

Scott M. Reed

Campus Address

Department of Chemistry

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Sites: <https://pharmacogenomics.clas.ucdenver.edu> and <https://chemillusion.com>

Links: <https://linktr.ee/scott.reed>

Education

2001	Ph.D. Chemistry, University of Oregon
1996	M.S. Chemistry, University of Oregon
1994	B.A. Chemistry, Bard College, NY

Professional Experience

2025	Founder, Mollogic LLC – Generative AI for Chemists
2025	Coursera Instructor: Vibe Coding Fundamentals
2021 – 2023	Chair, University of Colorado Denver Chemistry
2017 – present	Professor, University of Colorado Denver
2016 – 2021	Associate Chair, University of Colorado Denver Chemistry
2015 – 2016	Visiting Professor, Biochemistry and Biophysics, Stockholm University
2011 – 2017	Associate Professor, University of Colorado Denver
2009 – 2011	Assistant Professor, University of Colorado Denver
2003 – 2008	Assistant Professor, Portland State University
2001 – 2003	Postdoc, Bioscience Division, Los Alamos National Laboratory

Awards/Recognitions

2025	Fulbright Specialist Program Awardee for AI in STEM lecture series
2025	NIH AI/ML AIM AHEAD Mentor
2025	CU Denver Advanced AI Innovation Project awardee
2024	Finalist in LLM Assisted Retrosynthesis HeroX competition
2017	CLAS Service Excellence Award
2015	Wenner-Gren Foundation Sabbatical Fellowship (1 of 8 in Sweden)
2013	CU Denver Excellence in Research and Creative Activities Award
2011	Global Research Experiences, Exchanges, and Training (GREET) Award
2011	Excellent Paper Award from IEEE NANO Conference
2002	Outstanding REU Mentor Award — Los Alamos National Laboratory
2000	Kenneth G. Hancock Memorial Scholarship (in Green Chemistry)
2000	University of Oregon Doctoral Fellowship

Refereed Publications (supervised students underlined)

“Augmented and Programmatically Optimized LLM Prompts Reduce Chemical Hallucinations.” **Scott M. Reed**, *Journal of Chemical Information and Modeling*, **2025**
<https://pubs.acs.org/doi/full/10.1021/acs.jcim.4c02322>

GTExome: Identifying Commonly Expressed Missense Mutations in the Human Genome Jill Hoffman, Henry Tan, **Scott M. Reed** *PLOS: One* **2024** DOI:
<https://doi.org/10.1371/journal.pone.0303604>

Assessing Protein Homology Models with Docking Reproducibility, Alexander P. Plonski, **Scott M. Reed** *Journal of Molecular Graphics and Modelling* **2023** 121, 108430. <https://doi.org/10.1016/j.jmgm.2023.108430>

An Active Learning Convolutional Neural Network for Predicting River Flow in a Human Impacted System, **Scott M. Reed** **2023** *Front. Water, Sec. Water and Artificial Intelligence* **2023** 5, 1271780. <https://doi.org/10.3389/frwa.2023.1271780>

Metabolovigilance: Associating Drug Metabolites with Adverse Drug Reactions Henry Tan; **Scott M. Reed** *Molecular Informatics* **2022** 41, 2100261.
doi.org/10.1002/minf.202100261

Biochemically prepared C-Reactive Protein conformational states differentially affect C1q binding CL Moon, AA Alnaas, Y Cai, **SM Reed**, MK Knowles *BBA Advances* 2, **2022**, 100058.

Demonstration of a Stereospecific Photochemical Meta Effect Hoai Pham, Madelyn Hunsley, Chou Yang, Haobin Wang, **Scott M. Reed** *Photochem* **2022**, 2, 69-76. doi.org/10.3390/photochem2010006

Dynamics of Serine-8 Side-Chain in Amyloid- β Fibrils and Fluorenylmethyloxycarbonyl Serine Amino Acid, Investigated by Solid-State Deuteron NMR. Liliya Vugmeyster, Dan Fai Au, Dmitry Ostrovsky, Dillon Ray Lee Rickertsen, **Scott M. Reed** *J. Phys. Chem. B.* **2020** 124, 4723–4731. doi: 10.1021/acs.jpcb.0c02490.

A Semester-Long, Organic Chemistry Laboratory Structured Around Unknown Analysis and Resynthesis as a Bridge to Guided-Inquiry Tanja Kovacevic, Austin Skinner, John D. Fisk, Vanessa Fishback, **Scott M. Reed** *Journal of Chemical Education*, 97, **2020**, 1633–1636.

