Chemistry & Biochemistry

Gregory A. Caputo
Professor & Department Head
Chemistry & Biochemistry/Molecular & Cellular Biosciences

caputo@rowan.edu
http://users.rowan.edu/~caputo/

Education:
BS (Chemical Biology), Stevens Institute of Technology
PhD (Molecular & Cell Biology), Stony Brook University
Postdoctoral (Molecular Medicine), Texas A&M Health Science Center
Postdoctoral (Biochemistry & Biophysics), University of Pennsylvania School of Medicine

Research Expertise:
Biophysical Chemistry | Antimicrobials | Peptide-lipid interactions

My research interests are in two major areas: designing/characterizing peptides with specific functions and antimicrobial surfaces.

The majority of the research focuses on the development and characterization of antimicrobial peptides. These are short, cationic sequences that are highly effective, broad spectrum antimicrobials with low toxicity profiles. I study the chemical and amino-acid composition of these peptides and the role different amino acids play in the functional properties of these peptides. My lab also has a project focused on the design of peptides to interact with optically active porphyrins toward the development of novel materials for application in photovoltaic devices.

I also am interested in antimicrobial thin film coatings. In collaboration with the Departments of Physics & Astronomy and Electrical & Computer Engineering, my team has developed a series of coatings (patent pending) with a variety of antimicrobial and physical properties. The group focuses on the efficacy and mechanism of the antimicrobial coatings.

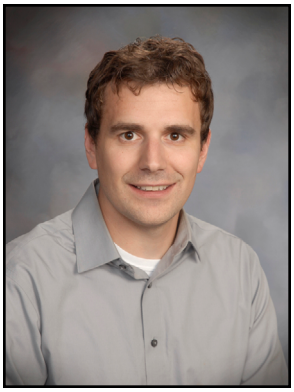
Member of:
American Chemical Society (www.acs.org)
Biophysical Society (www.biophysics.org)

Recent Publications:
Goderecci SS, Kaiser E, Yanakas M, Norris Z, Scaturro J, Oszust R, Medina CD, Waechter F, Heon M, Krchnavek RR, Yu L, Lofland SE, Demarest RM, Caputo GA, Hettinger JD (2017) Silver Oxide Coatings with High Silver-Ion Elution Rates and Characterization of Bactericidal Activity. Molecules. 22: pii: E1487

Hanna SL, Huang JL, Swinton AJ, Caputo GA, Vaden TD (2017) Synergistic effects of polymyxin and ionic liquids on lipid vesicle membrane stability and aggregation. Biophys Chem. 227:1-7.

Takahashi H, Caputo GA, Vemparala S, Kuroda K (2017) Synthetic Random Copolymers as a Molecular Platform To Mimic Host-Defense Antimicrobial Peptides. Bioconjug Chem. 28:1340-1350.Review

Ridgway Z, Picciano AL, Gosavi PM, Moroz YS, Angevine CE, Chavis AE, Reiner JE, Korendovych IV, Caputo GA (2015) Functional characterization of a melittin analog containing a non-natural tryptophan analog. Biopolymers. 104:384-94.



James Grinias

Assistant Professor
Chemistry & Biochemistry

grinias@rowan.edu

Education:
BS (Chemistry), Eastern Michigan University
PhD (Analytical Chemistry), University of North Carolina at Chapel Hill
Post-doctoral affiliation (Analytical Chemistry), University of Michigan

Research Expertise:
Analytical Chemistry | Liquid Chromatography | Microfluidics

My research background focuses on the fundamental development of liquid chromatography (LC) columns in capillaries and microfluidic devices. LC columns are at the heart of many analytical separation techniques across pharmaceutical, environmental, and biomedical research projects. Early work focused on the physical structure of the packed chromatographic bed inside a fused silica capillary and led to strategies that could be used to pack more efficient columns in capillaries and also miniaturized microfluidic devices. Other interests have included understanding the physical processes beyond bed structure that impact column performance (included extra-column effects and frictional heating) and applying LC and mass spectrometry (MS) instrumentation to solve analytical problems in neuroscience and molecular physiology.

