Nicholas E. Grossoehme

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Education

B.S., Chemistry/Biology, May 2002; Midland Lutheran College, Fremont, NE

Ph.D., Chemistry, June 2007; Dartmouth College, Hanover, NH

Experience

2015-Present	Associate Professor of Chemistry	Winthrop University, Rock Hill, SC
2010 – 2015	Assistant Professor of Chemistry	Winthrop University, Rock Hill, SC
2007-2010	Post-doctoral Research Indiana University, Bloomington, IN	Advisor: David Giedroc
2002-2007,	Graduate Research Dartmouth College, Hanover, NH	Advisor: Dean Wilcox

Teaching Experience

Winthrop University

- Introductory Chemistry (Formats: traditional, hybrid, and 100% online)
- General Chemistry
- Honors General Chemistry Laboratory
- Biochemistry Laboratory
- Inorganic Chemistry Laboratory
- Biochemistry I
- Biochemistry II
- Chemistry and Biochemistry Journal Club
- Nutritional Biochemistry of the Mediterranean Diet
- Journal Club

Dartmouth College (Teaching Assistantship)

- General Chemistry 1 & 2 Laboratory
- General Chemistry 1 (Course TA and primary lecturer for 6 lectures)
- Biochemistry Laboratory

Invited Lectures

- East Carolina University – February 2011
- University of South Carolina – March 2011
- American Institute of Chemical Engineers – April - 2011
- Midland University – April 2011
- Furman University – July 2011
- Carolina-Piedmont Section of the ACS – 2011 and 2013.

- College of Charleston – September 2014
- Indiana University – October 2014
- University of South Carolina at Lancaster – October 2015

Publications (Underlined Names Denotes Undergraduate Students**)**

1. Rachel A. Johnson, Olivia M. Manley, Anne M. Spuches, **Nicholas E. Grossoehme**. Dissecting ITC Data of Metal Ions Binding to Ligands and Proteins, *Biochimica et Biophysica Acta*; 2015. DOI 10.1016/j.bbagen.2015.08.018.
2. Destinee K. Johnson, Michael J. Stevenson, Zayed A. Almadidy, Sharon E. Jenkins, Wilcox, D.E., **Grossoehme, N.E.** Stabilization of Cu(I) for Binding and Calorimetric Measurements in Aqueous Solutions; Dalton Transactions, Dalton Trans. 2015, 44, 16494-16505.
3. Campanello, G. C., Ma, Z., **Grossoehme, N. E.**, Guerra, A. J., Ward, B. P., DiMarchi, R. D., Ye, Y., Dann Iii, C. E., and Giedroc, D. P. Allosteric Inhibition of a Zinc-Sensing Transcriptional Repressor: Insights into the Arsenic Repressor (ArsR) Family, *Journal of Molecular Biology*; 2013, 425, 1143-1157.
4. **Nicholas E. Grossoehme**, David P. Giedroc. "Illuminating Allostery in Metal Sensing Proteins." In *Methods in Molecular Biology*, Wlodek Bujalowsi, Humana Press, NYC. *2012, 875 (1), 195-192.*
5. **Nicholas E. Grossoehme**, David P. Giedroc. "Allosteric coupling between transition metal binding sites in homooligomeric metal sensor proteins." In *Methods in Molecular Biology*, Aron Fenton, Humana Press, NYC. 2012, 796 (1), 31-51.
6. **Nicholas E. Grossoehme**, TE Kehl-Fie, Zhen Ma, KW Adams, DM Cowart, RA Scott, EP Skaar, David P. Giedroc. Control of copper resistance and inorganic sulfur metabolism by paralogous regulators in *Staphylococcus aureus*. J. Biol. Chem; 2011, 286, 13522-13531.
7. Fredrik Sommer, Janette Kropat, **Nicholas E. Grossoehme,** Davin Malasarn, Xiaohua Chen, David P. Giedroc, Sabeeha S. Merchant. Two metal-responsive domains in the nutritional copper sensor in *Chlamydomonas*. *Plant Cell*; 2010, 22, 4098-4113.
8. **Nicholas E. Grossoehme**, Anne M. Spuches, Dean E. Wilcox. "Applications of Isothermal Titration Calorimetry in Bioinorganic Chemistry." *J. Biol. Inorg. Chem;* 2010, 15, 1183-1191.
9. **Nicholas E. Grossoehme**, Kehl-Fie TE, Ma Z, Adams KW, Coward DM, Scott RA, Skaar EP, David Giedroc. Control of copper resistance and inorganic sulfur metabolism by paralogous regulators in *Staphylococcus aureus*. *J. Biol. Chem. Soc.*; 2011, 286, 13522-13531.
10. **Nicholas E. Grossoehme**, Lichun Li, Sarah C. Keane, Pinghua Liu, Charles Dann III, Julian Liebowitz, David Giedroc. N protein N-terminal Domain (NTD) specifically bind to the transcriptional regulatory sequence (TRS) and melts TRS-cTRS duplexes. *J. Mol. Biol.*; 2009; 394, 544-557.
11. Zheng, M., Cooper, D.R., **Grossoehme, Nicholas .E**., Yu, M., Hung, L.W., Cieslik, M., Derewenda, U., Lesley, S.A., Wilson, I.A., Giedroc, D.P., Derewenda, Z.S. Structure of Thermotoga maritima TM0439: implications for the mechanism of bacterial GntR transcription regulators with Zn^{2+}-binding FCD domains. *Acta. Crystallogr., Sect.D* 2009; 65, 356-365.
12. **Nicholas E. Grossoehme**, David Giedroc. Energetics of allosteric negative coupling in the zinc sensor *S. aureus* CzrA. *J. Am. Chem. Soc.*; 2009, 131, 17860-17870.
13. David P. Giedroc and **Nicholas E. Grossoehme**. Metal Ions and the thermodynamics of RNA folding. In *Nucleic Acid-Metal Ion Interactions,* Nicholas V. Hud, RSC Publishing, Cambridge, UK 2009; 180-220.
14. **Nicholas E. Grossoehme**, Scott B. Mulrooney, Robert P. Hausinger, Dean E. Wilcox "Thermodynamics of Ni^{2+}, Cu^{2+} and Zn^{2+} Binding to the Urease Metallochaperone UreE." *Biochemistry*; 2007, 46, 10506-10516.
15. **Nicholas E. Grossoehme**, Shreeram A. Akilesh, Mary Lou Guerinot, Dean E. Wilcox. "Metal-Binding Thermodynamics of the Histidine-Rich Sequence from the Metal-Transport Protein IRT1 of *Arabidopsis thaliana*." *Inorganic Chemistry*; 2006; 45, 8500-8508.

