

DANIELLE L. JACOBS

EDUCATION

- Ph.D., University of North Carolina, Chapel Hill, NC Spring 2008
Dissertation Title: Efforts Toward the Asymmetric Total Synthesis of Pyranicin
- ACS Certified B.S., Haverford College, Haverford, PA Spring 2002
Thesis Title: Investigation of Sulfoxides as Chiral Auxiliaries in the Stereospecific Synthesis of Antimicrobial Agents

RESEARCH EXPERIENCE

- Associate Professor, Rider University Fall 2008 – Present
- Assistant Professor, Rider University Fall 2008 – Spring 2014
- Developed & optimized reaction methodology for the efficient preparation of biologically-active and structurally-intriguing small molecules
- Doctoral Research Assistant, University of North Carolina Fall 2003 – Spring 2008
Advisor: Professor Michael T. Crimmins
- Completed the asymmetric total synthesis of pyranicin
- Research Associate, Enzon, Inc., Piscataway, NJ Fall 2002 – Summer 2003
Advisor: Hong Zhao, Ph.D.
- Synthesized & characterized various PEG functionalized derivatives & small molecule linkers
- Undergraduate Research Fellow, Haverford College Summer 2001 – Spring 2002
Advisor: Professor Frances R. Blase
- Stereospecifically synthesized & characterized sidechain fragment of the ripostatin family of natural products
- NSF-REU Research Fellow, University of Washington, Seattle, WA Summer 2001
Advisor: Professor Julie A. Kovacs
- Prepared & characterized novel organic ligands & ferric complexes to probe SAR of nitrile hydratase & superoxide reductase

TEACHING EXPERIENCE

Rider University

- Instructor – Natural Product Synthesis (CHE415) • Physical Organic Chemistry (CHE420) • Physical Organic Chemistry Lab (CHE420L) • Introduction to Organic & Biochemistry (BCH 225) • Experimental Chemistry I (CHE301) • Organic Chemistry II Lab (CHE214L) • Organic Chemistry II (CHE214) • Organic Chemistry I Lab (CHE211L) • Organic Chemistry I (CHE211) • Introduction to Integrated Science & Mathematics (ISM100)

University of North Carolina

- Instructor – Synthetic Aspects of Organic Chemistry (CHEM468) • General Chemistry Laboratory (CHEM101L)

EDITORIAL EXPERIENCE

Book Reviewer Fall 2009 – Present

CHOICE Current Reviews for Academic Libraries

- Composed critical reviews of newly published non-fiction books concerning the fields of natural products chemistry and scientific writing

AAAS Mass Media Science & Engineering Fellow Summer 2008

KUNC 91.5 FM – Greeley, Colorado

News Director: Brian Larson

- Developed, researched, composed & edited novel story concepts on current scientific and medical issues for a non-scientific audience

Chemistry Technical Editor Spring 2007 – Spring 2008

The Carbon Age: How Life's Core Element Became Civilization's Greatest Threat

Author: Eric Roston

Publisher: Walker & Co.

- Served as primary scientific resource for elucidating, transcribing, illustrating, and editing relevant and scientifically accurate concepts in chemistry for a non-fiction book released in Spring 2008.

Chemistry Technical Editor Fall 2006

Compendium for Biochemistry & Molecular Biology

Author: Roger L. Lundblad, Ph.D.

- Advised author & extensively edited descriptions & illustrations of chemical transformations for a pertinent biochemistry resource

Contributing Science Writer Winter 2006 – Present

Endeavors Magazine – University of North Carolina

Editor: Neil Caudle, Associate Vice Chancellor of Research

- Researched, interviewed, and composed feature articles on innovative & significant scientific investigations for a non-scientific publication

Technical Writer Summer 2006

Electronic Encyclopedia of Reagents for Organic Synthesis

Editor: Leo A. Paquette, Ph.D.