Honors and Awards:
2017 Eastern Michigan University Young Alumnus Award
NIH NRSA Individual Postdoctoral Fellowship Award (F32- EB019800)
HPLC 2013 Csaba Horváth Top Young Scientist Award

Member of:
American Chemical Society (www.acs.org)
California Separation Science Society (casss.org)
Chromatography Forum of Delaware Valley (www.cfdv.org)

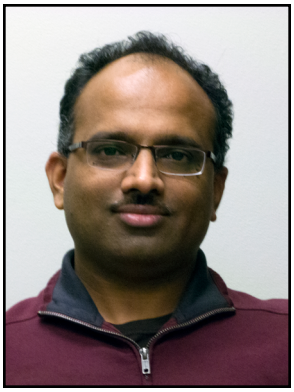
Recent Publications:

Blue LE, Franklin EG, Godinho JM, Grinias JP, Grinias KM, Lunn DB, Moore SM (2017) Recent Advances in Capillary Ultrahigh Pressure Liquid Chromatography. J Chromatogr A. In Press.

Grinias JP, Kresge GA (2017) Miniaturizing Columns and Instruments in Liquid Chromatography. LC-GC 35:515-516.

Dugan CE, Grinias JP, Parlee SD, El-Azzouny M, Evans CR, Kennedy RT (2017) Monitoring Cell Secretions on Microfluidic Chips using Solid-Phase Extraction with Mass Spectrometry. Anal Bioanal Chem. 409:169-178.

Grinias JP, Wong J-MT, Kennedy RT (2016) Repeatability of Gradient UHPLC-MS/MS Methods in Instrument-Controlled Thermal Environments. J Chromatogr A. 1461:42-50.



Subash Jonnalagadda

Associate Professor
Chemistry & Biochemistry/Molecular & Cellular Biosciences

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Education:
BS (Chemistry), Pondicherry University, India
MS (Chemistry), University of Hyderabad, India
PhD (Organic Chemistry), Purdue University
Postdoctoral (Organic Chemistry), University of Pennsylvania
Postdoctoral (Medicinal Chemistry), University of Minnesota

Research Expertise:
Organic & Medicinal Chemistry | Organoboron Chemistry | Alternate Energy Materials

Medicinal Chemistry: We have been developing novel aza- and bora-heterocyclic compounds and betulin-based natural product derivatives as anti-cancer agents. In collaboration with Rowan School of Osteopathic Medicine, we have also identified few Withaferin-serotonin conjugates as potential therapeutic options for the treatment of Alzheimers' Disease.

Value Added Chemicals from Biomass: Recent efforts in this area have included the development of new protocols for the effective conversion of biomass derived cellulosic materials into chemicals such as hydroxymethyl furfural and furan dicarboxylic acid for applications as bio-based polymers.

Honors and Awards:
Rowan University Wall of Fame Teaching Award, 2013, 2016
Eli Lilly International Graduate Scholar, 2000-2005, Purdue University

Member of:
American Chemical Society (www.acs.org)

Recent Publications:

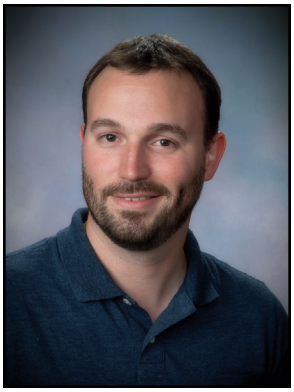
Suman P, Patel A, Solano LN, Jampana G, Gardner Z, Holt CM, Jonnalagadda SC (2017) Synthesis and cytotoxicity of Baylis-Hillman template derived betulinic acid-triazole conjugates. Tetrahedron. 73:4214-4226.

Alam MA, Arora K, Gurrapu S, Jonnalagadda SK, Nelson GL, Kiprof P, Jonnalagadda SC, Mereddy VR (2016) Synthesis and evaluation of functionalized benzoboroxoles as potential anti-tuberculosis agents Tetrahedron. 72:3795-3801.

Suman P, Patel BP, Kasibotla AV, Solano LN, Jonnalagadda SC (2015) Synthesis and evaluation of functionalized amino-benzoboroxoles as potential anti-cancer agents. J Organomet Chem. 798:125-131.

Jain A, Jonnalagadda SC, Ramanujachary KV, Mugweru A (2015) Selective oxidation of 5-hydroxymethyl-2-furfural to furan-2,5-dicarboxylic acid over spinel mixed metal oxide catalyst, Catalysis Commun. 58:179-182.