Computational Study on the Removal of Photolabile Protecting Groups by Photochemical Reactions. Chou-HsunYang, Johanna Denne, **Scott M. Reed**, Haobin Wang *Computational and Theoretical Chemistry* **1151**, **2019**, 1–11.

Measurement and Multilayer Model of Cooling of Gold Nanoparticles: Transient thermorefectance experiments and multilayer analytical modeling. Brian G. Green, Stephen M. Budy, **Scott M. Reed**, Mark E. Siemens *Journal of Applied Physics* **124**, **2018**, 144301.

Polymer Mediated Layer-by-Layer Assembly of Different Shaped Gold Nanoparticles. Budy SM, Hamilton DJ, Cai Y, Knowles MK, **Scott M. Reed** *J. Colloid Interface Sci.* **2017** *487*, 336–347. doi: 10.1016/j.jcis.2016.10.022.

Lipid-Coated Gold Nanoparticles and FRET Allow Sensitive Monitoring of Liposome Clustering Mediated by the Synaptotagmin-7 C2A Domain. Hamilton DJ, Coffman MD, Knight JD, **Scott M. Reed**. *Langmuir*. **2017** *33*, 9222–9230. doi:10.1021/acs.langmuir.7b01397.

Conformational Changes in C-Reactive Protein Affect Binding to Curved Membranes in a Lipid Bilayer Model of the Apoptotic Cell Surface. Alnaas A.A., Moon C.L., Alton M, **Scott M. Reed**, Knowles M.K. *J. Phys. Chem. B* **2017** *121*, 2631–2639. doi: 10.1021/acs.jpcc.6b11505.

Bradley Reid, **Scott M. Reed** “Improved Methods for Evaluating the Environmental Impact of Nanoparticle Synthesis.” *Green Chemistry*, **2016**, *18*, 4263–4269. DOI: [10.1039/c6gc00383d](https://doi.org/10.1039/c6gc00383d)

Christopher M. Yakacki, Mohand Saed, Devatha Nair, Tao Gong, **Scott M. Reed** and Christopher N Bowman “Tailorable and Programmable LCEs Using a Two-stage Thiol-Acrylate Reaction.” *RSC Advances*, **2015**, *5*, 18997–19001. DOI: [10.1039/C5RA01039J](https://doi.org/10.1039/C5RA01039J)

Reid E. Messersmith, Greg J. Nusz and **Scott M. Reed** “Using the Localized Surface Plasmon Resonance of Gold Nanoparticles to Monitor Lipid Membrane Assembly and Protein Binding.” *Journal of Physical Chemistry C*, **2014**, *117*, 26725–26733. DOI: [10.1021/jp406013q](https://doi.org/10.1021/jp406013q)

Benjamin R. Ayres and **Scott M. Reed** “A Minor Lipid Component of Soy Lecithin Causes Growth of Triangular Prismatic Gold Nanoparticles.” *Environmental Science: Nano*, **2014**, *1*, 37–44. DOI: [10.1039/C3EN00015J](https://doi.org/10.1039/C3EN00015J)

Aundrea R. Piper-Feldkamp, Maria Wegner, Peter Brzezinski and **Scott M. Reed** "Mixtures of Supported and Hybrid Lipid Membranes on Heterogeneously Modified Silica Nanoparticles." *Journal of Physical Chemistry B*, **2013**, *117*, 2113-2122. DOI: [10.1021/jp308305y](https://doi.org/10.1021/jp308305y)

Min S. Wang, Reid E. Messersmith and **Scott M. Reed** "Membrane Curvature Recognition by C-Reactive Protein Using Lipoprotein Mimics." *Soft Matter*, **2012**, *8*, 7909-7918. DOI: [10.1039/C2SM25779C](https://doi.org/10.1039/C2SM25779C)

Min S. Wang and **Scott M. Reed** "Direct Visualization of Electrophoretic Mobility Shift Assays Using Nanoparticle-Aptamer Conjugates." *Electrophoresis*, **2012**, *33*, 348-345, DOI: [10.1002/elps.201100308](https://doi.org/10.1002/elps.201100308). (Highlighted as Featured Article by Wiley)

Min S. Wang, Joshua C. Black, Michelle K. Knowles and **Scott M. Reed** "C-Reactive Protein (CRP) Aptamer Binds to Monomeric but not Pentameric Form of CRP." *Analytical and Bioanalytical Chemistry*, **2011**. DOI: [10.1007/s00216-011-5174-1](https://doi.org/10.1007/s00216-011-5174-1).