Scientific Meetings and Workshops

- March 2002 ACS meeting, Orlando, FL (poster presentation)
- June 2005 Cell Biology of Metals Gordon Research Conference, Lewiston, ME (poster presentation)
- July 2005 Current Topics in Microcalorimetry, Boston, MA (poster Presentation)
- Aug 2005 12th International Conference on BioInorganic Chemistry (ICBIC), Ann Arbor, MI (poster presentation)
- July 2007 13th International Conference on BioInorganic Chemistry (ICBIC), Vienna, Austria (poster presentation)
- June 2008 11th Annual International Nidovirus Symposium. Oxford, UK. (Oral Presentation)
- Aug 2009 14th International Conference on BioInorganic Chemistry (ICBIC), Nagoya, Japan (poster presentation)
- Oct. 2009 Gibbs Conference for Biological Thermodynamics Carbondale, IL (poster presentation)
- April 2011 South Carolina Academy of Science Annual Meeting. Orangeburg, SC. (Oral Presentation)
- April 2012 Southeast Regional Noyce Conference. Greenville, SC
- May 2012 TA Instruments Users Forum. New Orleans, LA. (poster presentation)
- Aug 2012 Biennial Conference on Chemical Education. State College, PA.
- Nov 2012 National Science Teachers Association (NSTA) Regional Meeting. Atlanta, GA.
- Jan 2013 ACS Leadership Training, Dallas TX
- Feb 2013 Suddath Symposium. Atlanta, GA
- June 2013 Netscope Partnership Conference. Rock Hill, SC. (Oral Presentation – "Student Oriented Expectations of Online Science Courses: Introductory College Chemistry Case Study"
- June 2013 ASBMB Grant Writing Workshop, Arlington, VA. (oral presentation – "RitR, a Potential Iron and Redox Stress Sensor in Streptococcus Pneumonia")
- Feb 2014 Winthrop University TLC conference (oral presentation – "Welcome to WUtopia! Motivation, Design, and Implementation of a New Online Learning Platform at Winthrop")
- March 2014 National Meeting of the American Chemical Society (oral presentation - "Development of an Aqueous Copper (I) Stabilizing System for Titration Experiments")
- Nov 2014 AAC&U Meeting. Atlanta, GA.

