Structure Function Relationships
- Medicinal Chemistry
- Material Design and Preparation

Awards

President's University Teaching Award for Non-Tenured Faculty, 2014

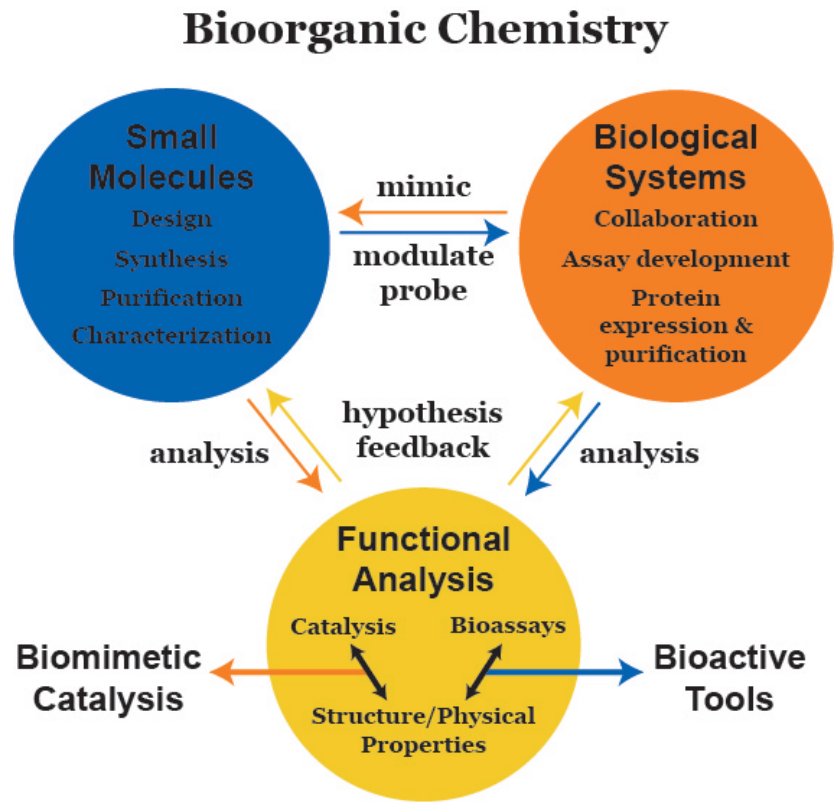
Selected Publications

Attila Kormányos, Mohammad S. Hossain, Ghazaleh Ghadimkhani, Joe J. Johnson, Csaba Janáky, Norma R. de Tacconi, Frank W. Foss Jr, Yaron Paz and Krishnan Rajeshwar* "Flavin Derivatives with Tailored Redox Properties: Synthesis, Characterization and Electrochemical Behavior" *Chemistry - A European Journal* **2016**, 22, 9209-9217 (DOI: 10.1002/chem.201600207).

Mohammad S. Hossain, Cuong Q. Le, Ebenezer Joseph,a,† Toan Q. Nguyen,a,† Kayunta Johnson-Winters, Frank W. Foss Jr.* "Convenient synthesis of FO and activity in F420-dependent NADP reductase" *Organic and Biomolecular Chemistry*, **2015**, 13, 5082-5085 (DOI: 10.1039/C5OB00365B).

Shuai Chen, Mohammad S. Hossain, Frank W. Foss Jr.* "One-Pot Multi-Component Organocatalytic Syntheses of Pyridines and Benzothiazoles: Aromatic Oxidation by Bioinspired Aerobic Organocatalysis" *ACS Sustainable Chemistry and Engineering*, **2013**, 1, 1045-1051 (DOI: 10.1021/sc4001109).

Shuai Chen, Frank W. Foss Jr.* "Aerobic Organocatalytic Oxidation of Aryl Aldehydes: Flavin Catalyst Turnover by Hantzsch's Ester" *Organic Letters*, **2012**, 14, 5150-5153 (DOI: 10.1021/ol302479b).



Frank W. Foss, Jr.

Associate Professor

Graduate Advisor

B.S. 1999, Chemistry, University of Richmond

Ph.D. 2006, Chemistry, University of Virginia, Prof. T. Macdonald

Post-Doctoral Research 2006-8 Chemistry, Columbia University, NYC, NY Prof. R. Breslow

Member: ACS

Funding: NSF, UTA

Jongyun Heo

Associate Professor

B.Sc. 1987, Biological Science and Chemistry, Sogang University, Seoul Korea

M.Sc. 1997, Biological Science, Northern Illinois University

Ph.D. 2001, Biochemistry, University of Wisconsin – Madison

Post-Doctoral Research 2001-2006, University of North Carolina – Chapel Hill Department of Biochemistry and Biophysics

Member:
American Chemical Society, New York Academy of Sciences, Academic Keys.

Research

- Mechanistic Studies of Redox Regulation of redox-active Small GTPases, Phosphatases and Kinases
- Investigation of Anti-cancer Drugs

Selected Publications

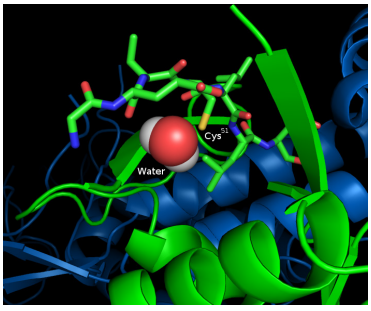
"Thiopurine Prodrugs Mediate Immunosuppressive Effects by Interfering with Rac1 Protein Function" Jin-Young Shin, Michael Wey, Hope G. Umutesi, Xiangle Sun, Jerry Simecka, and Jongyun Heo, *J. Biol. Chem.*, (**2016**) 291: 13699-13714.

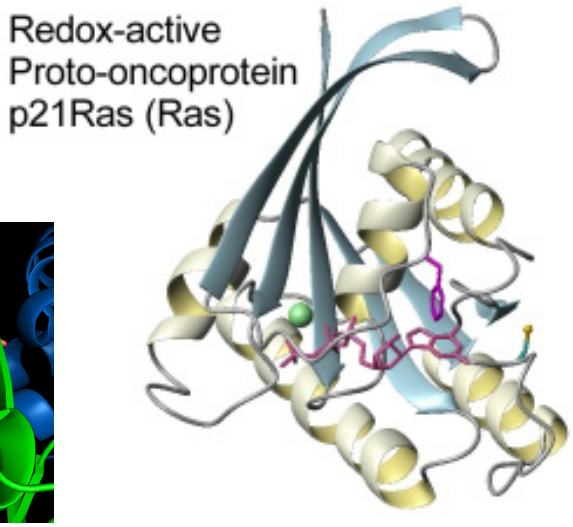
"Kinetic Mechanism of Formation of Hyperactive Embryonic Ras in Cells" Michael Wey, Jungwoon Lee, Soon Seog Jeong, Jungho Kim, and Jongyun Heo., *Biochemistry*, (**2016**) 55: 543-559.

"Superoxide Inhibits Guanine Nucleotide Exchange Factor (GEF) Action on Ras, but not on Rho, through Desensitization of Ras to GEF" Michael Wey, Vinh Phan, Gerardo Yepez, and Jongyun Heo, *Biochemistry*, (**2014**) 53: 518-532.

"Kinetic mechanisms of mutation-dependent Harvey Ras activation and their relevance for the development of Costello syndrome" Michael Wey, Jungwoon Lee, Soon Seog Jeong, Jungho Kim, and Jongyun Heo, *Biochemistry*, (**2013**) 52: 8465-8479.

"Insight into the 6-thiopurine-mediated Termination of the Invasive Motility of Tumor Cells Derived From Inflammatory Breast Cancer" Jongyun Heo, Michael Wey, and Inpyo Hong, *Biochemistry*, (**2011**) 50: 5731-5742





Research

- Chemical Synthesis: Synthesis of Bioactive Complex Molecules and Synthetic Methodology
- Chemical Catalysis: Homogeneous Catalysis and Reaction Mechanisms
- Medicinal Chemistry
- Material Sciences: New nano-materials and polymers

Awards:

- President's Award for Excellence in Teaching (2017)
- Outstanding Science Teaching Award for the College of Science (2017)
- ACS Young Organic Investigator, the Fall 2016 ACS meeting in Philadelphia (2016)
- Excellence in Teaching Award, Sigma Alpha Phi UTA (2015)
- ACS PRF Doctoral New Investigator (2014)

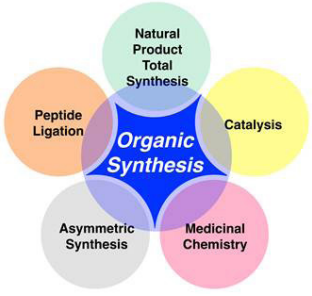
Selected Publications

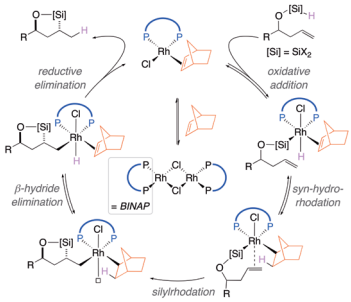
"Regio- and Stereoselective Dehydrogenative Silylation and Hydrosilylation of Vinylarenes Catalyzed by Ruthenium Alkylidenes," Bokka, A.; Jeon, *J. Org. Lett.* **2016**, 18, 5324.

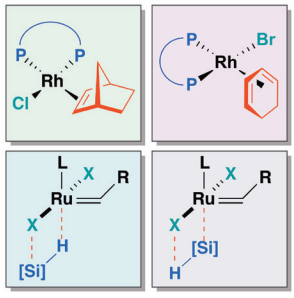
"Catalytic Reductive ortho-C–H Silylation of Phenols with Traceless, Versatile Acetal Directing Groups and Synthetic Applications of Dioxasilines," Hua, Y.; Asgari, P.; Avullala, T.; Jeon, J. *J. Am. Chem. Soc.* **2016**, 138, 7982.

"Mechanistic Insights into Grubbs-Type Ruthenium Complex-Catalyzed Intramolecular Alkene Hydrosilylation: Direct s-Bond Metathesis in the Initial Stage of Hydrosilylation," Bokka, A.; Hua, Y.; Berlin, A. S.; Jeon, *J. ACS Catalysis* **2015**, 5, 3189.