Jain A, Shore AM, Jonnalagadda SC, Ramanujachary KV, Mugweru A (2015) Conversion of fructose, glucose and sucrose to 5-hydroxymethyl-2-furfural over mesoporous zirconium phosphate catalyst, Appl Catalysis A. 489:72-76.



Thomas M. Keck

Assistant Professor
Chemistry & Biochemistry/Molecular & Cellular Biosciences

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Education:
BS (Biomedical-Biochemical Engineering), University of Southern California
PhD (Physiology & Pharmacology), Oregon Health & Science University
Postdoctoral (Medication development for drug addiction),
National Institute on Drug Abuse-Intramural Research Program (NIDA-IRP)

Research Expertise:
Pharmacology | Neuroscience | Biochemistry

I am interested in developing new medications for neuropsychiatric disorders, including Alzheimer's disease, schizophrenia, ADHD, pain, anxiety, and a particular interest in drug addiction. My lab works closely with medicinal chemists to design and test new drug-like molecules, combining molecular and behavioral pharmacology methods to evaluate the preclinical potential of new compounds designed to target the dopamine D4 receptor, the μ opioid receptor, and the trace amine-associated receptor 1, among others.

Honors and Awards:
2017 Maharaj Ticku Memorial Travel Fellowship for New Investigators Award, Behavior, Biology and Chemistry Conf.
2015 Frances R. Lax Faculty Development Award, Rowan University
2013 Mentoring Award for Fellows, NIDA-IRP, NIH
2013 Postdoctoral Mentor Award, NIH
2012 & 2013 Fellows' Award for Research Excellence, NIH

Member of:
American Society for Pharmacology and Experimental Therapeutics https://www.aspet.org/
Pharmacology Society (Councilor) https://www.aspet.org/MAPS/
Philadelphia Chapter of the Society for Neuroscience http://pcsfn.com/

Recent Publications:

Zou M-F, Keck TM, Kumar V, Donthamsetti P, Schweppe C, Burzynski C, Roof RA, Free RB, Janowsky A, Shi L, Sibley DR, Javitch JA, Newman AH (2016) Novel analogues of (R)-5-(methylamino)-5,6-dihydro-4H-imidazo[4,5,1-ij]quinolin-2(1H)-one (sumanirole) provide clues to dopamine D2-D3 receptor agonist selectivity J Med Chem. 59:2973-2988.

Keck TM, John WS, Czoty PW, Nader MA, Newman AH (2015) Identifying medication targets for psychostimulant addiction: unraveling the dopamine D3 receptor hypothesis. J Med Chem. 58:5361-80.

Keck TM, Banala AK, Slack RD, Burzynski C, Bonifazi A, Okunola-Bakare OM, Moore M, Deschamps JR, Rais R, Slusher BS, Newman AH (2015) Using click chemistry toward novel 1,2,3-triazole-linked dopamine D3 receptor selective ligands. Bioorg Med Chem. 23:4000-4012.

Keck TM, Bi G-H, Yang H-J, Zhang H-Y, Srivastava R, Gardner EL, Newman AH, Xi Z-X (2013) Fenobam sulfate inhibits cocaine-taking and cocaine-seeking behavior in rats: implications for translation. Psychopharmacology. 229:253-265.

Gustavo Moura-Letts

Assistant Professor
Chemistry & Biochemistry

moura-letts@rowan.edu
http://www.gmlresearchgroup.com/

Education:
BS (Chemistry), Universidad Peruana Cayetano Heredia, Peru
MS (Chemistry), University of Massachusetts
PhD (Organic Chemistry), University of Pittsburgh
Postdoctoral Fellow (Organic Chemistry), The Ohio State University
Postdoctoral Fellow (Medicinal Chemistry), Memorial Sloan-Kettering Cancer Center

Research Expertise:
Drug Discovery | Reaction Invention | Organic Synthesis

My background is in synthetic organic chemistry with an emphasis in methods development and library synthesis. My research group is focused on developing novel reactions for the synthesis of biologically relevant molecular scaffolds. Our central hypothesis is to invent organic reactions to access biologically relevant molecular targets. Thus, I have a number of projects dedicated to the synthesis of small molecule libraries with a diverse array of biological properties and to the discovery of novel reaction pathways for the synthesis of complex molecular scaffolds.