Professional Stewardship

- Panel Member for Indiana University Career Development Symposium. August 6, 2015
- Active mentor of Winthrop STEM Educators.
- Mentor for Winthrop University Chapter of the Student Affiliates of the American Chemical Society (beginning 8/14)
- Active participant in continuing education programs for High School science teachers.
- Actively collaborations with the EagleSTEM office:
    a. 2011 GLI Grant
    b. 2013 and 2014 Project SEED
    c. Extracurricular activities (e.g. planned and led a hiking trip for the Scholars in the Fall of 2013)
- Notable Winthrop University Committees

    a. Institutional Biosafety Committee
        i. Member 2013-present
        ii. Chair 2014-2015
    b. Undergraduate Research Advisory Committee
        i. Member 2011-present
        ii. Chair 2015-present
- Executive Committee of Carolina-Piedmont American Chemical Society section.
    a. Member at large 2011-2012
    b. Chair Elect 2013
    c. Chair 2014
    d. Immediate Past Chair 2015
- TEA Fellow Program
    a. Workshops (2012, 2014, 2015)
    b. TEA Fellow Mentor (2014, 2015)
- Member ACS, AAAS, NSTA
- Alpha Chi Sigma Faculty Sponsor (2014-present)
- Zombie Tag Faculty Sponsor
- Volunteer tutor for college chemistry students at the Academic Success Center (2011-present)
- Residence Life Faculty Partner (2011-present)
- Active Mentor of McNair Scholars (2 former and 2 current)
- Department Library Liaison
- Departmental Study Abroad Coordinator
- Study Abroad Course Development and Implementation (Nutritional Biochemistry of the Mediterranean Diet - Spring 2015)
- Mentor for High School Research Students
    a. ACS Project SEED (2013 and 2014)
    b. Governors School summer research student (2014)
- Annual Guest Lecturer
    a. WRIT 566 – Grant Writing
    b. CHEM 305 - Biosafety
- Peer Reviewer for scientific journals
    a. Nature Chemical Biology
    b. Inorganic Chemistry
    c. Journal of the American Chemical Society
    d. Journal of Biological Inorganic Chemistry
    e. Journal of Inorganic Biochemistry
    f. Dalton Transactions
    g. PLOS One
    h. Biochimica and Biophisica Acta

Outreach Activities

- University Faculty Partner for South Pointe High School chemistry
- Science Demonstrations at Rock Hill Elementary Schools
- Coordinator of ACS Project SEED at Winthrop University
- Volunteer mentor for SC Governor's School Science Students
- Career Fair Coordinator for CP ACS

In Preparation Publications (Underlined Names Denotes Undergraduate Students)

1. Olivia Manley, Paisley Trantham, Katie Bolling, Denise Peppers, Laruen Rhodes, Jessica Gasparik, Pamela Riggs,-Gelasco, **Nicholas E. Grossoehme**. "The Conserved "M-site" is the Regulatory Metal Binding Site in NUR." Biochemistry; Planned Submission Dec 2015.
2. Zayed A. Almadidy, Sierra Hardee, Dakota Hawkins, **Nicholas E. Grossoehme**. Evaluation of a Hydroxide-linked Reduction of Cu(II) in the Presence of Strong Cu(I) Chelators. *Inorganica Chimica Acta*. Planned submission Dec. 2015.
3. Chris Phillips, David Burlinson, Amy Moore, Marguerite Doman, **Nicholas E. Grossoehme**. "Supplemental Learning Artifacts Enhance Student Efficiency in an Online Learning Environment." Journal of Online Learning; planned submission Oct. 2015.