"Reductive ortho-Silanolization of Aromatic Esters with Hydridosilyl Acetals," Hua, Y.; Asgari, P.; Dakarapu, U. S.; Jeon, *J. Chem. Commun.* **2015**, 51, 3778.







Junha Jeon

Associate Professor

B.S. 2000, Chemistry
Sungkyunkwan University, Korea

M.S. 2002, Chemistry
Sungkyunkwan University, Korea

Ph.D. 2009, Chemistry,
University of Minnesota,
Prof. Thomas R. Hoye, Advisor

Post-Doctoral Research, (2009-2011) University of Pennsylvania,
Prof. Amos B. Smith, III, Advisor

Kayunta Johnson-Winters

Distinguished Service Leader

Associate Professor

B.A. 1999, Biology/Chemistry, Alverno College

Ph.D. 2006, Biochemistry, University of Wisconsin-Milwaukee
Project: Structural and Kinetic Characterizatio of 4-Hydroxyphenylpyruvate Dioxygenase from Streptomyces avermitilis.
Prof. Graham R. Moran

Post-Doctoral Research, 2006-2010
University of Arizona

Member:
American Chemical Society (ACS), American Society of Biochemistry and Molecular Biology (ASBMB)

Research

- Enzymes that use Cofactor F420
- Structure determination by spectroscopic techniques and X-ray crystallography
- Enzyme kinetics and mechanism by rapid-mixing pre-steady state and steady state methods.
- Investigation of reaction intermediates by kinetic isotope effects.

Awards

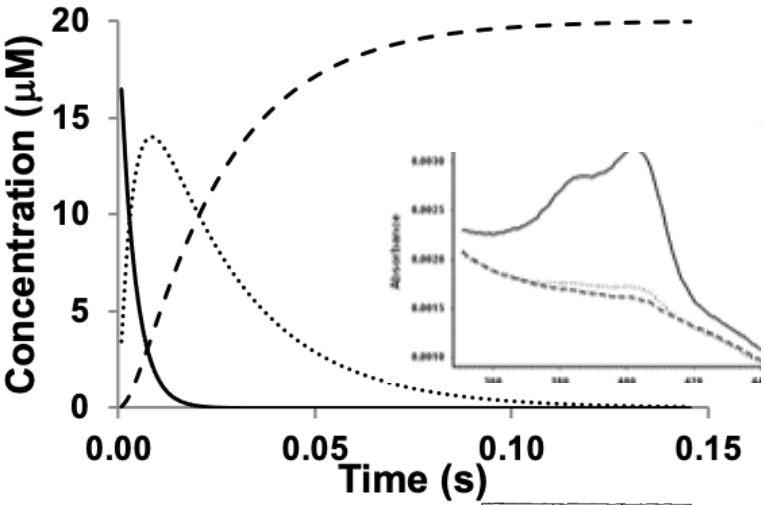
2022, Academy of Distinguished Service Leaders, 2022, UTA Research Initiation Program (REP) 2016, National Institutes of Health (NIH) R15, 2011 National Science Foundation (NSF) RIG_BP, 2010, UTA Research Initiation Program (REP)

Selected Publications

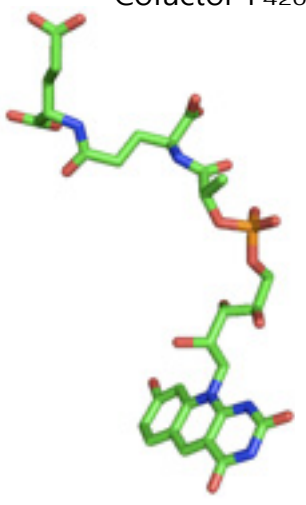
Lindsay A. Davis, Mercy A. Oyugi, Jamariya Howard, Juan Corrales, Alaa Aziz, Charlene Mandimutsira, Joisha Girme, Amina Agbonoga, Ghader Bashiri, Edward N. Baker, and Kayunta Johnson-Winters, Inorganica Chemica Acta, "F420-Dependent Glucose-6-phosphate Dehydrogenase: A comprehensive review," (**2021**) 524, 120417

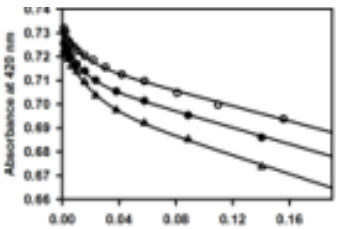
Mercy A. Oyugi, Ghader Bashiri, Edward N. Baker, and Kayunta Johnson-Winters, Biochem. Biophyica Acta-Proteins and Proteomics, " Mechanistic Insights into F420-Dependent Glucose-6-Phosphate Dehydrogenase using Isotope Effects and Substrate Inhibition Studies," (**2018**) 1866 (2) 387-95.

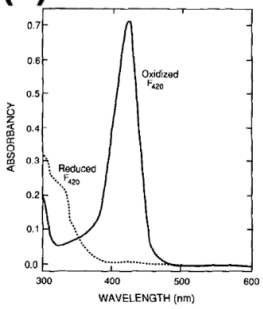
Cuong Quang Le, Mercy Oyugi, Ebenezer Joseph, Toan Nguyen, Hasmat Ullah, Joshua Aubert, Thein Phan, Joseph Tran and Kayunta Johnson-Winters, Biochemistry and Biophysics Reports, "Effects of Isoleucine 135 side chain length on the cofactor donor-acceptor distance within F420H2:NADP+ Oxidoreductase: A kinetic analysis," (**2017**) 9, 114-120



Cofactor F_{420}







Visible spectra of the reduced and oxidized cofactor F420.
from: J. Bacteriol. (Cheeseman et. al)

Research

- Extraction, Enrichment, Separation, and Characterization of Membrane Proteins
- Two-Dimensional Liquid Chromatography
- Mechanistic Studies in Electrokinetic Chromatography
- Nonaqueous Capillary Electrophoresis
- Multi-Variate Analysis of Structure – Retention – Property Relationships
- Organized Self-Assemblies of Amphiphilic Molecules
- Organic Synthesis and Catalysis in Aqueous Two-Phase Systems

Selected Publications

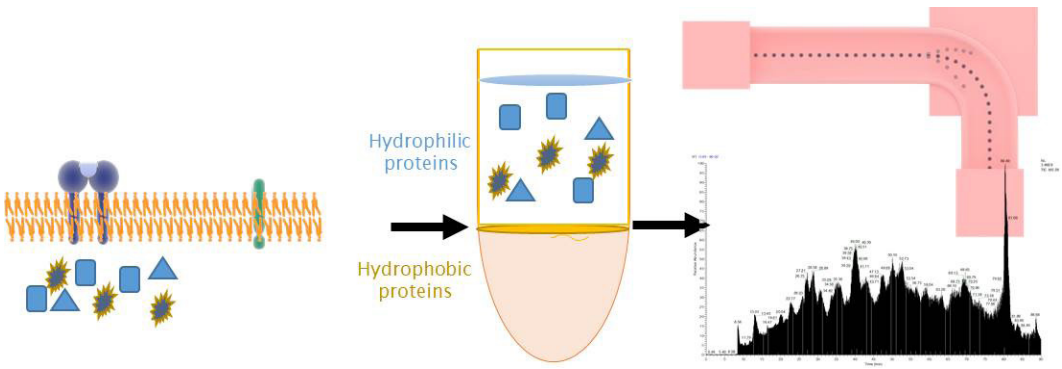
Weisner, N. and Khaledi, M.G., "Organic Synthesis in Fluoroalcohol – Water Two-Phase Systems", *Green Chemistry*, **2016**, 18, 681-685.

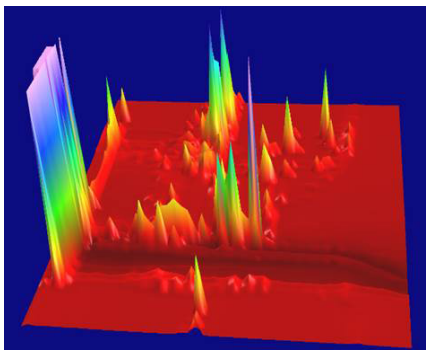
Nejati, M.M. and Khaledi M.G., "Perfluoro-Alcohol-Induced Complex Coacervates of Polyelectrolyte – Surfactant Mixtures: Phase Behavior and Analysis", *Langmuir*, **2015**, 31(20), 5580-5589.

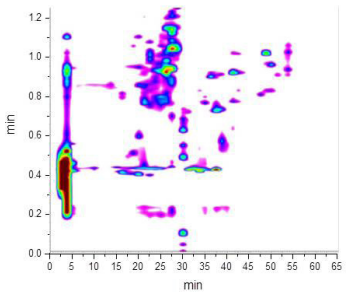
C.Fu, M.G. Khaledi, "Characterization and Classification of Pseudo-Stationary Phases in Micellar Electrokinetic Chromatography Using Chemometric Methods", *Anal. Chem.*, **2014**, 86, 2371-2379.

M.G. Khaledi, S.I. Jenkins, and S. Liang "Perfluorinated Alcohols and Acids Induce Coacervation in Aqueous Solutions of Amphiphiles" *Langmuir* **2013**, 29, 2458-2464.

Fu, Cexiong and Khaledi, M.G. "Micellar selectivity triangle for classification of chemical selectivity in electrokinetic chromatography"; *J. Chromatogr.*, **2009** 1216, 1891-1900.







Morteza G. Khaledi

Professor

Dean College of Science

B.S., 1978, Chemistry,
University of Shiraz

Ph.D. 1985, Chemistry,
University of Florida

Post Doctoral Research, 1986,
Chemistry,
University of Florida,

Peter Kroll

Professor

Associate Chair

Diplom 1993, Physics, Ruprecht-Karls University Heidelberg

Ph.D. 1996, Materials Science, Technical University Darmstadt

Post-Doctoral Research, 1997-1999 Cornell University

Habilitation 2005, ChemistryRWTH Aachen University

Financial Support:
NSF, DARPA, AFOSR

Research

- Computational Materials Chemistry
- Polymer-Derived-Ceramics: Experiments & Simulations
- Amorphous Ceramics, Inorganic Networks, Glasses
- High-Pressure Chemistry and Structural Phase Transformations

Selected Publications

"Differential hysteresis scanning of non-templated monomodal amorphous aerogels", P. Taheri, J.C. Lang, J. Kenvin, and P. Kroll, Phys. Chem. Chem. Phys., **2021**, 23, 5422.