Projects:
Novel Methods for the Synthesis of Small Heterocycles, Synthesis of Pharmacologically Relevant Molecular Scaffolds, Photoredox Catalysis for New Reaction Discovery, Isolation and Characterization of Natural Products from Peruvian Medicinal Plants, Development of Novel Drugs for the Treatment of Diabetes and Cardiovascular Diseases, Novel Alkaloid-like Scaffolds as Highly Potent Analgesics Without side Effects.

Member of:
American Chemical Society
Division of Organic Chemistry (ACS)

Recent Academic Projects:
Developing workshop-like certificate program for returning veterans in chemistry instrumentation.

Recent Publications:

Lizza JR, Moura-Letts G (2017) Solvent-Directed Epoxide-Opening with Primary Amines for the Synthesis of β-Amino Alcohols. Synthesis. 49:1231-1242.

Bakanas IJ, Moura-Letts G (2016) Synthesis of Novel Tetrasubstituted Pyrazoles from Substituted Hydrazines and β-Ketoesters. Eur J Org Chem. 32:5345-5349.

Lizza JR, Patel SV, Yang CF, Moura-Letts G (2016) Direct Synthesis of Cyanopyrrolidinyl β-Amino Alcohols for the Development of Diabetes Therapeutics. Eur J Org Chem. 30:5160-5168.

Neuhaus WC, Moura-Letts G (2016) Alumina-Promoted Synthesis of N-Aryl-1,2,4-Triazoles from Substituted Hydrazines and Imides. Tetrahedron Lett. 57:4974-4977.

Amos Mugweru

Professor
Chemistry & Biochemistry

mugweru@rowan.edu

Education:
BS (Chemistry), Kenyatta University
MS (Analytical Chemistry), University of Nairobi
PhD (Analytical/Electrochemistry), University of Connecticut
Postdoctoral (Glucose sensor array), Pennsylvania State University

Research Expertise:
Analytical Chemistry | Electrochemistry | Chromatography

My research interest is in two major areas: Fabrication, modification and characterization of electrode with nanoscale materials for use in electrochemical sensors/biosensors and biomedical sensing including heavy metals and other toxins from the environment.

I also am interested in synthesis, electrochemical characterization of new materials for hydrogen generation for future hydrogen economy.

Recent Publications:

Shore A, Mazzochette Z, Mugweru A (2016) Mixed valence Mn,La,Sr-oxide based magnetic nanoparticles coated with silica nanoparticles for use in an electrochemical immunosensor for IgG. Microchim Acta. 183:475-483.

Shore A, Kahi HK, Kamau GN, Mugweru A (2016) Electrochemical and Spectroscopic Characteristics of Artemisinin Anti-malaria Drug: Charge Transfer Redox Process. Int J Chem Kinet. 48:72-78.

Jain A, Ramanujachary KV, Jonnalagadda S, Mugweru A (2015) Conversion of fructose, glucose and sucrose to HMF using zirconium phosphate as catalyst. Appl Catal A. 489:72-76.

Aravind SSJ, Costa M, Pereira V, Mugweru A, Ramanujachary K, Vaden TD (2015) Evaluation of ball-milled molybdenum phosphide - graphite nanomaterials for HER catalytic activity. Appl Catal A. 490:101-107.

Jain A, Ramanujachary KV, Jonnalagadda S, Mugweru A (2015) Selective oxidation of 5-hydroxymethyl-2-furfural to furan-2,5- dicarboxylic acid over spinel mixed metal oxide catalyst. Catal Commun. 58:179-182.

Lark Perez

Associate Professor
Chemistry & Biochemistry

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http://users.rowan.edu/~perezla/home.html

Education:
BS (Chemistry), Long Island University
PhD (Organic Chemistry), Yale University
Postdoctoral (Medicinal Chemistry and Microbiology), Princeton University

Research Expertise:
Chemical Biology | Organic Synthesis | Medicinal Chemistry

The goal of my research is to apply synthetic organic chemistry to enhance the understanding of biological processes, especially cellular signaling. Applications of this general research focus include the study of bacterial quorum sensing, a process in which bacteria regulate gene expression, including virulence factors, through the synthesis and detection of small molecule signals and a major research focus of my group. The group's research in this area has led to the identification of several highly potent and drug-like inhibitors of bacterial virulence in gram-negative bacteria and has illuminated aspects of the biological regulatory circuits involved. We are fully equipped and experienced in chemical synthesis, medicinal chemistry and microbiology.