Ongoing Collaborative Research Projects (Interdepartmental Collaborator in Parentheses)

- Design of Copper (I) stabilizing ligands for aqueous titration experiments.
- Biophysical Characterization of metal sensory proteins from *S. coelicolor.*
- Characterization of a potential iron and redox sensor in *S. pneumonia*.
- Exploring the role of Ciona Intestinalis FoxO in heart tissue regeneration (Heather Evans-Anderson, Biology)
- Development of Mathematica-based Fitting Protocols for ITC Data that Involves Complex Speciation (Zach Abernathy, Math)
- Development of WUtopia!, an interactive online learning platform for Winthrop faculty to promote student engagement in non-traditional (online, flipped, hybrid) classes. (Marguerite Doman, Computer Science and Michelle Wolf, University College)
- Development of a student authored Introductory Chemistry Textbook. This project has evolved as a major long term goal of the WRIT 566 course. (Sarah Spring, English)

Awards and Honors

- Winthrop University Joe B. Davis Award. May 2015
- Winthrop University Outstanding Junior Faculty Award. May 2014
- Honorary Inductee of the National Residence Hall Honorary. 2014
- Winthrop University Presidential Citation. April 2013.
- Midland University Young Alumni of the Year. April 2011.
- Sigma Xi Member, June 2007.
- GAANN Fellowship Recipient 2006-2007, Dartmouth College.
- Wolfenden Teaching Award, May 2007, Dartmouth College.
- Nominee (2 times) – College of Arts and Sciences Undergraduate Research Mentor Award
- Nominee – Lynn Harand Outstanding Advisor Award in the College of Arts and Sciences

Grants

- Scientific Advocacy Network of EPSCoR/IDeA (1/15-6/15). Identifation of FoxO Binding Site in Ciona Intestinalis $10000
- American Chemical Society (6/14 – 8/14). Winthrop University Project SEED. $10,000
- Winthrop University Research Council Grant (5/14 – 5/15). Iron and Redox Sensing in S. pneumonia. $4000
- Winthrop University Research Council Grant (5/14 – 5/15). Enhancement Expansion to WUtopia!.$5600
- American Chemical Society (6/13 – 8/13). Winthrop University Project SEED. $10,000
- EPSCoR GEAR:RE (5/13 – 5/14). Exploring a Potential Link Between Phosphorylation and Iron Homeostasis in *S. pneumonia*. $16,060.
- Winthrop University Research Council Grant (5/13 – 5/14). Synthesis and Characterization of Thiacrown Ether Based Copper (I) Stabilizing System. $3500
- Winthrop University Research Council Grant (5/13 – 5/14). Development of an Interactive

Questioning Artifact to Enhance Online Learning Platforms at Winthrop University. $4850.
- Winthrop University GLI Engagement Grant (3/2012). Multicultural Experiences in Science Integration of Chinese Culture In and Out of the Laboratory. $500
- Research Corporation for Scientific Advancement Grant (Award 20160 7/11-7/13). Biophysical Characterization of Metal Homeostasis in Multiple Antibiotic Producing *Streptomyces coelicolor*. $35,000

Research Students Mentored

(name, graduation year, current position)

- Sharon Jenkins, 2011, MAT Winthrop University (2013). Currently teaching high school biology in Waxhaw, NC)
- Paisley Trantham, 2012, Chemistry Graduate School University of Virginia
- Katie Bolling, 2012, Attending Medical School at USC School of Medicine
- Rebecca Toor, 2012, Pharmacy School at Lecom School of Pharmacy
- Zayed Almadidy, 2012, Attending MUSC Medical School (Class Vice President)
- Amy Moore, 2013, Completed MAT at Winthrop University. Currently teaching high school chemistry in Charlotte, NC
- Destinee Johnson, 2014. Completed MAT at Stanford University. Teaching high school chemistry in Anderson, SC
- Lauren Rhodes, 2014. Attending Veterinary School at Tuskegee.
- Jessica Gasparik, 2014. Pursuing Nursing Degree,
- Denise Peppers, 2015. Chemist at InChem, Rock Hill, SC
- Lucas Boncorddo, 2015. Applying to Dental School
- Matthew Ingersol, 2015
- Jesse McLaughlin, 2015
- Zoe Vernon, 2016
- Ashley Williams, 2016
- Olivia Manley, 2016
- Cardessia Gibbs, 2016
- Mikala Smith, 2017
- Margaret Whitley, 2017
- Macey Bosley, 2017
- Jessica Zielinski 2018
- Carolina Pham 2018
- Sierra Hardee 2018
- Dakota Hawkins 2018
- Autumn Leggins 2018