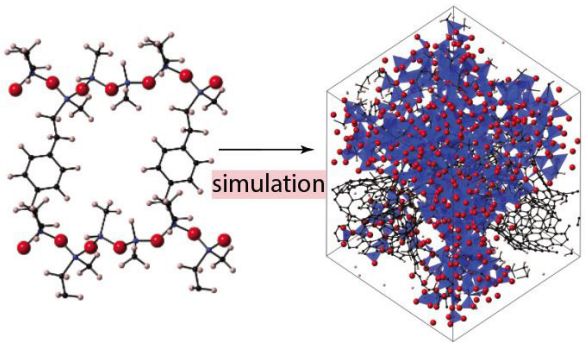
"Computing the Tantalum–Nitrogen Phase Diagram at High Pressure and High Temperature", H. Alkhaldi and P. Kroll, J. Phys. Chem. C **2020**, 124, 40, 22221.

"Reactive Force Field for Simulations of the Pyrolysis of Polysiloxanes into Silicon Oxycarbide Ceramics", I. Ponomarev, A.C.T. van Duin, and P. Kroll, J. Phys. Chem. C **2019**, 123, 27, 16804.

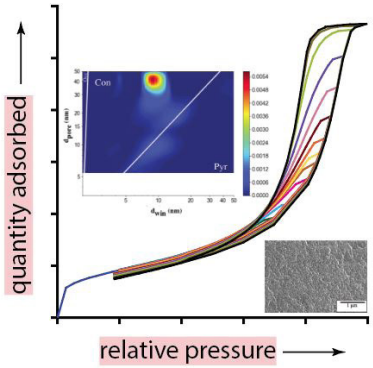
"Computational Study of Impact of Composition, Density and Temperature on Thermal Conductivity of Amorphous Silicon Boron Nitride", A. Dasmahapatra and P. Kroll, J. Amer. Ceram. Soc. **2018**, 1.

"Impact of Transition Metal Cations on the 29Si NMR Signal in Metal Oxide Glasses: A DFT Case Study of Hafnia Silica Glass", I. Ponomarev and P. Kroll, J. Phys. Chem. C **2017**, 121, 24152.

Pyrolysis of Preceramic Polymers



Poreshape in Ceramic Aerogels



Research

Our group's research is firmly rooted in synthetic organic chemistry, specifically in the development and application of new synthetic methods to the total synthesis of bioactive natural products. Inventing enabling synthetic methods based on classical or catalytic chemistry are a hallmark of our research. In recent years, our efforts have focused on heterocyclic chemistry and in particular to the construction of imidazole-containing natural products, including members of the oroidin and Leucetta families of marine alkaloids. The structures depicted below are representative of the types of molecules that we target. Recent efforts have focused on determining the bioactivity of a number of the molecules that we prepare through collaborations within the department and with other research groups on campus.

Total Synthesis

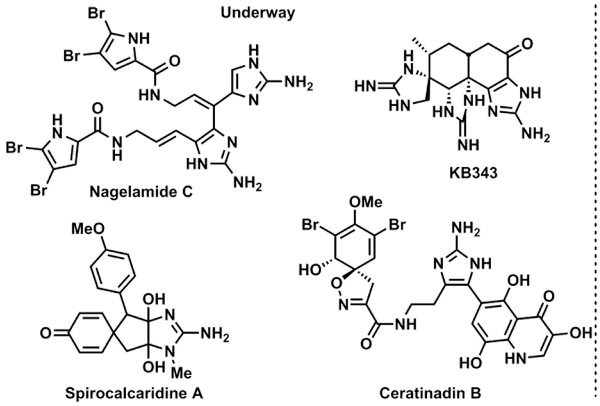
"Total Synthesis of (±)-2-Debromohymenin via Gold-Catalyzed Intramolecular Alkyne Hydroarylation" Singh, R.; Bhandari, M.R.; Torres, F.M.; Doundoulakis, T.; Gout, D.; Lovely, C.J. Org. Lett. **2020**, 22, 3412-3417.

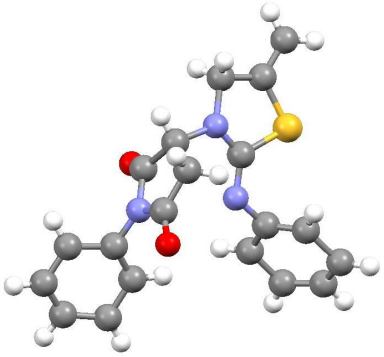
"Total Synthesis of the Nagelamides – Synthetic Studies Towards the Reported Structure of Nagelamide D and Nagelamide E Framework." Bhandari, M.R.; Herath, A. S.; Rasapalli, S.; Yousufuddin, M.; Lovely, C.J. J. Org. Chem. **2020**, 85, 12971-12987.

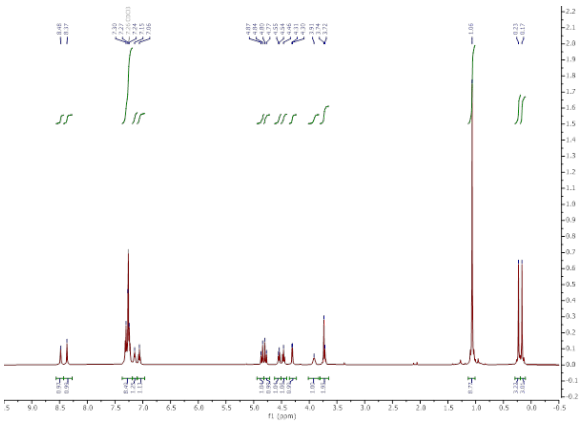
Methodology

"Intramolecular Diels-Reaction of a Silyl-substituted Vinylimidazole – en route to the Fully Substituted Cyclopentane Core of Oroidin Dimers" Ray, A.; Yousufuddin, M.; Gout, D.; Lovely, C.J. Org. Lett. **2018**, 20, 5964–5968.

Dearomatizing Spirocyclization of Thioureas, Ureas and Guanidines" Aziz, M.N.; Singh, R.P.; Gout, D.; Lovely, C.J. Tetrahedron Lett. **2021**, 72, 153054.







Carl J. Lovely

Professor

Distinguished Teaching Professor

B.Sc. (Hons) 1987, Chemistry, University of Birmingham, UK

Ph.D. 1990, Organic Chemistry, University of Birmingham, UK

Post-Doctoral Research, 1991 Organisches-Chemisches Institut, Universität Heidelberg

Post-Doctoral Research, 1992-1996, The Ohio State University

Member:
American Chemical Society, International Society of Heterocyclic Chemistry

Funding:
Welch, NIH, NSF

Robin Macaluso

Associate Professor

B.S. Education, Louisiana State University,

Ph.D. Chemistry, Louisiana State University

Financial Support:
National Science Foundation
American Chemical Society

Research

- Crystal growth of intermetallic
- Synthesis of novel oxynitrides Neutron and X-ray scattering

Awards

NSF CAREER, IUPAC Young Observer Fellow

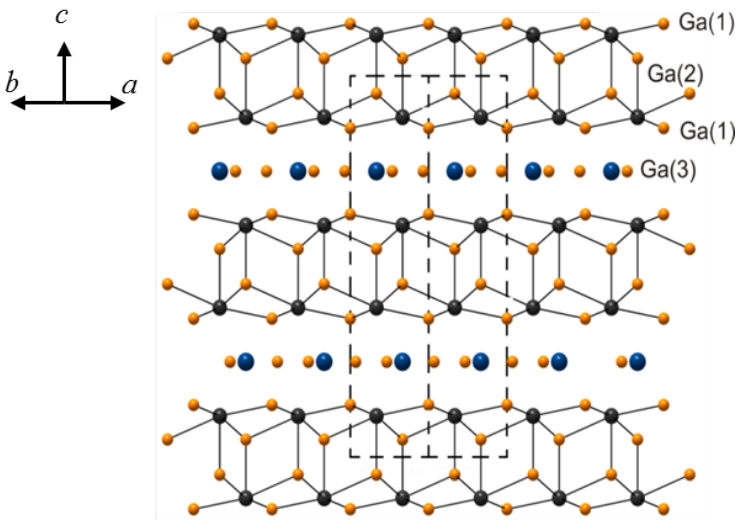
Selected Publications

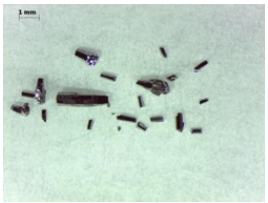
S. D. Nguyen, K. Ryan, P. Chai, M. Shatruk, Y. Xin, K. W. Chapman, P. J. Chupas, F. Fronczek, R. T. Macaluso, "Pr1.33Pt4Ga10: Superstructure and Magnetic Behavior", *Journal of Solid State Chemistry*, **2014**, 9-14.

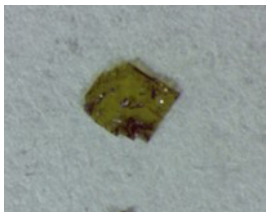
R. T. Macaluso, M. Shatruk, P. Chai, H. Hong, C. Wangeline, K. Ryan, P. Holton, J. Allaz, G. Morrison, B. Fulfer, F. Fronczek, J. Y. Chan, "Synthesis, Structure, and Magnetic Behavior of LaxCe1.33-xPt4Ga10 (0 ≤ x ≤ 1)", *Journal of Alloys and Compounds*, 600, **2014**, 193-198.

*Robin T. Macaluso and Benjamin K. Greve, "Challenges in Intermetallics: Synthesis, Structural Characterization and Transitions", *Dalton Transactions*, 41, **2012**, 14225.