Member of:
American Chemical Society (ACS)
American Society of Microbiology (ASM)

Recent Publications:

Capilato JN, Philippi SV, Reardon T, McConnell A, Oliver DC, Warren A, Adams JS, Wu C, Perez LJ (2017) Development of a novel series of non-natural triaryl agonists and antagonists of the Pseudomonas aeruginosa LasR quorum sensing receptor. Bioorg Med Chem. 25:153-165.

Wu B, Capilato JN, Pham MP, Walker J, Spur B, Rodriguez A, Perez LJ, Yin K (2016) Lipoxin A4 augments host defense in sepsis and reduces Pseudomonas aeruginosa virulence through quorum sensing inhibition. FASEB J. 30:2400-2410.

O'Brien KT, Noto JG, Nichols-O'Neill L, Perez LJ (2015) Potent irreversible inhibitors of quorum sensing regulated virulence in Pseudomonas aeruginosa. ACS Med Chem Lett. 6:162-167.

Lu HD, Spiegel A, Hurley A, Perez LJ, Bassler BL, Semmelhack MF, Prud'homme RK (2015) Modulating Vibrio cholerae quorum sensing controlled communication using autoinducer-loaded nanoparticles. Nano Lett. 15:2235-2241.

Perez LJ, Karagounis TK, Hurley A, Bassler BL, Semmelhack MF (2014) Highly potent, chemically stable quorum sensing agonists for Vibrio cholerae. Chem Sci. 5:151-155.

Kandalam V. Ramanujachary

Professor
Chemistry & Biochemistry

chary@rowan.edu

Education:
MS (Chemistry), Andhra University, India
PhD (Chemistry), Indian Institute of Technology, Madras, India
Postdoctoral (Materials Science), Rutgers University

Research Expertise:
Inorganic Chemistry | Materials Chemistry | Medicinal Chemistry

Efficient means of producing Hydrogen gas
Bio-mass conversion to value added chemicals
Design, synthesis, and development of nano-pharmaceuticals and nano-sized nutritional supplements
Development of small molecule chemotherapeutics
Synthesis, structure and electronic properties of various binary and ternary oxides, sulfides, selenides, fluorides, nitrides, phosphides featuring transition metal ions
Development of novel catalytic materials

Honors and Awards:
Rowan University Research Award 2009

Member of:
American Chemical Society
Materials Research Society of Singapore
Luminescence Society of India

Recent Publications:

Shu Z, Axe Li, Jahan K, Ramanujachary KV, Kochersberger C (2015) Metal concentrations and distribution in paint waste generated during bridge rehabilitation. Sci Total Environ. 526:262-270.

Shu Z, Axe L, Jahan K, Ramanujachary K (2015) Field methods for rapidly characterizing paint waste during bridge rehabilitation. Chemosphere. 134:598-605.

Jyothirmayee A, Ramanujachary K, Mugweru A, Vaden T (2015) Molybdenum phosphide-graphite nanomaterials for efficient electrocatalytic hydrogen production. Appl Catal A Gen. 490:101-107.

Timothy D. Vaden

Associate Professor
Chemistry & Biochemistry

vadent@rowan.edu
users.rowan.edu/~vadent

Education:
BS (Chemistry), Midwestern State University
PhD (Chemistry), University of Illinois at Urbana-Champaign
Postdoctoral (Physical Chemistry), Oxford University
Postdoctoral (Environmental and Molecular Sciences), Pacific Northwest National Laboratory

Research Expertise:
Physical Chemistry | Biophysical Chemistry | Spectroscopy

My research utilizes tools of experimental physical chemistry to investigate metal ion-molecule interactions, characterize the proton solvation and conduction mechanisms in ionic liquid solutions, and protein stability in aqueous ionic liquids.

My lab has four main research projects underway:
Characterizing the solvation of protons in ionic liquids and the proton transportation mechanisms in acidic ionic liquid solutions.
Understanding the behavior of proteins and antibiotics in aqueous ionic liquid solutions.
Evaluating competitive metal ion chelation by small molecules in the presence of peptides.
Synthesizing and evaluating different hydrogen-generating electrocatalysts.

Member of:
American Chemical Society (www.acs.org)

Recent Academic Projects:
Investigations of TMG-biomolecule ILs for stabilizing proteins, investigations of ILs for enhancing antibiotic activities

Recent Publications:

Hanna SL, Huang JL, Swinton AJ, Caputo GA, Vaden TD (2017) Synergistic effects of polymyxin and ionic liquids on lipid vesicle membrane stability and aggregation. Biophys Chem. 227:1-7.