- Composed and illustrated comprehensive reviews to be widely employed by the scientific community

HONORS & AWARDS

- Mazzotti Women's Leadership Award (Rider University) 2015
- ACS Division of Organic Chemistry Travel Award Spring 2013
- AAAS Mass Media Science & Engineering Fellow 2008
- U.S. Department of Education GAANN Teaching Fellow (UNC) 2007 – 2008

- Venable Graduate Fellow (UNC) 2003 – 2004
- Honors Thesis in Chemistry (Haverford College) 2002
- George Pierce Prize in Chemistry (Haverford College) 2002
- NSF-REU Scholar (University of Washington) 2001
- Outstanding Teaching Award (The Princeton Review) 2001
- Summerfield Foundation Award (Haverford College) 1998 – 2002

RESEARCH GRANTS

- Rider University Research Sabbatical Fall 2016
- Rider University Summer Research Reimbursement Summer 2015
- Rider University Summer Research Reimbursement Summer 2012
- Rider University Summer Research Fellowship Summer 2011
- Rider University Summer Research Reimbursement Summer 2011
- Rider University Summer Research Fellowship Summer 2010
- Rider University Summer Research Reimbursement Summer 2010
- Rider University Summer Research Fellowship Summer 2009
- Rider University Summer Research Reimbursement Summer 2009

NON-RESEARCH GRANTS

- ACS Innovative Projects Grant (Chemistry Career Café Series) 2011
- ACS Innovative Projects Grant (“Careers in Chemistry” Symposium) 2009
- ACS Project SEED Award 2009 – Present

COMMUNITY CONTRIBUTIONS

- Faculty Advisor, Student Affiliates of the ACS 2014 – Present
- Assistant Chair, UAPC Faculty Grade Review Panel 2014 – Present
- Director, GLASS-STEM Program & Summer Science Institute 2014 – Present
- Coordinator, US National Chemistry Olympiad of Mercer County 2014 – Present
- Member, Academic Standing Committee 2014 – Present
- Member, SENCER Team 2013 – Present
- Treasurer, Trenton Section of the American Chemical Society (TrACS) 2013 – Present
- Chair, Faculty Development Committee (FDC) 2013
- Manuscript Reviewer 2012 – Present
Chemical Educator, Bioorganic & Medicinal Chemistry Letters, Journal of Undergraduate Research, Journal of Chemical Education, Acta Crystallographica C
- Grant Reviewer
Research Corporation, ACS-PRF, NSF-GRFP 2012 – Present

- Member, Faculty Development Committee (FDC) 2012
- Member, Sustainability Studies Minor Review Board 2012 – Present
- Member, CLAES Vertical Curriculum Integration Task Force 2011 – Present
- Assistant Treasurer, Trenton Section of the American Chemical Society (TrACS) 2011 – 2012
- Informal Faculty Mentor 2011 – Present
- Chair, Undergraduate Research & Scholarship Awards (URSA) Committee 2011
- Member, Faculty Mentoring Committee (FMC) 2010 – Present
- Founder, Improving Connections Across STEM Disciplines 2010 – 2011
- Faculty Representative, Student Recreation Center (SRC) Committee 2010 – Present
- GLASS Advisor 2010 – Present
- Member, CLAS Undergraduate Travel Grant Committee 2010 – Present
- Provost's Appointee, URSA Committee 2010
- Faculty Advisor, TOMS One-For-One Club (Rider University) 2009 – 2011
- Director, TrACS 2009 – Present
- Coordinator & Mentor, ACS Project SEED 2008 – Present

PEER-REVIEWED PUBLICATIONS

1. Ghattas, P.; Carlin, J.W.; Murkli Jr., S.L.; Jacobs, D.L. "Solvent-Free Microwave-Assisted Preparation of *N*-(2-(Pyridin-2-yl)ethyl)sulfonamides." *Synthetic Communications* 44 (2014): 520-529.
2. Jacobs, D.L.; Chan, B.C.; O'Connor, A.R. "N-[2-(Pyridin-2-yl)ethyl]-Derivatives of Methane-, Benzene- and Toluenesulfonamide: Prospective Ligands for Metal Coordination." *Acta Crystallographica C69* (2013): 1397-1401.
3. Dawson, P.H.; Jacobs, D.L.; Yang, S.Q. "An Online Tutorial for SciFinder for Organic Chemistry Classes." *Science & Technology Libraries* 29 (2010): 298-306.
4. Crimmins, Michael T.; Jacobs, D.L. "Asymmetric Total Synthesis of Pyranicin." *Organic Letters* 11 (2009): 2695-2698.
5. Jacobs, D.L. "Methanesulfonamide: First Update." *Electronic Encyclopedia of Reagents for Organic Synthesis* John Wiley & Sons, Inc. 2006.
6. Kreilein, M.; Jacobs, D.L. "Methanesulfonyl Chloride: First Update." *Electronic Encyclopedia of Reagents for Organic Synthesis* John Wiley & Sons, Inc. 2006.
7. Shearer, J.; Lai, J.; Jacobs, D.L.; Kovacs, J.A. "Preparation & Properties of [Ni^{II}(BEES)(Cl)](BPh₄): a Ni^{II} Complex in a Mixed Nitrogen/Thioether Coordination Environment." *Inorganica Chimica Acta* 336 (2002): 61-64.