R. T.Macaluso, M. Francisco, D.P. Young, S. Stadler, J.F. Mitchell, U.Geiser, H.Hong, M. G. Kanatzidis, "Structure and Properties of Rhombohedral CePd3Ga8: A Variant of the Cubic Parent Compound with BaHg11 Structure Type", *Journal of Solid State Chemistry*, 184, **2012**, 3185.







Research

- Fuel Chemistry
- SPARC Chemistry: Photocatalysis for CO2 reduction to useful fuels.
- Fischer-Tropsch Catalysis
- Gas-to-liquid; Coal-to-liquid conversion technology
- Synthesis and study of metal-polypyridyl complexes for applications in cancer biology and anti-cancer drugs.

Selected Publications

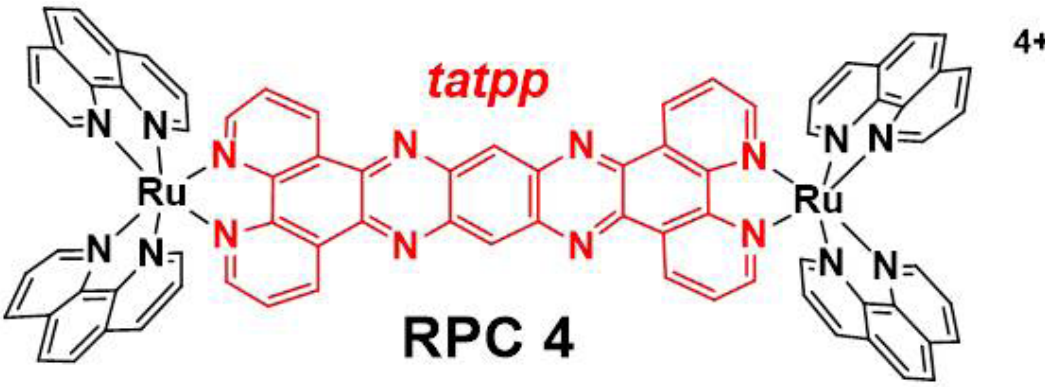
Griffith, C.; Dayoub, A. S.; Jaranatne, T.; Alatrash, N.; Mohamedi, Ali.; Abayan, K.; Bierbach, Z.; Armstrong, D. W. and MacDonnell, F.M."Catalytic Mechanism of DNA Cleavage in vitro and in vivo by Ruthenium Polypyridyl Complexes Containing Redox-Active Intercalating Ligands" *Chem. Sci.* under revision.

Chanmanee, W.; Mohammad Fakrul Islam, M. F.; Brian H. Dennis,B. H. and MacDonnell, F. M., "Solar Photothermochemical Alkane Reverse Combustion" *Proc. Natl. Acad. Sci.* **2016**, 113,10, 2579-2584. DOI: 10.1073/pnas.1516945113.

Aslan, Joseph M.; Boston, David J.; MacDonnell, Frederick M. "Photodriven Multi-electron Storage in Disubstituted Rull Dppz Analogues" *Chemistry - A European Journal* **2015**, 21(48), 17314-17323.

Boston, D. J.; Xu, C.; Armstrong, Da. W.; MacDonnell, F. M. "Photochemical Reduction of Carbon Dioxide to Methanol and Formate in a Homogeneous System with Pyridinium Catalysts" *Journal of the American Chemical Society*, **2013**, 135, 16252-16255 10.1021/ja406074w.

Yadav, A.; Janaratne, T.; Krishnan, A.; Singhal, S. S.; Yadav, S.; Dayoub, A. S.; Hawkins, D. L.; Awasthi, S.; MacDonnell, F. M., "Regression of Lung Cancer by Hypoxia-Sensitizing Ruthenium Polypyridyl Complexes", *Mol. Cancer Ther.* **2013**, 12, 643-653 10.1158/1535-7163.mct-12-1130.



Frederick M. MacDonnell

Professor

B.S. 1986, Chemistry, University of Vermont

Ph.D. 1993, Chemistry, Northwestern University

Post-Doctoral Research, 1992-1994, Harvard University

Awards:
Damon-Runyon Postdoctoral Fellow (1992-94)

Member:
American Chemical Society

Financial Support:
The Welch Foundation; NSF; Greenway Energy

Subhrangsu S. Mandal

Professor

B.Sc. 1989, Chemistry, Midnapore College, India

M.Sc. 1992, Chemistry, Kalyani University, India

Ph.D. 1998, Chemistry, Indian Institute of Science, India

Post-Doctoral Fellow, 1998-1999, University of Alberta, Canada

Post-Doctoral Fellow, 2000-2005, Howard Hughes Medical Institute, UMDNJ, New Jersey

Member:
American Chemical Society; American Society of Biochemistry and Molecular Biology; American Heart Association

Asscoiate Editor:
Heliyon Cancer Research; Frontiers in Endocrinology; Editorial Board Member: Scientific reports

Research

- Gene regulation, Epigenetics, and long-noncoding RNA
- Inflammation, macrophage activation, and metabolic disease
- Endocrinology: Estrogen signaling and metabolism
- Medicinal Chemistry and drug discovery: Design, synthesis, and biological evaluation of novel anti-inflammatory drugs; Immunotherapy, and Gene therapy

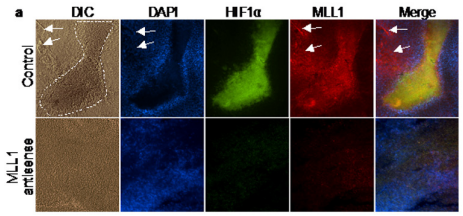
Selected Publications

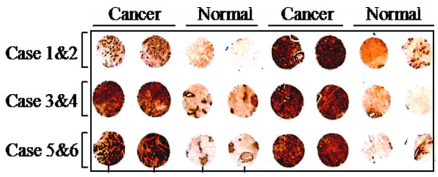
Obaid M., Udden S.M.N., Alluri P. and Mandal S.S*, LncRNA HOTAIR regulates glucose transporter Glut1 expression and glucose uptake in macrophages during inflammation, Scientific Reports 2021, 11: 232. doi: 10.1038/s41598-020-80291-4.

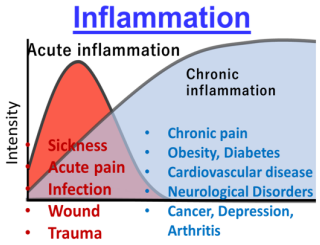
Bhan, A., Soleimani, M., Mandal, S. S.*, Long Noncoding RNA and Cancer: A New Paradigm. Cancer Research, 2017, 77(15), 3965-3981.

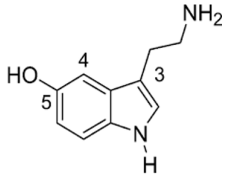
Ansari KI, Kasiri S., and Mandal SS.* Histone Methylase MLL1 plays critical roles in tumor growth and angiogenesis and its knockdown suppresses tumor growth in vivo, Oncogene 2013, 32(28):3359-70.

Ansari KI, Shrestha B., Hussain I, Kasiri S, and Mandal SS*, Histone Methylases MLL1 and MLL3 Coordinate with Estrogen Receptors in Estrogen-Mediated HOXB9 Expression, Biochemistry 2011, 50, 3517-27.

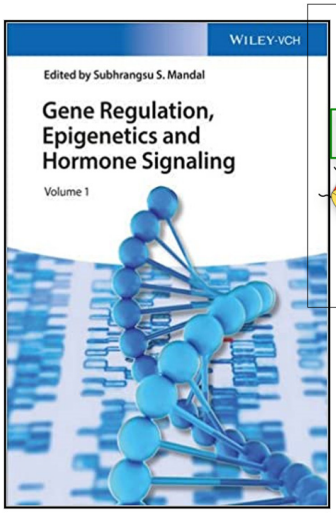


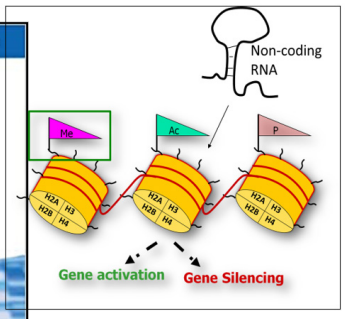


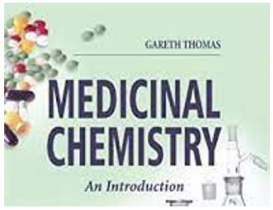




Serotonin, 5-HT







Research

We are a multidisciplinary team that is heavily involved in translational research aimed at solving unmet needs in cancer therapy and infection. We work in an exciting field called photomedicine, particularly in photodynamic therapy (PDT) and photochemotherapy (PCT). Our projects are focused on the design and development of targeted molecules (photosensitizers) that can be triggered by light to become powerful anticancer and antibacterial agents. Both our anticancer and antibacterial photosensitizers are in human Phase 2 clinical trials. We strive to provide our researchers with opportunities to become scientific experts in niche areas (synthesis and characterization, photophysics and photochemistry, or biological chemistry) and to develop the professional skills to become tomorrow's innovators.

- Translational drug discovery
- Medicinal inorganic chemistry
- Photodynamic therapy (PDT), photochemotherapy (PCT)
- Excited state dynamics, photophysics and photochemistry, electrochemistry
- Science communication and entrepreneurship

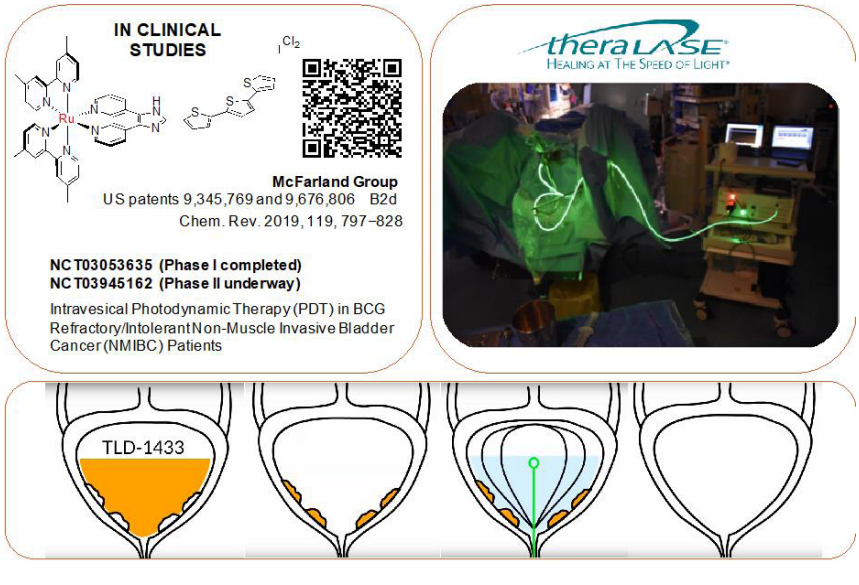
Selected Publications

Transition Metal Complexes and Photodynamic Therapy from a Tumor-Centered Approach: Challenges, Opportunities, and Highlights from the Development of TLD1433. Chem. Rev., **2019**, 119, 797–828.

