

Jennifer L. Koviach

Department of Chemistry, 5 Andrews Road, Bates College, Lewiston, ME
Phone: 207-786-6292, E-mail: jkoviach@bates.edu, Fax: 207-786-8336

Education

University of Minnesota, Minneapolis, MN, 1993-1999

Ph.D. January 1999

Department of Chemistry

Advisor: Prof. Craig Forsyth

Oberlin College, Oberlin, OH, 1989-1993

Bachelor of Arts in Chemistry

Research Experiences

Assistant Prof. of Chemistry, Bates College, 2001-present.

- Investigating the use of hexenuloses as Michael acceptors for the synthesis of 2-deoxy carbohydrates
- Synthesis of pyrans by intramolecular S_N2' addition of an alcohol to a vinylic epoxide.
- Enantioselective synthesis of enol ether spiroketal containing natural products found in the plant family *Asteraceae*.

Postdoctoral Associate: Research Adviser: Prof. Randall Halcomb; Department of Chemistry and Biochemistry, University of Colorado, Boulder, 1999-2001

- Developed a convergent synthesis of two spiroketal containing glycopeptides to probe conformational requirements of unconstrained glycopeptides to specific receptors.
- Synthesized six nucleoside analogs as potential inhibitors of CMP-sialic acid transport into Golgi vesicles.

Doctoral Student: Research Adviser: Prof. Craig Forsyth; Department of Chemistry, University of Minnesota, Minneapolis, 1993-1998

- Developed novel synthesis of the 1-aza-[4.5.0]-bicyclononane core of the marine natural products halichlorine and pinnaic acid.
- Determined scope and limitations of a new two-step method for the conversion of esters into 2-substituted allylic alcohols.
- Determined scope and limitations of carbomercuration for intramolecular carbocycle formation.
- Directed research of undergraduates and junior graduate students.

Teaching Experiences

Assistant Prof. of Chemistry, Bates College 2001-present

Chem 217 (Organic Chemistry I) lecture and laboratory: Fall 2001, 2002

Chem 218 (Organic Chemistry II) lecture and laboratory Winter 2002, 2003

Chem 325 (Organic Synthesis) Winter 2001

FYS 270 (A Drug's Life) Fall, 2002

Grants

- Summer Research Grant: Howard Hughes Medical Institute: Applied January 2002, \$8600 funded for support of two summer research students.
- Cottrell College Science Award; Research Corporation: "Synthesis of 2-Deoxyglycosides by Conjugate Addition" Applied October, 2002, \$37,218 funded. (\$18,609 5/03-5/04, \$18,609 5/04-5/05)
- Summer Research Grant: Howard Hughes Medical Institute: Applied January 2003, \$5500 funded for support of one summer research student. (deferred).

Teaching Development Activities

- Attended workshop on use of student assistants for supplemental instruction in large science classes, held by Ann Reuman, Dec. 2, 2002, Colby College
- Attended workshop entitled "Active and Collaborative Learning in Large Classes" held by Prof. Richard Yuretich, May 29, 2002, Bates College.
- Attended workshop entitled "Research as a Guide for Curriculum Development: An excerpt from *Tutorials in Introductory Physics*", held by Lillian C. McDermott, and P.S. Shaffer, Oct. 24, 2001, Bates College.

Service

- Admissions and Financial Aid Committee (2002/2003)
- HHMI Committee (2002/2003)

Professional Associations and Activities

- Member, American Chemical Society, Organic Division
- Member, American Association for the Advancement of Science

Publications

"Inhibition of CMP-Sialic Acid Transport in Golgi Vesicles by Nucleoside Monophosphates" Molly Chiramonte, Jennifer L. Koviach, Chad Moore, Vidhya V. Iyer, Carston R. Wagner, Randall L. Halcomb, Wayne Miller, Paul Melancon, Robert D. Kuchta. *Biochemistry*, **2001**, *40*, 14260-14267.

"Design and Synthesis of Conformationally Constrained Glycosylated Amino Acids" Jennifer L. Koviach, Mark D. Chappell, Randall L. Halcomb. *Journal of Organic Chemistry*, **2001**, *66*, 2318-2326.

"An in-Situ Imminium Formation-Allylation Approach Towards the 1-Aza-[4.5.0]-Spirobicyclic Core of Halichlorine and Pinnaic Acid" Jennifer L. Koviach, Craig J. Forsyth. *Tetrahedron Lett.*, **1999**, *40*, 8529-8532.

"Carboxylate Methylenation with a Functionalized Silylmethyl Anion: A Two-Step Synthesis of 2-Substituted Allylic Alcohols from Esters" Tammy J. Mickelson, Jennifer L. Koviach, Craig J. Forsyth. *J. Org. Chem.*, **1996**, *61*, 9617-9620.

Presentations

Mann, B.; Koviach, J. Synthesis of 2,6-Dideoxyglycosides by Conjugate Addition. Poster accepted for the 226th National American Chemical Society, New York City, NY, September 2003.

Domush, H.; Mann, B.; Koviach, J. Synthesis of 2,6-Dideoxyglycosides by Conjugate Addition. Poster presented at the Carbohydrates Gordon Conference, Tilton, NH, 2003.

Domush, H.; Mann, B.; Koviach, J. Synthesis of 2,6-Dideoxyglycosides by Conjugate Addition. Poster presented at the 224th National American Chemical Society, Boston, MA, August 2002, Paper CHED 205.

Slazas, M.; Kuchta, R.; Koviach, J.; Halcomb, R. Investigation of the Binding and Substrate Specificity of the CMP-Sialic Acid Transporter of the Golgi Apparatus. Poster presented at the 28th Annual Conference of the Society for Glycobiology, Boston, MA, November 2000.

Halcomb, R.L.; Koviach, J.L.; Lane, J.W.; Whittemore, N.A. Synthesis and Conformational Studies of Glycopeptide Mimetics. Presented at the 220th National American Chemical Society, Washington, D.C., August 2000; Paper CARB 64.

Koviach, J.L.; Halcomb, R.L. Synthesis and Evaluation of Conformationally Constrained Glycopeptide Analogs. Presented at the 219th National American Chemical Society, San Francisco, CA, March 2000; Paper ORGN 479.

Koviach, J.L.; Forsyth, C.J. Studies Towards the Total Synthesis of Halichlorine and Pinnaic Acid. Poster presented at the 215th National American Chemical Society, Dallas, TX, March 1998; Paper ORGN 183.

Koviach, J.L.; Forsyth, C.J. A Tandem Cyclization Approach To The Synthesis Of Guaianolide Natural Products. Poster presented at the 210th National American Chemical Society, Chicago, IL, August 1995; Paper ORGN 86.

Research Students

Hilary Domush; summer research (2002), senior honors thesis (2002/2003) "Synthesis of 2-Deoxyglycosides by Conjugate Addition"

Brent Mann; summer research (2002), independent study (fall 2002, winter 2003), summer research (2003)

Andrew Prigodich; senior thesis (2002/2003) "Synthesis of Pyran Rings via S_N2' Epoxide Opening"

Andrew Hardy; independent study (fall 2002)