PRESENTATIONS

8. Jacobs, D.L. "Practical Course in Physical Organic Chemistry Suitable for the Primarily Undergraduate Institution." 250th ACS National Meeting, Boston 20 August 2015. CHED 485.
9. Tyson, J. & Jacobs, D. "Work Towards the Asymmetric Total Syntheses of Majorenolide & Majorynolide." ISCAP Day, Rider University 6 May 2015.
10. Murkli Jr., S.L. & Jacobs, D.L. "Efficacy of *N*-(2-(Pyridin-2-yl)-ethyl)sulfonamides as

- Antimicrobial Agents.” ISCAP Day, Rider University 7 May 2014.
- Rai, K.; Kennedy, L.; Jacobs, D.L.; Chan, B.C.; O'Connor, A.R. “Research in the Inorganic Classroom: Structural Characterization of Sulfonamide Derivatives and their Metal Coordination Products.” 247th ACS National Meeting, Dallas 16 March 2014.
 - O'Connor, A.R.; O'Connor, J.M.; Carlin, J.W.; Jacobs, D.L.; Chan, B.C. “Synthesis & Characterization of (1,5-bis-Cyclooctadiene)iridium(I) Complexes Containing *N*-(2-(Pyridin-2-yl)ethyl)sulfonamide Derivatives.” 247th ACS National Meeting, Dallas 16 March 2014.
 - Dawson, P.H.; Yang, S.Q.; Heath, W.P.; Jacobs, D.L. “Creating Online Tutorials: A Way to Embed Research Instruction into Distance Learning and Traditional Classes.” European Conference on Information Literacy. Istanbul, Turkey 22 October 2013.
 - Dalal, H.; Dawson, P.H.; Jacobs, D.L.; Yang, S.Q. “Representing Reference: Making the Most Out of Your Subscription Databases: A SciFinder Example.” [Webinar] In *Lyrasis Webinar Series*. 25 April 2013.
 - Murkli Jr., S.L.; Carlin, J.W.; Jacobs, D.L. “Adjuvant-Free Conjugate Addition of Sulfonamides to 2-Vinylpyridines: An Unexploited Facile Route to Diversely Substituted *N*-(2-(Pyridin-2-yl)ethyl)sulfonamide Derivatives.” 245th ACS National Meeting, New Orleans 8 April 2013.
 - Jacobs, D.L. “From Licorice to Lipitor: Synthetic Routes from Nature to the Medicine Cabinet.” Kings College, Wilkes-Barre, PA 21 February 2013.
 - Bing, J. & Jacobs, D.L. “Development of a Novel Asymmetric Alkylation of Superquat-Derived Glycolyloxazolidinones and their Application toward the Synthesis of Majorenolide and Majorynolide.” 244th ACS National Meeting, Philadelphia 20 August 2012.
 - Jacobs, D.L.; Blase, F.; Hunt, D.; Minbiole, K. “New Challenges for Organic Synthesis in the Undergraduate Research Lab.” CUR National Meeting, The College of New Jersey 25 June 2012.
 - Bing, J. & Jacobs, D.L. “Development of a Novel Asymmetric Alkylation of Superquat-Derived Glycolyloxazolidinones and their Application toward the Synthesis of Majorenolide and Majorynolide.” ISCAP Day, Rider University 2 May 2012.
 - Ghattas, P. & Jacobs, D.L. “Synthesis and Reactivity of Differentially Substituted 2-Vinylpyridines in the Conjugate Addition of Benzenesulfonamide.” 243rd ACS National Meeting, San Diego 26 March 2012.
 - Wilner, A.; Mirchandani, S.; Lowrey, P.; Spiegelberg, B.; Jacobs, D. “SoTL and the Creative Power of Faculty Learning Communities.” SoTL Commons, Georgia Southern University 7 March 2012.
 - Jacobs, D.L. “From Licorice to Lipitor: Total Synthesis Inspired by Nature.” Fairleigh Dickinson University, Madison, NJ 28 September 2011.
 - Jacobs, D.L.; Dawson, P.H.; Yang, S.Q. “Development and Assessment of Online SciFinder Tutorials Toward the Promotion of Scientific Literacy in Undergraduates.” 242nd ACS National Meeting, Denver, CO 31 August 2011.
 - Musumeci, L.E. & Jacobs, D.L.; “Glycolate Alkylations with 2-(Methyliodo)acrylates Toward the Synthesis of Majorynolide & Majorenolide.” 42nd Middle Atlantic Regional Meeting of the ACS, College Park, MD 21 May 2011.
 - Ghattas, P. & Jacobs, D.L. “Catalytic, Solvent-Free Preparation of *N*-(2-(Pyridin-2-yl)ethyl)sulfonamides.” 42nd Middle Atlantic Regional Meeting of the ACS, College Park, MD 21 May 2011.
 - Ghattas, P. & Jacobs, D.L. “Catalytic, Solvent-Free Preparation of *N*-(2-(Pyridin-2-yl)-