Metal-based Photosensitizers for Photodynamic Therapy: the Future of Multimodal Oncology? Curr. Opin. Chem. Biol. **2019**, doi: 10.1016/j.cbpa.2019.10.004.

Synthesis, Characterization, and Photobiological Studies of Ru(II) Dyads Derived from -Oligothiophene Derivatives of 1,10-Phenanthroline. Photochem. Photobiol., **2019**, 95, 267–279.

Predictive Strength of Photophysical Measurements for In Vitro Photobiological Activity in a Series of Ru(II) Polypyridyl Complexes Derived from the π-Extended Ligands. Inorg. Chem., **2019**, 53, 3156—3166.



Sherri A. McFarland

Professor

B.A. 1996, Chemistry, Hendrix College

M.S. 1998, Chemistry, University of California San Diego

Ph.D. 2003, Chemistry, University of California San Diego

Post-Doctoral Research, 2003-2005, Dalhousie University (Canada)

Member:
American Chemical Society, Canadian Society for Chemistry, American Society for Photobiology, European Society for Photobiology, International Photodynamic Association, Inter-American Photochemical Society

Financial Support:
NIH; NSF; UT STARs

Kwangho Nam

Associate Professor

B.A. 1995, Agriculture Chemistry, Korea University, Seoul, South Korea

M.A. 1998, Agriculture Chemistry, Korea University, Seoul, South Korea

Ph.D. 2006, Chemistry, University of Minnesota, Minneapolis, MN

Post-Doctoral Research, 2006-2011, Chemistry and Chemical Biology Harvard University, Cambridge, MA

Assistant Professor 2011-2016, Chemistry Umeå University, Umeå, Sweden

Research

Theoretical and Computational Chemistry

- Catalytic and regulatory mechanisms of protein kinases and DNA repair enzymes
- Development of multiscale classical and quantum mechanical methods
- Development of free energy simulation methods for large biological systems
- Development of machine learning potentials for biocatalysis

Awards

National Cancer Center Post-Doc Fellowship 2007-2009

Selected Publications

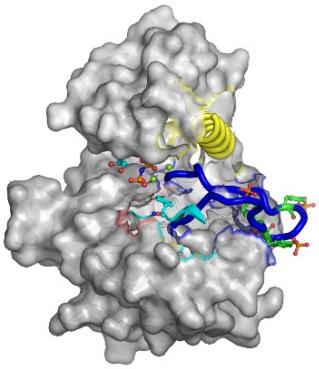
Pan, X.; Yang, J.; Van, R.; Epifanovsky, E.; Ho, J.; Huang, J.; Pu, J.; Mei, Y.; Nam, K.; Shao, Y. Machine Learning Assisted Free Energy Simulation of Solution-Phase and Enzyme Reactions. J. Chem. Theory Comput. **2021**, 17, 5745.

Ojeday-May, P.; Mushtaq, A. U.; Rogne, P.; Verma, A.; Ovchinnikov, V.; Grundström, C.; Dulko-Smith, B.; Sauer, U. H.; Wolf-Watz, M.; Nam, K. Dynamic Coupling between Enzymatic Catalysis and Collective Protein Motions. Biochemistry. **2021**, 60, 2246.

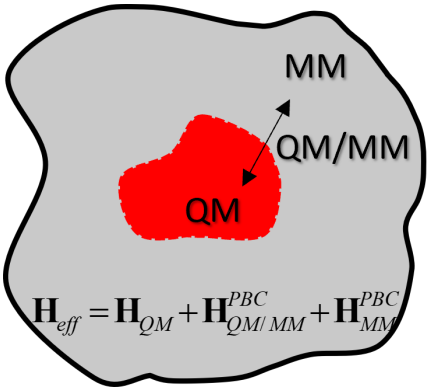
Shigdel, U. K.; Ovchinnikov, V.; Lee, S.-J.; Shia, J.; Karplus, M.; Nam, K.; Verdine, G. L. The trajectory of intrahelical lesion recognition and extrusion by the human 8-oxoguanine DNA glycosylase. Nat. Commun. **2020**, 11, 4437.

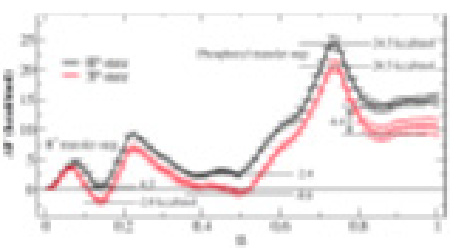
Nam, K.; Karplus, M. Insights into the origin of the high energy conversion efficiency of F1-ATPase. Proc. Natl. Acad. Sci. USA **2019**, 116, 15924.

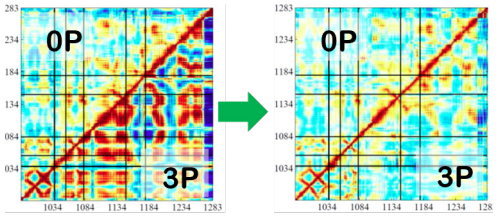
Biocatalysis, conformational change, & recognition



Protein Kinase







Research

- Semiconductor/electrolyte interfaces and solar energy conversion
- Heterogeneous photocatalysis and water/air purification
- Electrodeposition of semiconductor and nanocomposite thin films
- Materials and environmental chemistry

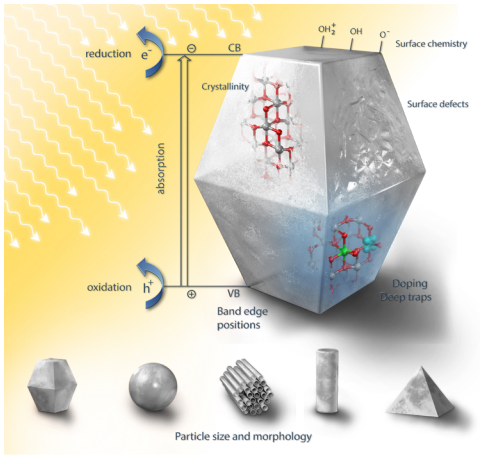
Selected Publications

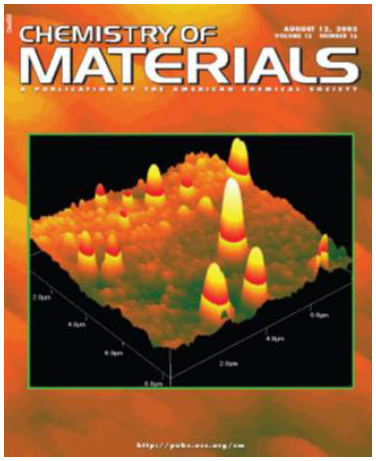
C. Janaky, D. Hursán, B. Endrdi, W. Chanmanee, D. Roy, D. Liu, N. R. de Tacconi, B. H. Dennis, K. Rajeshwar, "Electro- and Photoreduction of Carbon Dioxide: The Twain Shall Meet at Copper Oxide/Copper Nanocube Interfaces," *ACS Energy Lett.* (**2016**).

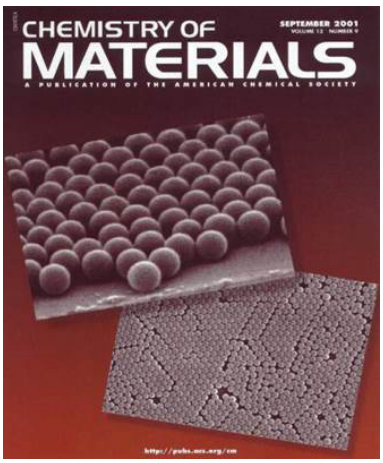
D. Hursan, A. Kormanyos, K. Rajeshwar and C. Janaky, "Polyaniline Films Photoelectrochemically Reduce CO2 to Alcohols," *Chem. Commun.* 52, 8858-8861 (**2016**).

K. Rajeshwar, C. Janaky and A. Thomas, "Photocatalytic Activity of Inorganic Semiconductor Surfaces: Myths, Hype, and Reality," *J. Phys. Chem. Lett.* 6, 139-147 (**2015**) (Viewpoint).

G. Ghadimkhani, N. R. de Tacconi, W. Chanmanee, C. Janaky and K. Rajeshwar, "Efficient Solar Photoelectrosynthesis of Methanol from Carbon Dioxide Using Hybrid CuO-Cu2O Semiconductor Nanorod Arrays," *Chemical Communications,* 49, 1297-1299 (**2013**).







Krishnan Rajeshwar

Distinguished University Professor

President, The Electrochemical Society

B.Sc. 1969, Chemistry, University College, Trivandrum, India

M.Sc. 1971, Chemistry, Indian Institute of Technology, India

Ph.D. 1975, Solid-State Chemistry, Indian Institute of Science, India

Post-Doctoral Research, 1975-1979 St. Francis Xavier University, Colorado State University

Kevin A. Schug

Professor & Shimadzu Distinguished Professor of Analytical Chemistry

Director, Collaborative Laboratories for Environmental Analysis & Remediation (CLEAR)

B.S. 1998, Chemistry, College of William and Mary

Ph.D. 2002, Chemistry, Virginia Tech Prof. Harold M. McNair, Advisor

Post-Doctoral Research, 2003-2005, Institute for Analytical Chemistry, University of Vienna, Austria Prof. Wolfgang Lindner, Advisor

Research

Research in our group crosses a broad spectrum of topics, encompassing the use of modern chromatographic separation techniques and molecular mass spectrometry to solve challenging analytical problems in the realm of biological, pharmaceutical, environmental, clinical, and physical chemistry. Our efforts are generally evenly split over fundamental (chromatographic separations; electrospray ionization; GC-VUV; on-line extraction and analysis) and applied (natural products; protein analysis; environmental remediation) research topics. For details visit: https://www.uta.edu/academics/faculty/profile?username=kschug.