Borrell KL, Cancglin C, Stinger BL, DeFrates KG, Caputo GA, Wu C, Vaden TD (2017) An Experimental and Molecular Dynamics Study of Red Fluorescent Protein mCherry in Novel Aqueous Amino Acid Ionic Liquids. J Phys Chem B. 121:4823-4832.

Tran AT, Lam PT, Miller AM, Walczyk DJ, Tomlin J, Vaden TD, Yu L (2017) Proton transfer and esterification reactions in EMIMOAc-based acidic ionic liquids RSC Adv. 7:18333-18339.

Miller MC, Hanna SL, DeFrates KG, Fiebig OC, Vaden TD (2016) Kinetics and mass spectrometric measurements of myoglobin unfolding in aqueous ionic liquid solutions. Int J Biol Macromol. 85:200-207.

Chun Wu

Assistant Professor
Chemistry & Biochemistry/Molecular & Cellular Biosciences

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http://users.rowan.edu/~wuc/

Education:
BS (Chemistry), Xiamen University
MS (Analytical Chemistry), Xiamen University
MS (Computer Science), University of Delaware
PhD (Chemistry), University of Delaware

Research Expertise:
Computer-aided Drug Design | Molecular Dynamics Simulation | Molecular Modeling

The long-term goal of my research program is to gain mechanic insights into the structure, dynamics and function of pharmacologically important biomolecules. The insights enable rational drug design using a hierarchical virtual screening protocol including docking, molecular dynamics simulation, and free energy perturbation methods. My current research aims to: 1) develop novel cancer drugs that target DNA/RNA-quadruples, transporter (ABCB1) and kinase (MLK); 2) develop novel analgesic and anti-drug-addiction agents that target G-protein coupled receptors (GPCR) (Dopamine, TAAR1, Opioid) membrane receptors; 3) develop novel anti-virus drugs against herpes virus entry (gD); 4) develop diabetes drug that simultaneously targets inflammation (PPAR).

Honors and Awards:
2010, Travel Award, the IBBI (Isolated Biomolecules and Biomolecular Interactions) conference, Berlin, Germany
2004, Named to the Dean's list in recognition of Scholastic Excellence, University of Delaware
1999, Excellent Thesis, Xiamen University

Member of:
American Chemical Society (www.acs.org)

Recent Publications:

Readmond C, Wu C (2017) Investigating detailed interactions between novel PAR1 antagonist F16357 and the receptor using docking and molecular dynamic simulations. J Mol Graphics Model 77:205-217.

Mulholland K, Siddiquei F, Wu C (2017) Binding Modes and Pathway of RHPS4 to Human Telomeric G-quadruplex and Duplex DNA Probed by All-Atom Molecular Dynamics Simulations with Explicit Solvent. PCCP 19:18685-18694.

Sader S, Cai J, Muller A, Wu C (2017) Can human allergy drug fexofenadine, an antagonist of histamine (H1) receptor, be used to treat dog and cat? Homology modeling, docking and molecular dynamic Simulation of three H1 receptors in complex with fexofenadine. J Mol Graph Model 75:106-116.

Sader S, Wu C (2017) Computational analysis of Amsacrine resistance in human Topoisomerase II alpha mutants (R487K and E571K) using homology modeling and all-atom molecular dynamics simulation in explicit solvent, J Mol Graph Model 72:209-219.

Catherine Yang

Professor
Chemistry & Biochemistry/Molecular & Cellular Biosciences

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http://www.rowan.edu/colleges/csm/departments/chembio/facultyStaff/yang_002.html

Education:
BS (Chemistry), Zhejiang University, China
MS (Photochemistry), Tufts University
PhD (Biochemistry), Tufts University
Postdoctoral (Molecular Pharmacology), Harvard Medical School

Research Expertise:
Cancer Biochemistry | Protease Regulations | Pharmaceutical Sciences

De Novo Synthesis of Pyridine Drug Analogs
Regulatory Role of Prostate Specific Antigen in Prostate Cancer Progression
Rational Drug Design for Anti-Prostate Cancer
Molecular Recognition in Mutated DNA Targeted by Antitumor Drug
Allergy Vaccine Development
Anti-Diabetes Drug Development
Detoxifying Organo-nitrile Industry Toxin Using Enzyme Matrix