Erica Curello, Min S. Wang and **Scott M. Reed** "Electrophoretic Mobility of Lipid Coated Nanoparticles: Understanding the Influence of Size and Charge on a Lipoprotein Particle Mimic." Proceedings of the ASME 2011 International Mechanical Engineering Congress & Exposition, **2011**, *2*, 809-816. <http://dx.doi.org/10.1115/IMECE2011-64158>

Min S. Wang and **Scott M. Reed** "Electrophoretic Mobility of Lipoprotein Nanoparticle Mimics." *IEEE Nano*, **2011**, 1652-1656. Received IEEE "Excellent Paper Award", DOI: [NANO.2011.6144448](https://doi.org/10.1109/NANO.2011.6144448).

Marilyn R. Mackiewicz, Heather L. Hodges, Anna L. Brown and **Scott M. Reed** "C-Reactive Protein Induced Rearrangement of Phosphatidylcholine on Nanoparticle Mimics of Lipoprotein Particles." *Journal of Physical Chemistry B*, **2010**, *114*, 5556-5562. DOI: [10.1021/jp911617q](https://doi.org/10.1021/jp911617q)

Christopher Norris, Paul R. Joseph, Marilyn Mackiewicz and **Scott M. Reed** "Minimizing Formaldehyde Use in the Synthesis of Gold-Silver Core-Shell Nanoparticles." *Chemistry of Materials*, **2010**, *22*, 3637-3645. DOI: [10.1021/cm9035693](https://doi.org/10.1021/cm9035693) (Highlighted on Nanowerk.com)

Benjamin R. Ayres, **Scott M. Reed**, William Garrick, Savyasaachi Murthy, Nehal Sanghvi and Amit Kulkarni "Chem Map: A Geographic Information Systems Web Page for Chemical Education." **2009**, *86*, 255. DOI: [10.1021/ed086p255](https://doi.org/10.1021/ed086p255)

Scott M. Reed, My-Trinh Do and Susan E. Masta “Parallel Factor Analysis of Spider Fluorophores.” *Journal of Photochemistry and Photobiology B: Biology*, **2008**, *93*, 149-154. [DOI:10.1016/j.jphotobiol.2008.07.014](https://doi.org/10.1016/j.jphotobiol.2008.07.014)

Sarita Sitaula, Marilyn R. Mackiewicz and **Scott M. Reed** “Gold Nanoparticles Become Stable to Cyanide Etch When Coated With Hybrid Lipid Bilayers.” *Chemical Communications*, **2008**, *26*, 3013-3015. [DOI: 10.1039/b801525b](https://doi.org/10.1039/b801525b)

Marilyn R. Mackiewicz, Benjamin R. Ayres and **Scott M. Reed** “Reversible, Reagentless Solubility Changes in Phosphatidylcholine-Stabilized Gold Nanoparticles.” *Nanotechnology Journal* **2008**, *19*, 115607. [DOI: 10.1088/0957-4484/19/11/115607](https://doi.org/10.1088/0957-4484/19/11/115607) (Highlighted on Nanotechweb.org)

Sarita Sitaula and **Scott M. Reed** “Porphyrin Conjugated to DNA by a 2'-Amido-2'-deoxyuridine Linkage.” *Bioorganic and Medicinal Chemistry Letters*, **2008**, *18*, 850-855.
[DOI: 10.1016/j.bmcl.2007.11.033](https://doi.org/10.1016/j.bmcl.2007.11.033)

Kindra Andrews, **Scott M. Reed** and Susan E. Masta “Spiders Fluoresce Variably Across Many Taxa.” *Biology Letters*, **2007**, *3*, 265-267. [DOI: 10.1098/rsbl.2007.0016](https://doi.org/10.1098/rsbl.2007.0016)
(Highlighted on Science News)

Suri S. Iyer, Aaron S. Anderson, **Scott M. Reed**, Basil Swanson and Jurgen G. Schmidt “Synthesis of Orthogonal End Functionalized Oligoethylene Glycols of Defined Lengths.” *Tetrahedron Letters*, **2004**, *45*, 4285-4288. [DOI:10.1016/j.tetlet.2004.04.004](https://doi.org/10.1016/j.tetlet.2004.04.004)