Awards

2009 LCGC Emerging Leader in Chromatography; 2009 Eli Lilly & Company ACACC Young Investigator Award in Analytical Chemistry; 2013 ACS DAC Young Investigator in Separation Science; 2014 U.T. System Regents' Outstanding Teaching Award; 2016, Fellow, U.T. System Academy of Distinguished Teachers; 2019 & 2021, The Analytical Scientist's Top 100 Power List

Selected Publications

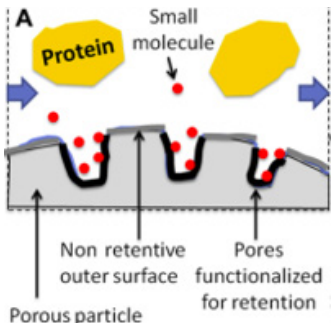
Zanella, D.; Liden, T.; York, J.; Franchina, F.A.; Focant, J.-F.; Schug, K.A.* Exploiting targeted and untargeted approaches for the analysis of bacterial metabolites under altered growth conditions. Anal. Bioanal. Chem. **2021**, 413, 5321-5332.

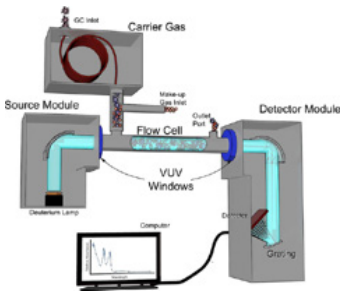
Anderson, H.E.; Liden, T.; Berger, B.K.; Ho Manh, L.; Wang, S; Schug, K.A.* Profiling of Contemporary Beer Styles Using Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry, Multivariate Analysis, and Machine Learning Techniques. Anal. Chim. Acta **2021**, 1172, 338668.

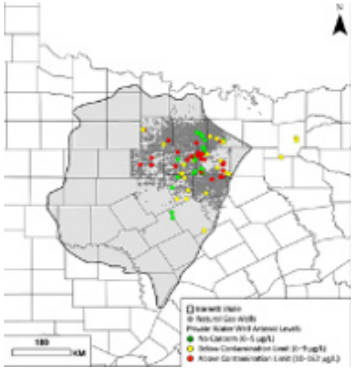
Wang, E.H.; Combe, P.C.; Schug, K.A.* Multiple Reaction Monitoring for Direct Quantitation of Intact Proteins using a Triple Quadrupole Mass Spectrometer. J. Am. Soc. Mass Spectrom. **2016**, 27, 886-896.

Schug, K.A.;* Sawicki, I.; Carlton Jr., D.D.; Fan, H.; McNair, H.M.; Nimmo, J.P.; Kroll, P.; Smuts, J.; Walsh, P.; Harrison, D. A Vacuum Ultraviolet Detector for Gas Chromatography. Anal. Chem. **2014**, 86, 8329-8335.

Fontenot, B.E.; Hunt, L.R.; Hildenbrand, Z.L.; Carlton Jr., D.D.; Oka, H.; Walton, J.L.; Hopkins, D.; Osorio, A.; Bjorndal, B.; Hu, Q.; Schug, K.A.* An evaluation of water quality in private drinking water wells near natural gas extraction sites in the Barnett Shale Formation. Environ. Sci. Technol. **2013**, 47, 10032-10040.







Research

- Design and Fabrication of Portable Instrumentation including circuitry, fabrication, programming and Automation.
- Environmental and Biological Sample Analysis for environmental toxins including poly- and per-fluoroalkyl substances
- Green Sample Preparation and Separation Methods
- Gas permeable and ion exchange membrane techniques for improving detection or separation in liquid chromatography.
- Novel detection methods using amperometric or potentiometric sensors
- Simultaneous Broadband Combined Absorbance and Fluorescence Spectroscopy

Awards

ACS Analytical Chemistry Summer Fellowship (2013)
ACS Environmental Chemistry Graduate Student Award (2012)

Selected Publications

Charles Phillip Shelor, Michael Donegan. Size Selective Electrodialytic Desalters for Electrospray Ionization-Mass Spectrometry. Anal. Chem. **2022**, 94 (34), 11873-11880.

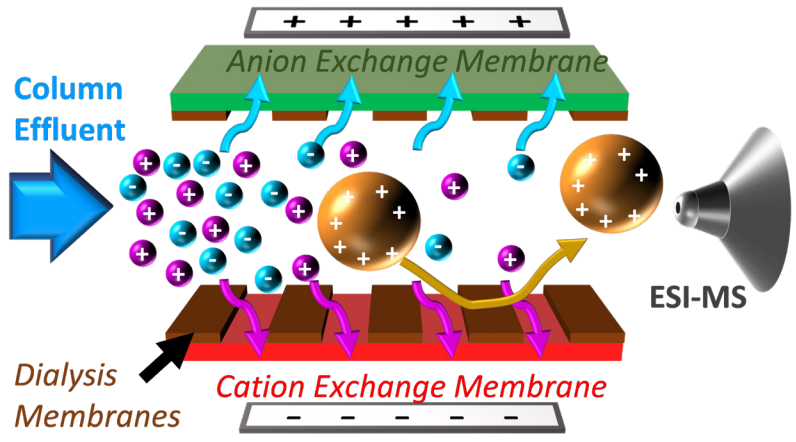
Shin-Ichi Ohira, Yuka Sato, Kazuki Horiuchi, Charles Phillip Shelor, Kei Toda. Indirect Potentiometric pH Detection of Weak Acids with Absolute Quantitation by a Theoretical Approach. Anal. Chem. **2021**, 93(36) 12305-12311.

Charles Phillip Shelor, Kenji Yoshikawa, Purnendu K. Dasgupta Automated Programmable Generation of Broad pH Range Volatile Ionic Eluents for Liquid Chromatography. Anal. Chem. **2021**. 93 (13), 5442-5450.

Akinde F. Kadjo, Purnendu K. Dasgupta, Charles Phillip Shelor. Optimum Cell Pathlength or Volume for Absorbance Detection in Liquid Chromatography: Transforming Longer Cell Results to Virtual Shorter Cells. Anal. Chem. **2020**, 92, 6391-6400.

C. Phillip Shelor. In Silico investigation of a post liquid chromatographic membrane extractor. Talanta, **2018**, 185, 557-567.

Size Selective Electrodialytic Desalting for LC-MS



C. Phillip Shelor

Research Assistant Professor

ORISE Faculty Fellowship
2002-present
Environmental Protection Agency, Washington D.C.

B.S. 2007, Chemistry, University of Texas at Arlington

Ph.D. 2014, Chemistry, University of Texas at Arlington, Prof. Purnendu K. Dasgupta, Advisor

Post-Doctoral Research, 2014-2016

Financial Support:
National Science Foundation

Byung Ran (Ranny) So

Assistant Professor

B.S. 2000, Chemistry and Chemical Engineering, Sungkyunkwan University, Korea

M.S. 2002, Chemistry, Sungkyunkwan University, Korea

Research Scientist, 2002-2004, LG Life Sciences, Korea

Ph.D. 2010, Chemistry, Ohio State University, Prof. Karin Musier-Forsyth, Advisor

Post-Doctoral Research, 2010-2020, Biochemistry and Biophysics, University of Pennsylvania/ Howard Hughes Medical Institute Prof. Gideon Dreyfuss, Advisor

Member:
RNA Society

Research

- RNA biology
- RNA binding proteins (RNPs) in post-transcriptional gene regulation
- Small non-coding RNPs complex biogenesis
- Multi-protein complexes assembly and function
- high-throughput assays development
- Small metabolite-mediated RNPs complexes in gene regulation

Selected Publications

Oh JM, Venters CC, Di C, Pinto AM, Wan L, Younis I, Cai Z, Arai C, So BR, Duan J, Dreyfuss G. U1 snRNP regulates cancer cell migration and invasion in vitro. Nat Commun. 2020 Jan 7;11(1):1. PubMed Central ID: PMC6946686.

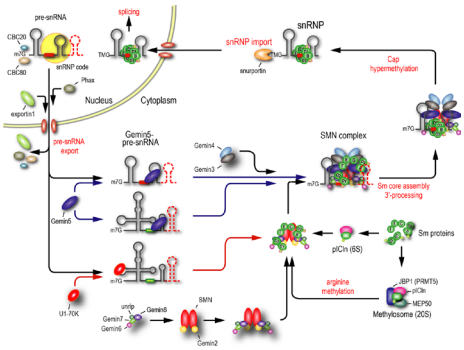
So BR, Di C, Cai Z, Venters CC, Guo J, Oh JM, Arai C, Dreyfuss G. A Complex of U1 snRNP with Cleavage and Polyadenylation Factors Controls Telescripting, Regulating mRNA Transcription in Human Cells. Mol Cell. 2019 Nov 21;76(4):590-599.e4. PubMed Central ID: PMC6874754.

Di C*, So BR*, Cai Z, Arai C, Duan J, Dreyfuss G. U1 snRNP Telescripting Roles in Transcription and Its Mechanism. Cold Spring Harb Symp Quant Biol. 2019; 84:115-122. PubMed ID: 32518092. *co-authors

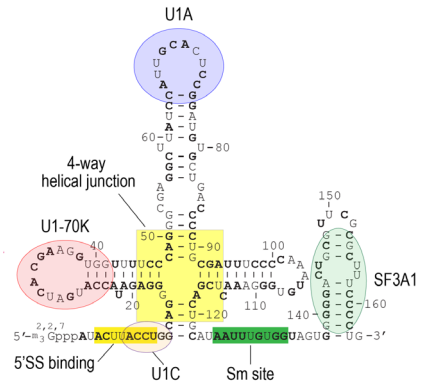
Chen L, Tanimoto A, So BR, Bakhtina M, Magliery TJ, Wysocki VH, Musier-Forsyth K. Stoichiometry of triple-sieve tRNA editing complex ensures fidelity of aminoacyl-tRNA formation. Nucleic Acids Res. 2019 Jan 25;47(2):929-940. PubMed Central ID: PMC6344894.