Honors and Awards:
Wall of Fame Teaching Award, Rowan University
Pioneer/Innovation Award, Rowan University

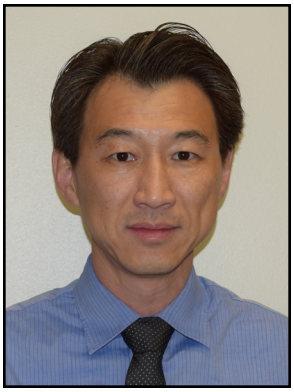
Member of:
American Chemical Society (ACS)
American Association for Cancer Research, Inc.
Biochemical Society
Medical Monitor Society

Recent Publications:
Goldberg KH, Yin AC, Mupparapu A, Retzbach E, Goldberg G, Yang CF (2016) Components in aquesou Hibiscu rosa-sinensis flower extract inhibit in vitro melanoma cell growth, J Trad Comp Medicine. 1-5.

Kojtari A, Shah V, Babinec J, Yang, C, Ji H-F (2014) Structure-Based Drug Design of Diphenyl α-Aminoalkylphosphonates as Prostate-Specific Antigen Antagonists, J Chem Information and Modeling. 54:2967-2979.

Lin JP, Yang CF (2013) Recent Advances in Micro/nano-particles for clinical detection of cancer biomarker. Analytical Methods. 5:5839-6248.

Yang CF, Zakreski R, Li W, Mou X, Iltchenco N, Cooperman, B (2012) Proteolytic Inhibition in Regulating the Insulin-like Binding Proteins in Prostate Cancer, Biochem & Physiol. 1:1-8.



Lei Yu

Associate Professor
Chemistry & Biochemistry

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Education:
BS (Chemistry), Jilin University
PhD (Chemistry), Changchun Institute of Applied Chemistry, Chinese Academy of Sciences
Postdoctoral (Analytical Chemistry), Oakland University
Postdoctoral (Analytical Chemistry), Clemson University

Research Expertise:
Electrochemistry | Electrochemical energy storage and conversion devices | Spectroscopy | Surface Characterization | Nanomaterials Characterization | Conductive polymers

My three major research projects are: (1) ionic liquids solutions of lithium ion and acids as advanced electrolyte solutions of lithium ion batteries and fuel cells; (2) electrochemical preparation of carbide-derived carbon and its application in supercapacitors, sensors, and biomedical devices; (3) quantities measurement and characterization of nanoparticles in complicated systems. Other projects include the development of biosensors and synthesis of soluble conducting polymers.

Member of:
American Chemical Society (www.acs.org)
The Electrochemical Society (www.electrochem.org)

Recent Academic Projects:
(1) Ionic liquid solutions' properties and applications as electrolytes; (2) electrochemical oxidation of metal carbides; (3) effects of nanoparticles on human and cancer cells.

Recent Publications:

Lam PH, Tran AT, Walczyk DJ, Miller AM, Yu L (2017) Conductivity, Viscosity, and Thermodynamic Properties of Propylene Carbonate Solutions in Ionic Liquids. J Mol Liq. 246:215-220.

Goderecci S, Kaiser E, Yanakis M, Norris, Scaturo J, Ozust R, Medina C, Waechter F, Heon M, Yu L, Lofland S, Demarest R, Krchnavek R, Caputo G, Hettinger J (2017) Silver oxide coatings with high silver-ion elution rates and characterization of bactericidal activity. Molecules. 22:1487.

Walczyk DJ, Mason DF, Palazzo BG, Norris ZA, McRae, N, Tran AT, Hettinger JD, Yu L (2017) Electrochemical Oxidation of Niobium and Tantalum Carbides in Aqueous Solutions. ECS Trans. 77:1599-1606.

Tran AT, Lam PH, Miller AM, Walczyk DJ, Tomlin J, Vaden TD, Yu L (2017) Proton transfer and esterification reactions in EMIMOAc-based acidic ionic liquids. RSC Adv. 7:18333–18339.

Camargo LGB, Palazzo BG, Taylor G, Norris ZK, Patel YK, Hettinger JD, Yu L (2015) Carbide-Derived Carbon by Electrochemical Etching of Vanadium Carbides. J Electrochem Soc. 162:H811-H815.