- ethyl)sulfonamides.” ISCAP Day, Rider University 4 May 2011.
27. Dawson, P.H.; Jacobs, D.L.; Yang, S.Q. “Online Tutorials & Assessment of Information Literacy Skills. Association of Research Libraries.” (ARL) 2010 Library Assessment Conference, Baltimore, MD 25 October 2010.
 28. Furqan, D.; Musumeci, L.; Jacobs, D.L. “Na(SG)-I as a Novel Deprotecting Reagent.” 240th ACS National Meeting, Boston 23 August 2010.
 29. Benning, Jr., R. & Jacobs, D. “Investigations into the Aza-Conjugate Addition of Sulfonamides to 2-VinylPyridine.” 240th ACS National Meeting, Boston 23 August 2010.
 30. Elbaum, M.B. & Jacobs, D.L. “Design, Synthesis, and Evaluation of Novel Cyanoacrylamide Polymers as Drug-Releasing Bioadhesives.” 240th ACS National Meeting, Boston 23 August 2010.
 31. Dawson, P.H.; Jacobs, D.L.; Yang, S.Q. Online Tutorial for SciFinder for Organic Chemistry Classes: Creation & Assessment of Use. Special Libraries Association (SLA) Annual Conference, New Orleans 15 June 2010.
 32. Dawson, P.H.; Jacobs, D.L.; Yang, S.Q. Online Tutorial for SciFinder for Organic Chemistry Classes: Creation & Assessment of Use. Virtual Academic Library Environment (VALE) New Jersey Assessment Fair, Piscataway, NJ 25 May 2010.
 33. Elbaum, M.B. & Jacobs, D.L. “Design, Synthesis, and Evaluation of Novel Cyanoacrylamide Polymers as Drug-Releasing Bioadhesives.” ISCAP Day, Rider University 5 May 2010.
 34. Leon, L.; Benning, R.T.; Ghattas, P.; Jacobs, D.L. “Synthesis of Chiral Auxiliaries from (R)-(+)-Pulegone.” 238th ACS National Meeting, Washington, DC. 19 August 2009.
 35. Jacobs, D.L. & Crimmins, M.T. “Asymmetric Total Synthesis of Pyranicin.” 238th ACS National Meeting, Washington, D.C. 21 August 2009.
 36. Jacobs, D.L. “From Licorice to Lipitor: Total Synthesis Inspired by Nature.” Mercer University, Macon, GA 16 March 2009.
 37. Jacobs, D.L. “From Licorice to Lipitor: Total Synthesis Inspired by Nature.” Raritan Valley Community College, North Branch, NJ 5 March 2009.
 38. Jacobs, D.L. “Efforts Toward the Asymmetric Total Synthesis of Pyranicin.” University of North Carolina, Chapel Hill, NC 23 May 2008.
 39. Jacobs, D.L. “Efforts Toward the Asymmetric Total Synthesis of Pyranicin.” Eureka College, Eureka, IL 31 January 2008.
 40. Jacobs, D.L. “Efforts Toward the Asymmetric Total Synthesis of Pyranicin.” Rider University, Lawrenceville, NJ 24 January 2008.
 41. Jacobs, D.L. “Efforts Toward the Asymmetric Total Synthesis of Pyranicin.” Salem State College, Salem, MA 3 December 2007.
 42. Jacobs, D.L. “Recent Applications in Geminal Dianions.” University of North Carolina, Chapel Hill, NC 7 March 2007
 43. Jacobs, D.L. “Efforts Toward the Asymmetric Total Synthesis of Pyranicin.” University of North Carolina, Chapel Hill, NC 26 January 2007.
 44. Jacobs, D.L. “Microwave Assisted Organic Synthesis.” University of North Carolina, Chapel Hill, NC 11 October 2006.
 45. Jacobs, D.L. “From Benchtop to Process Plant in the Pharmaceutical Industry.” University of