Suri S. Iyer, Aaron S. Anderson, **Scott Reed**, Basil Swanson and Jurgen G. Schmidt, *Tetrahedron Letters*, **2004**, *45*, 6207. *Corrigendum to Tetrahedron Letters*, **2004**, *45*, 4285-4288. [DOI:10.1016/j.tetlet.2004.06.041](https://doi.org/10.1016/j.tetlet.2004.06.041)

Karen M. Grace, Roy M. Goeller, W. K. Grace, Jerome D. Kolar, Leeland J. Morrison, Martin R. Sweet, L. G. Wiig, **Scott M. Reed**, Sabine A. Lauer, Kristin M. Little, Gerrie L. Bustos, Aaron S. Anderson and Basil I. Swanson “Reagentless Optical Biosensor.” *Proceedings of SPIE-The International Society for Optical Engineering*, **2004**, *5269*, 55-64. [DOI:10.1117/12.516372](https://doi.org/10.1117/12.516372)

Christina E. Inman, **Scott M. Reed** and James E. Hutchison “*In Situ* Deprotection and Assembly of *S*-Tritylalkanethiols on Gold Yields Monolayers Comparable to Those Prepared Directly from Alkanethiols.” *Langmuir*, **2004**, *20*, 9144-9150. [DOI: 10.1021/la049627b](https://doi.org/10.1021/la049627b)

James E. Hutchison, Evan W. Foster, Marvin G. Warner, **Scott M. Reed**, Walter W. Weare, William Buhro and Heng Yu "Cluster and Polynuclear Compounds. Triphenylphosphine-Stabilized Gold Nanoparticles." *Inorganic Synthesis*, **2003**, *34*, 228-232.

Rachel K. Smith, **Scott M. Reed**, Jason D. Monnell, Penelope A. Lewis, Robert S. Clegg, Kevin F. Kelly, Lloyd A. Bumm, James E. Hutchison and Paul S. Weiss "Phase Separation Within a Binary Self-Assembled Monolayer on Au{111} Driven by an Amide-Containing Alkanethiol." *Journal of Physical Chemical B*, **2001**, *105*, 1119-1122. (Cover)

LeRoy H. Klemm and **Scott M. Reed** "Free-Radical 4-Nitrophenylation of Thieno[2,3-b]pyridine. Part 3: Consideration of Mechanistic and Selectivity Factors Involved in the Substitution Process." *Journal of Heterocyclic Chemistry*, **2001**, *38*, 1433-1439.

Penelope A. Lewis, Rachel K. Smith, Kevin F. Kelly, Lloyd A. Bumm, **Scott M. Reed**, Robert S. Clegg, James E. Hutchison and Paul S. Weiss "The Role of Buried Hydrogen Bonds in Self-Assembled Mixed Composition Thiols on Au{111}." *Journal of Physical Chemical B*, **2001**, *105*, 10630-10636.

Scott M. Reed, Timothy J. R. Weakley and James E. Hutchison "Polymorphism in a Conformationally Flexible Substituted Anthraquinone; A Crystallographic, Thermodynamic, and Molecular Modeling Study." *Crystal Engineering*, **2000**, *3*, 85-99.

Marvin G. Warner, **Scott M. Reed** and James E. Hutchison "Biphasic Synthesis of Thiol Stabilized Water Soluble Gold Nanoparticles." *Chemistry of Materials*, **2000**, *12*, 3316-3320.

Scott M. Reed and James E. Hutchison "Green Chemistry in the Organic Teaching Laboratory: An Environmentally Benign Synthesis of Adipic Acid." *Journal of Chemical Education*, **2000**, *77*, 1627-1629.

Walter W. Weare, **Scott M. Reed**, Marvin G. Warner and James E. Hutchison "Improved Synthesis of Small ($d_{\text{CORE}} = 1.5\text{nm}$) Phosphine-Stabilized Gold Nanoparticles." *Journal of the American Chemical Society*, **2000**, *122*, 12890-12891.

Robert S. Clegg, **Scott M. Reed**, Rachel K. Smith, Bridgette L. Barron, Jamieson A. Rear and James E. Hutchison "Two-Dimensional Models of Peptide Interactions: The Interplay of Peptide and Hydrophobic Interactions in Self-Organized Molecular Assemblies." *Langmuir*, **1999**, *15*, 8876-8883.