Student Achievements and Awards

- Rebecca Toor – 2011 CP-ACS Student Leadership Award
- Paisley Trantham – 2011 BigSURS - Oral Presentation Award
- Sharon Jenkins – 2013 Recipient of KSTF Teaching Fellowship (Winthrop's first recipient)
- Destinee Johnson – 2013 SERMACS – 1st place oral presentation
- Destinee Johnson – 2014 CP-ACS Leadership Award
- Destinee Johnson – 2015 Recipient of KSTF Teaching Fellowship
- Denise Peppers – 2014 SAEOPP – 1st place oral presentation in Chemistry
- Lucas Boncorddo - 1st Place Oral Presentation – 2015 SCAS

- Lucas Boncorddo - Outstanding Male Scientist – 2015 SCAS

Research Student Presentation – off campus (O = oral; P = poster)

- 2011 SERMACS – Paisley Trantham (P), Zayed Almadidy (P)
- 2012 Big SURS – Paisley Trantham (O), Katie Bolling (O), Sharon Jenkins (P), Destinee Johnson (P), Zayed Almadidy (P,O)
- 2012 Charlotte Area Science Network 10th Anniversary Celebration –
    - Amy Moore (P) "Development of an Online Learning Platform for Introductory Chemistry from a Student Perspective." - "Calorimetric and Colorimetric Investigation of Cu(I) Binding Events"
    - Amy Moore (P) "Development of an Online Learning Platform for Introductory Chemistry from a Student Perspective."
- 2013 Suddath Symposium – Destinee Johnson (P) "Calorimetric and Colorimetric Investigation of Cu(I) Binding Events"
- 2013 SE Regional Noyce Conference – Amy Moore (O) - "Development of an Online Learning Platform for Introductory Chemistry from a Student Perspective."
- 2013 Big SURS
    - Destinee Johnson (O) - "Calorimetric and Colorimetric Investigation of Various Cu(I) Binding Ligands"
    - Lauren Rhodes (O) – "Characterization of the DNA Binding Properties of the Nickel Uptake Regulator of *Streptomyces coelicolor*"
- 2013 Charlotte-Piedmont Section Meeting of the American Chemical Society – Destinee Johnson (P) "Calorimetric and Colorimetric Investigation of Cu(I) Binding Events"
- 2013 Netscope Partnership Conference – Amy Moore (O) "Student Oriented Expectations of Online Science Courses: Introductory College Chemistry Case Study"
- 2013 ACM-SIGITE Conference on IT Education and IT Research - David Burlinson (P) - "Coordinating Artifacts in an Online Course Delivery System"
- 2013 SERMACS – Destinee Johnson (O) "Calorimetric and Colorimetric Investigation of Cu(I) Binding Events"
- 2014 South Carolina TRiO McNair Research Symposium – Denise Peppers (O) "Purification and Characterization fo Nickel Uptake Regulator (NUR) and Single NUR Mutants from *S. coelicolor*"
- 2014 South Carolina TRiO McNair Research Symposium – Olivia Manley (O) "Cloning of Nickel Uptake Regulator Mutants from *S. coelicolor*"
- 2014 SEAOPP – Denise Peppers (O) "Purification and Characterization fo Nickel Uptake Regulator (NUR) and Single NUR Mutants from *S. coelicolor*"
- 2014 SEAOPP – Olivia Manley (O) "Cloning of Nickel Uptake Regulator Mutants from *S. coelicolor*"
- 2015 South Carolina Academy of Science – Lucas Boncorddo (O) "Identification of FoxO Target Genes in *C. intestinalis*".
- 2015 South Carolina Academy of Science – Mikala Smith (P) "Cloning and expression of the DNA binding domain of FoxO from *C. intestinalis* that contains an N terminal nuclear localization signal"
- 2015 National Meeting of the ACS – Denise Peppers (O) "Purification and Characterization fo Nickel Uptake Regulator (NUR) and Single NUR Mutants from *S. coelicolor*"
- 2015 SERMACS – Olivia Manley (O) "Cloning of Nickel Uptake Regulator Mutants from *S. coelicolor*"

Scientific References

- Prof. Dean Wilcox dean.wilcox@dartmouth.edu
- Prof. Robert Cantor robert.cantor@dartmouth.edu
- Prof. Siobhan Milde siobhan.milde@dartmouth.edu
- Prof. Rober Hausinger hausinge@msu.edu
- Prof. Dan Kosman camkos@buffalo.edu
- Prof. David Giedroc giedroc@indiana.edu
- Prof. Amar Flood aflood@indiana.edu
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- Prof. Takita Sumter sumtert@winthrop.edu