So BR, Wan L, Zhang Z, Li P, Babiash E, Duan J, Younis I, Dreyfuss G. A U1 snRNP-specific assembly pathway reveals the SMN complex as a versatile hub for RNP exchange. Nat Struct Mol Biol. 2016 Mar;23(3):225-30. PubMed Central PMCID: PMC4834709.

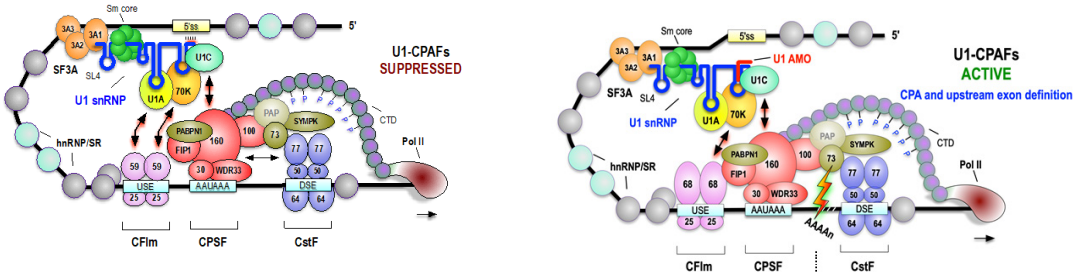
Overview of Sm core assembly



Multiple U1 snRNA mutations in cancer



U1 snRNP-mediated telescripting



Teaching

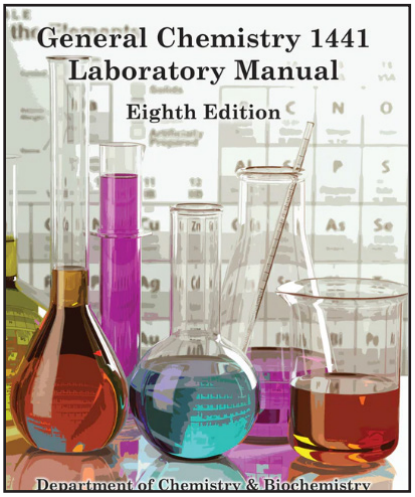
- Chemical Education
- CHEM 1341: GENERAL CHEMISTRY I
- CHEM 1400: INTRODUCTORY CHEMICAL PRINCIPLES
- CHEM 1441: GENERAL CHEMISTRY I
- CHEM 1442: GENERAL CHEMISTRY II
- CHEM 1465: CHEMISTRY FOR ENGINEERS

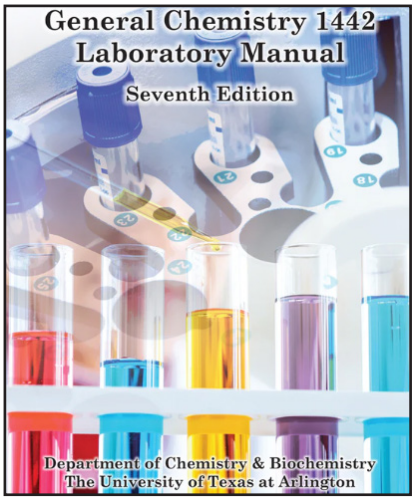
Awards

- 2020-2021 UTA College of Science Excellence in Teaching Award

Lab Manuals Written

UTA CHEM 1441 General Chemistry 1 Lab Manual, 8th Edition
UTA CHEM 1442 General Chemistry 2 Lab Manual, 7th edition





Bill Cleaver

Professor of Instruction

B.S. Chemistry, Colgate University, Hamilton, NY

Ph.D. Chemistry, Harvard University, Cambridge, MA

Member:
Phi Betta Kappa National Honor Society

Joshua Crowell

Associate Professor of Instruction

B.S. 2007, Chemistry & Biology, Hardin-Simmons University

Ph.D. 2015, Chemistry, The University of Texas at Arlington

Teaching

- Chemical Education
- CHEM 1400: INTRODUCTORY CHEMICAL PRINCIPLES
- CHEM 1441: GENERAL CHEMISTRY I
- CHEM 1442: GENERAL CHEMISTRY II
- CHEM 4311. BIOCHEMISTRY I

Awards

- 2014 Charles K. Baker Character Fellowship, The University of Texas at Arlington, Department of Chemistry and Biochemistry
- 2012 Graduate Teaching Award, The University of Texas at Arlington, Department of Chemistry and Biochemistry

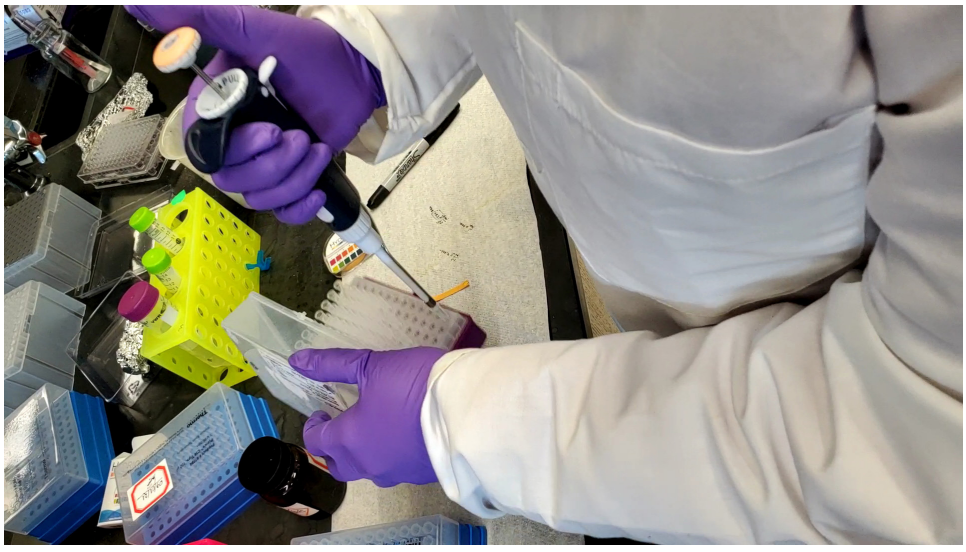
Selected Publications

Joshua K. Crowell; Sinjinee Sardar; Mohammad S. Hossain; Frank W. Foss Jr.; Brad S. Pierce "Non-chemical proton-dependent steps prior to O2-activaiton limit Azotobacter vinelandii 3-mercaptopropionic acid dioxygenase (MDO) catalysis" Arch Biochem Biophys. **2016** 604, 86-94.

Brad S. Pierce; Bishnu P. Subedi; Sinjinee Sardar; Joshua K. Crowell; "The 'Gln-type' thiol dioxygenase from Azotobacter vinelandii is a 3-mercaptopropionic acid dioxygenase" Biochemistry **2015** 54(51):7477-90.

Joshua K. Crowell; Wei Li; Brad S. Pierce "Oxidative uncoupling in cysteine dioxygenase is gated by a proton-sensitive intermediate" Biochemistry **2014** 53(48): 7541-8.

Wei Li; Elizabeth J. Blaesi; Michael D. Pecore; Joshua K. Crowell; Brad S. Pierce "Second-sphere interactions between the C93-Y157 cross-link and the substrate-bound Fe-site influence O2-coupling efficiency in mouse cysteine dioxygenase"; Biochemistry **2013** 52 (51): 9104-9119.



Teaching

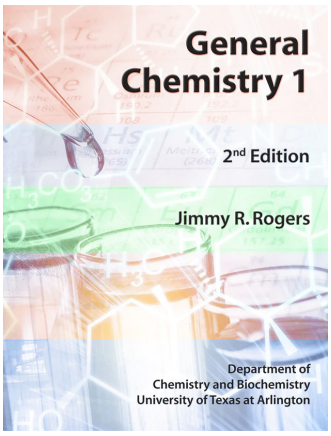
- Chemical Education
- CHEM 1441: GENERAL CHEMISTRY I
- CHEM 1442: GENERAL CHEMISTRY II
- CHEM 1465: CHEMISTRY FOR ENGINEERS
- CHEM 2321: ORGANIC CHEMISTRY I
- CHEM 2322: ORGANIC CHEMISTRY II
- CHEM 3315: INTRODUCTION TO BIOPHYSICAL CHEMISTRY

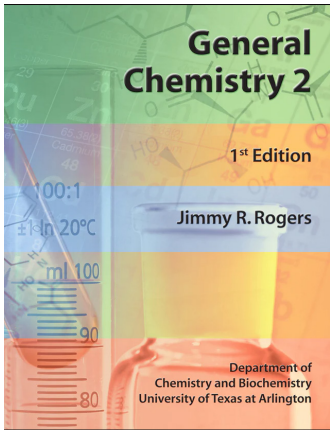
Awards

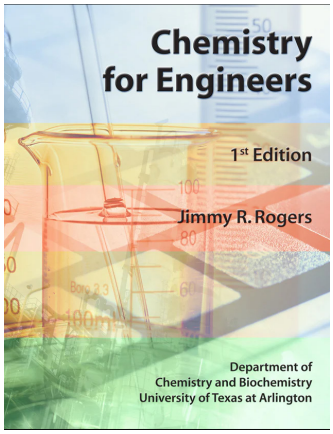
- Regents' Outstanding Teaching Award, University of Texas System (2009)
- Favorite Professor Award, Pre-Dental Student Association (2005)
- Best Professors/Classes to Take at UT-Arlington, Texas Monthly College Guide (2004-2005)
- Honorary Member of the Golden Key National Honor Society (2001)
- Provost's Award for Excellence in Teaching (1998-1999)
- Outstanding Academic Advisor, Faculty Award (1997-1998)
- Outstanding Contribution to Student Retention, Vice Provost for Academic Affairs (1998)
- Most Helpful Faculty Award, UTA Chemistry and Biochemistry Society (1998)
- Outstanding Technical Achievement Award, ARCO (1997)

Textbooks Written

Jimmy R. Rogers, General Chemistry 1, Second Edition, Stipes Publishing L.L.C., **2019**.
Jimmy R. Rogers, General Chemistry 2, First Edition, Stipes Publishing L.L.C., **2018**.
Jimmy R. Rogers, Chemistry for Engineers, First Edition, Stipes Publishing L.L.C., **2019**.