James E. Hutchison, Leif O. Brown, Jana L. Mooster, **Scott M. Reed**, Mary E. Schmidt, Laura I. Clarke and Martin N. Wybourne “Nanoscale Patterns of Metal Nanoparticles Chemically-Assembled on Biomolecular Scaffolds: Assembly, Stability, and Electron Transport Properties.” *Materials Research Society Proceedings*, **1999**, 582.

Robert S. Clegg, **Scott M. Reed** and James E. Hutchison “Self-Assembled Monolayers Stabilized by Three-Dimensional Networks of Hydrogen Bonds.” *Journal of the American Chemical Society*, **1998**, 120, 2486-2487.

Grants, External

09/2023 - 08/2027	\$476,947 NIH NIGMS 1R15GM151726-01 “Identifying Genetic Contributions to Adverse Drug Reactions” lead PI
5/2021 – 4/2026	\$418,613 NIH 5R25EB029342-02 Rocky Mountain Summer Research Education Experience. Role: lead PI (Multiple PI grant, Reed and Kimbrough)
8/2021 – 12/2022	\$24,000 “Surface Modification Impacts on Electrochemical Energy Storage in Nanoparticles”, National Renewable Energy Laboratory, (subcontract to student advisee, Ryan Doeren).
2019	\$700, Office of Research Services Travel Grant, Funding to attend the “Teach the Teachers Workshop.”
8/2017 – 7/2020	NSF-MRI- 1726947 MRI: Acquisition of High-Sensitivity, Solids Capable 400 MHz NMR for Research and Undergraduate Training at the University of Colorado at Denver. Role: lead PI (Multiple PI grant, Reed and Vugmeyster)
8/2015 — 7/2019	\$540,000 NIH R25 “Colorado Undergraduate Research in Environmental Health Sciences” Intended to increase underrepresented students in research in Environmental Health Sciences. (Role: Co-Investigator and representative to downtown campus, PI: Brown, CU DENVER)
8/2015 — 7/2016	\$28,000 Wenner-Gren Foundation “The Role of Membrane Nanostructure in Membrane Fusion.” Salary support for sabbatical research at Stockholm University.

8/2015 — 7/2016	\$8,600 Wenner-Gren Foundation, Housing stipend to support sabbatical at Stockholm University.
7/2015 — 6/2016	\$400,000 “MRI: Acquisition of Combined Spinning Disc Confocal/Atomic Force Microscopy System.” Collaborative with CSU and DU. (Role: Facility User, PI: Matt Kipper, CSU)
8/2014 — 7/2017	\$18,500 The Jean Dreyfus Boissevain Lectureship in Chemistry at CU DENVER. Supported two UG researchers and visiting lecturer.
1/2013 — 12/2016	\$355,925 NIH 2R15GM088960-02 “Interactions of C-Reactive Protein with Highly Curved Lipid Membranes.”
5/2011 — 12/2012	\$8800 American Chemical Society, Global Research Experiences, Exchanges, and Training (GREET) Award for Undergraduate / mentor pairs.
12/2011 — 12/2012	Bioscience Discovery Evaluation Grant Program “Apoptotic-like liposomes containing tumor associated antigen plus Poly IC” (Role: Co-PI, Lead PI: Jakubzick, National Jewish Health)
12/2010 — 12/2012	\$90,772 Mentor to Min S. Wang recipient of AHA postdoctoral fellowship: “The role of nanoscale membrane structure in CRP binding, isoform conversion, and complement activation.” (Role: Mentor)
9/2010 — 8/2013	\$395,000 NSF - Biosensors Program “Collaborative Research: A Nanostructured Model of the Apoptotic Cell Surface.” (Co-PI with Knowles, University of Denver) budget to CU DENVER: \$210,593
9/2010 — 12/2011	\$30,000 Office of Naval Research “Enhanced Biochemical Imaging enabled by Holographic Optical Tweezers.” (Role: PI on subcontract from Oregon State University, lead PI: McIntyre, Oregon State University).
9/2009 — 8/2012	\$229,708 NIH 1R15GM088960 “Interactions of C-Reactive Protein Isoforms With Oxidized Lipid Membranes.”
9/2009 — 9/2012	\$238,255 NSF IOS-0920768 “Collaborative: Spider Fluorescence as a Potential Visual Signal: Assessing effects of age and sex on

fluorophore expression.” (Co-PI with Masta, Portland State University) Budget to CU DENVER: \$55,947.