North Carolina, Chapel Hill, NC 28 September 2005.

46. Jacobs, D.L. & Crimmins, M.T. "Efforts Toward the Asymmetric Total Synthesis of Pyranicin." 230th ACS National Meeting, Washington, D.C. Fall 2005.
47. Jacobs, D.L. "Memory of Chirality: Stereinduction via Dynamic Conformational Chirality of sp²-Hybridized Intermediates." University of North Carolina, Chapel Hill, NC 29 April 2005

SKILLS

- 1D NMR, 2D NMR, HPLC, IR, GC, MS, polarimetry, microwave, glove box techniques

CURRENT RESEARCH STUDENTS

- Andrew Jemas (2014 – Present)
- Morris, Ayeshia (2014 – Present)
- Ottavi, Samantha (2015)
- Park, Mideum (2015 Project SEED)
- Quenum, Julite (2015)
- Thatcher, Nicole (2015)
- Tyson, Jonathan (2013 – Present)

PAST RESEARCH STUDENTS

- Benning, Ronald (2008 – 2010) Research Associate for Dr. John Adamovics, Rider University
- Bing, Jade (2011 – 2013) 2nd year PhD candidate in Chemistry at Vanderbilt University
- Borkowski, Anthony (2013 – 2014) Senior, Rider University
- Carlin, Joseph (2012 – 2014) Associate Research Chemist, Benjamin Moore Paint Company
- Elbaum, Michael (2009 – 2010) Research Scientist, Novartis Institute
- Franzosi, Jacqueline (2012) Senior, Rutgers University
- Furqan, Dashawn (2010 – 2011 Project SEED) Undergraduate student at MCCC
- Ghattas, Paul (2008 – 2012) 4th year MD candidate at Pennsylvania State University
- Homoky, Christopher (2009 – 2010) Research Associate, Accutest
- Kornasiewicz, Adrie (2011) Post-baccalaureate student at Rider University
- Kparway, Joseph (2012, Project SEED)
- Leon, Lissette (2009, Project SEED) Senior, Rider University
- Murkli, Steven (2012 – 2014) 1st year PhD candidate in Chemistry at University of Maryland
- Musumeci, Lauren (2009 – 2011) R&D Scientist, PepsiCo
- Nouser, Mohamed (2014 – 2015)
- Ojinnaka, Eleanor (2011 – 2013) Senior, William Patterson University
- Onukwugha, Nneka (2013, Project SEED)
- Peck, Gregory (2014) Junior, Rider University

- Sabharwal, Shivam (2012, Project SEED) Junior, The George Washington University
- Sethuraman, Arvinth (2014 – 2015) Freshman, The Cooper Union
- Szwetkowski, Connor (2014 – Present) Junior, Rider University
- Thavalingam, Mahilnancai (2010, Post-Graduate)

PROFESSIONAL AFFILIATIONS

- American Association for the Advancement of Science (AAAS)
- American Chemical Society (ACS)
- Council of Undergraduate Research (CUR)
- Gamma Sigma Epsilon (GSE)
- National Association of Science Writers (NASW)
- Sigma Xi

REFERENCES

Available upon request