Jimmy R. Rogers

Professor of Instruction

Coordinator for General Chemistry

Director of UT-Arlington's Chemistry Clinic

B.S. 1979, Chemistry, Oklahoma Christian University

D.Sc. 1992, Chemistry, The University of Texas at Arlington

Seiichiro Tanizaki

Professor of Instruction

B.A. 1993, Mathematics & Chemistry, University of Maine at Farmington

Ph.D. 2003, Chemistry, Brandeis University

Teaching

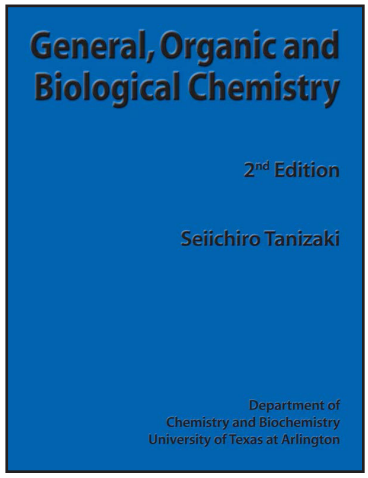
- Chemical Education
- Teaches introductory chemistry courses targeted for science majors, non-science majors, and nursing-intended students.
- Associaton of College and Univesity Educators (2020).
- Chair, Departmental Undergraduate Curriculum Committee (2012 – Present)

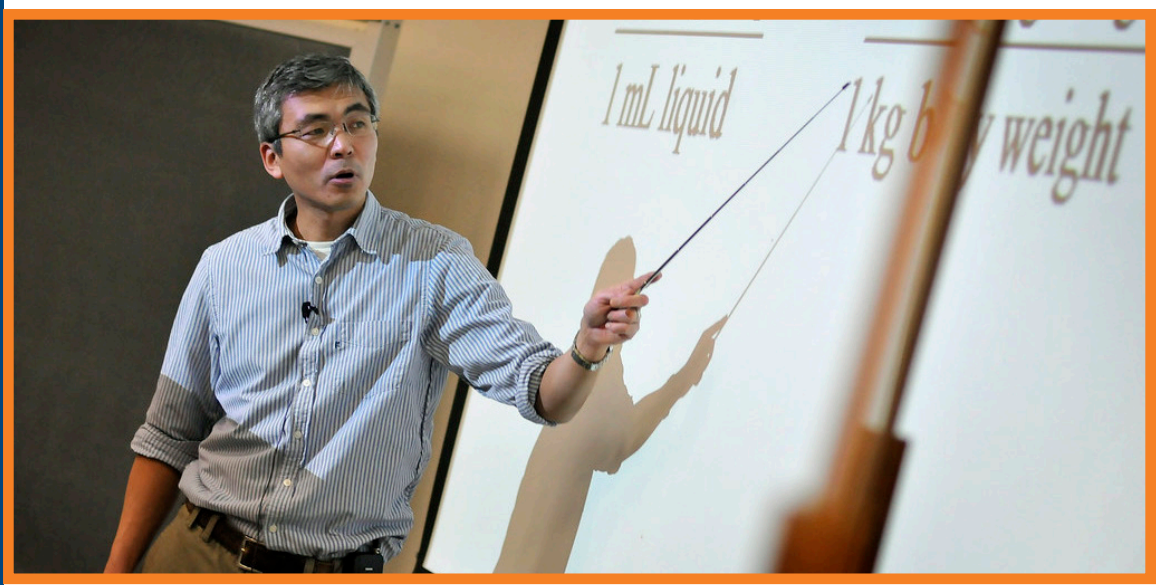
Awards

- William S. Ward Endowment Award (2016).
- Nominated for the President's Award for Excellence in Distance Education Teaching (2014).
- The UT System Regents' Outstanding Teaching Awards (2013).
- The Provost's Award for Excellence in Teaching (2012).
- Honored by Freshman Leaders on Campus (FLOC) at the University of Texas at Arlington (2007/2010/2011/2012).
- Nominated for the 2009 – 2010 Outstanding Academic Advisor Award.

Selected Publications

Seiichiro Tanizaki, General, Organic, and Biological Chemistry, 2nd Edition, Stipes Publishing L.L.C., **2017**.





How to Apply

Thank you for your interest in the Department of Chemistry & Biochemistry Doctoral Program at the University of Texas-Arlington. If you have not already done so, I invite you to review and research active faculty on our departmental website. You are also welcome (and encouraged) to contact faculty members directly with specific questions relating to research activities within their group(s).

Language Requirements

An applicant whose native language is not English must submit a TOEFL score of at least 550 or a score of at least 213 on the computer-based test. A TSE-A score of 45 or higher can be substituted for the TOEFL. Those who have completed their undergraduate education in English may be eligible for a TOEFL waiver based on the recommendation letters. Any questions about this should be directed to the Graduate Admissions Counselors http://www.uta.edu/admissions/contact/graduate.php

Over the first year, graduate students receive financial assistance from the Department of Chemistry & Biochemistry in the form of a Graduate Teaching Assistant (GTA) position. This support is contingent on the applicant satisfying the minimum English proficiency required by the office of graduate studies at the time they start the graduate program. This is equivalent to a TOFEL IBT spoken score of 23 or higher.

GRE requirements

We have no 'minimum requirement' for our department's applicants. For instance, the average GRE verbal and quant scores for students accepted into the 2019 class were 155 and 159, respectively. These scores vary year-to-year depending on the pool of our incoming applicants. Therefore, it is not possible to provide a 'minimum value' for guaranteed acceptance.

Application Terms and Deadlines

If you intend on applying for the Fall 2023 term, please note that while the university deadline for Domestic applications is **June 15, 2023**, and the priority deadline for International, Permanent Residents, and Resident Aliens is **March 15, 2023**, prospective students are encouraged to submit materials for their formal application early.

We will begin reviewing completed applications on **December 19th, 2022**. Initial offers of acceptance will be sent out starting in January 2022 and will continue until all available positions are filled. We cannot guarantee departmental review of application materials if received past April 31, 2022.

Also, please be aware that Spring and Summer term admissions in any calendar year are generally not considered without the unconditional support of a faculty member within the Chemistry & Biochemistry department.

Additional Documents

In addition to a completed application to the graduate school, and in order for the committee to review you as a candidate, you will need to arrange for your CV, statement of purpose, and letters of recommendation to be sent to the following email address: chemgrad@uta.edu or the physical location:

ATTN: Stephanie Henry, Graduate Recruiting
The University of Texas at Arlington
Room 130, Chemistry & Physics Building (CPB)
700 Planetarium Place
Arlington, Texas 76019-0065 USA

Checklist

Due to the large number of quality applications we receive every year, only applicants that have successfully completed the following will be considered by the committee for acceptance to the program:

- Complete an application to UTA
- Submit all official documents to the GRADUATE SCHOOL (not to the committee)
- Submit additional documents to the graduate committee

Admissions FAQ

Where do I apply?

To apply to the program you will need to complete an application to UTA. More information can be found in the following link:
https://goapplytexas.org

Is there a fee to apply?
Yes, a $70 fee for candidates with only US transcripts and $90 for candidates with foreign transcripts.

When is the admission deadline?
The admission deadline varies depending on whether you are an international or domestic candidates and can be found at http://uta.edu/admissions/apply/graduate. However, Ph.D. positions are usually filled by this time. In order to maximize you chance at acceptance, please complete the entire checklist below by January.

Does the department offer financial assistance?
Ph.D. candidates are given a Graduate Teaching Assistantship to support them on a monthly basis plus 100% off tuition. Master students accepted to the program are sometimes offered some form of fellowship/scholarship.

When will I know if I am accepted to the program?
The process of selecting graduate students takes some time. We begin the selection process in late December and begin issuing offer letters of acceptance in January. We will continue this process until all available positions have been filled. This process may take until the end of April or May.

Do I need to send official documents, or are copies sufficient?
Unofficial copies of your transcripts are sufficient for the application process. Official GRE and English exam scores are needed for your application to the graduate school.

My TOEFL is below the value required from the graduate school. Can I still apply?
In the past, you could. However, now you will not be issued an I-20, or be allowed to participate in any Teaching Assistantships that would allow the department to assist you financially. (effectively, the answer is "no")

I have another question. Is there someone I can ask?
Stephanie Henry is the Graduate Program Coordinator. You may reach her at stephanie.henry@uta.edu. Any questions regarding the graduate application should be directed to the graduate school. http://uta.edu/admissions/contact-us

Once I complete the application, do I need to do anything else?
In addition to a completed application to the graduate school, and in order for the committee to review you as a candidate, you will need to arrange for copies of your CV, statement of purpose, unofficial transcripts, and letters of recommendation to be sent to the following email address: chemgrad@uta.edu or the physical location.

Please also review the 'Related information' link on the 'Doctor of Philosophy in Chemistry?' website listed below. Several frequently asked questions are addressed on this page; your attention to this information could save a great deal of time in future correspondence.

Index:
https:// www.uta.edu/academics/schools-colleges/science/departments/chemistry/degree-programs
Related information:
https://www.uta.edu/academics/schools-colleges/science/departments/chemistry/degree-programs/graduate
Financial Support Information:
Information regard financial support for Ph.D. candidates can be found here:
https://www.uta.edu/academics/schools-colleges/science/departments/chemistry/degree-programs/graduate/faqs

The University of Texas at Arlington
Department of Chemistry and Biochemistry
700 Planetarium Pl
Campus Box 19065
Arlington, Texas 76019-0065
817-272-3171
chemgrad@uta.edu
www.uta.edu/chemistry