- 2/2009 — 2/2010 \$240,682 ONAMI Nanometrology and Nanoelectronics Program “Biochemical Sensors And Integrated Measurement Platform Controlled by Optical Tweezers And Microfluidics.” (Role: Co-PI with McIntyre and Ostroverkhova, Oregon State University, Shalini Prasad, Arizona State University). \$21,856 subcontract to CU DENVER.
- 2009 \$1,246,295 NSF - IGERT - “Interdisciplinary Materials Program to Accelerate the Transition from Student to Scientist.” Joint program with University of Oregon, Oregon State University, and Portland State University. One graduate student (Benjamin Ayres) supported by grant for two years. (Role: Host lab, lead PI: Johnson, University of Oregon)
- 2008 \$143,118 ONAMI Nanometrology and Nanoelectronics Program “Breaking The Diffraction Barrier By Selective Control Of Near- And Far-Field Optical Modes.” (Role: Co-PI with La Rosa and Moeck, Portland State University; Vu, Oregon Health Science University)
- 2008 \$30,000 Institute for Complex Adaptive Matter (ICAM) - “Emergent Properties of Hierarchical Nanostructures in Biological and Synthetic Systems.” (Role, Co-PI with Melik Demirel)
- 2008 \$5000 Milton Smith and Evelyn Kambach Fund for Emerging Technology.
- 2007 \$100,000 Office of Naval Research Grant number: 00014-07-1-0457: Nanometrology and Nanoelectronics Initiative, “A Molecular Approach to Monitoring Cardiovascular Disease.”
- 2007 \$93,702 DOD - DURIP “Probing Bio-Electronic Surfaces and Interfaces at Single Molecule Sensitivity.” (Role: Co-PI with La Rosa and Yan, Portland State University)
- 2007 \$10,000 NorthWest Academic Computing Consortium (NWACC) “Software to Support Nanoscience Outreach Education.”

2007	\$84,733 Army Research Laboratory-Oregon Nanoscience and Microtechnologies Institute (ONAMI) Nanoarchitectures for Enhanced Performance Center. "Ultra Low-Power, 3D Nanosensor Web." (Role: Co-PI with Caruthers, Prasad, Hammerstrom and Narendra, Portland State University and Fiez, Mayaram, Dhagat and Jander, Oregon State University)
2007	\$30,000 Camille and Henry Dreyfus Foundation Special Grants Program, "Chem Map: Mapping the Chemistry of Everyday Materials."
2006	\$396,000 NSF - REU: "Application of Microscopy and Microanalysis to Multidisciplinary Research." Role: Hosted two students, (Role: Host lab, PI: Jiao, Portland State University)
2005	\$280,358 Air Force Research Laboratory: Safer Nanomaterials and Nanomanufacturing Institute, "Biocompatible Nanomaterials: Lipid-Templated Gold Nanorods." \$280,358 subcontract to PI. (Role: PI on sub-contract)
2005	Center for Integrated Nanotechnology (CINT) "Fluorescence Correlation Spectroscopy of Proteins Contained in Sol-Gel Nanocavities." User facility proposal.
2005	\$25,000 Support for organizing a workshop on "Biologically Inspired Nanomaterials." received from Pennsylvania State University, Portland State University, and ICAM. (Role, Co-PI with Melik Demirel, Penn State)
2004	\$106,500 Department of Defense, Breast Cancer Concept Award "Nanoparticle Enhanced Optical Diagnosis and Treatment of Breast Cancer."
2003	\$30,000 Oregon Medical Research Foundation "Gold Nanoparticle-Enhanced Photodynamic Therapy."

Courses Taught

Vibe Coding Fundamentals
Biochemistry, CHEM 3810
Molecular Informatics, CHEM 4858
Python Workshop
Majors/Honors Organic Chemistry, CHEM 3491
Majors/Honors Organic Chemistry Lab, CHEM 3498
Organic Chemistry 1, CHEM 3411
Organic Chemistry 2, CHEM 3421
Organic Chemistry 2 Lab, CHEM 3428
Elements of Organic Chemistry, CHEM 331 (PSU)
Elements of Organic Chemistry Lab, CHEM 327 (PSU)
Advanced Organic Chemistry, CHEM 5310
Seminar Preparation, CHEM 4600/5600
Seminar Preparation, CHEM 4610/5610
Seminar Preparation, CHEM 407/507 (PSU)
Bioconjugate Chemistry, CHEM 500 (PSU)
Chemistry of Nanomaterials, CHEM 500 (PSU)
Chemistry Research Practicum, Research Experience for
Teachers: Biology and Nanoscience, CHEM 5073