

Adrienne Pettijohn Loh

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EDUCATION

Ph.D., Biophysical Chemistry, Cornell University, Ithaca NY August 1995
M.S., Biophysical Chemistry, Cornell University, Ithaca NY September 1991
B. Sc., Faculty Program in Chemistry and Mathematics, McGill University, Montreal, Canada May 1989

Ph.D. DISSERTATION

“Investigation of 3_{10} -Helical Conformations of Aib-Rich Peptides Using NMR, Resolution-Enhanced FTIR, and CD Spectroscopies.” Atsuo Kuki, Advisor; Cornell University, Ithaca NY August 1995

PROFESSIONAL HISTORY

TEACHING:

Tenure, University of Wisconsin-La Crosse July 2002
Associate Professor, University of Wisconsin-La Crosse July 2000
Assistant Professor, University of Wisconsin-La Crosse July 1996-July 2000

General Chemistry I & II (CHM103, 104)
General Chemistry Laboratory I & II (CHM103L, 104L)
Physical Chemistry Laboratory I & II (CHM313, 314)
Physical Chemistry II (CHM310)
Biophysical Chemistry (CHM409)
Certified as a Writing Emphasis Instructor
Nominated for “Most Accessible Instructor” Award: 1998, 1999

Adjunct Faculty Member, St. Bonaventure University, NY August 1995-May 1996
General Chemistry I Laboratory
General Chemistry II Lecture and Laboratory

Teaching Assistant, Cornell University Fall 1994, Spring 1993, Spring 1990, Fall 1989
Physical Chemistry Laboratory
General Chemistry I

Instructor, Writing in the Sciences Program, Cornell University Fall 1992, Spring 1991
Organic Chemistry
Chemistry Honors Seminar

RESEARCH:

Principle Investigator, University of Wisconsin-La Crosse August 1997-present
Visiting Associate Professor, Cornell University Summer 2001, 2002
Visiting Assistant Professor, Cornell University Summer 1998, 1999, 2000
Dissertation Research, Cornell University August 1989-July 1995
Summer Research Assistant, Rohm & Haas Inc., Bristol PA Summer 1989
Sample Preparation Chemist, Energy and Environmental Engineering, Inc., Somerville, MA Summer 1988

FELLOWSHIPS AND GRANTS

College of SAH Faculty Development Grant Submitted Oct., 1999
“Does In-Class Problem Solving Improve Student Learning?”, with Scott Cooper, Award: \$1400.
UW-L Faculty Research Grant July 1999-present
“Preparation of a Series of Peptides Designed for Investigations of Helical Motions”, Award: \$2748.

- UW-L Faculty Research Grant** July 1997-June 1999
 “Investigation of the three-dimensional structures of helical peptides”, Award :\$7816.
- NIH Molecular Biophysics Training Grant Fellowships**, Cornell University July 1990-June 1994

AWARDS TO UNDERGRADUATE RESEARCHERS (undergraduates marked with an asterisk)

- UW-La Crosse College of Science and Allied Health Travel Grant for Student Researchers** Fall 2002
 “Steric Effects on Hydrogen Bonding and Flexibility of a 3_{10} -Helix Forming Peptide”, Tracy LeGreve* (Adrienne Loh, advisor) Award: \$400. For travel to the National Biophysical Society Meeting in San Antonio, TX, Mar. 2003.
- UW-La Crosse College of Science and Allied Health Travel Grant for Student Researchers** Fall 2001
 “Side Chain Steric Effects on Hydrogen Bonding in a 3_{10} -Helix Forming Peptide”, Michael Thorgersen* (Adrienne Loh, advisor) Award: \$400. For travel to the National Biophysical Society Meeting in San Francisco, CA, Feb. 2002.
- UW-La Crosse College of Science and Allied Health Travel Grant for Student Researchers** Fall 2001
 “Unlocking the Structure and Flexibility of a Series of Peptides of Varying Length using ^1H NMR Spectroscopy”, Larry Masterson* (Adrienne Loh, advisor) Award: \$400. For travel to the National Biophysical Society Meeting in San Francisco, CA, Feb. 2002.
- UW-La Crosse Undergraduate Research Grant** Spring 2000
 “Unlocking the Structure and Flexibility of a Series of Peptides of Varying Length using ^1H NMR Spectroscopy”, Larry Masterson* (Adrienne Loh, advisor) Award: \$733.
- UW-La Crosse College of Science and Allied Health Travel Grant for Student Researchers** Fall 2000
 “Effect of Peptide Chain Length and Steric Hindrance on Helix Structure and Dynamics”, Matthew Giesler*, Michael Thorgersen*, Larry Masterson* (Adrienne Loh, advisor) Award: \$400. For travel to the National Biophysical Society Meeting in Boston, MA, Feb. 2001.

PUBLICATIONS (undergraduates marked with an asterisk)

- M. Thorgersen* and A. P. Loh, “Sidechain Steric Effects on Hydrogen Bonding of a 3_{10} -Helix Forming Peptide”, *UW-La Crosse Journal of Undergraduate Research*, in press (2002).
- L. M. Masterson* and A. P. Loh, “Unlocking the Structure and Flexibility in a Four Residue Peptide Using ^1H NMR Spectroscopy”, *UW-La Crosse Journal of Undergraduate Research*, in press (2002).
- M. Giesler* and A. P. Loh, “Determination of the Barriers to Exchange and Temperature Stability of a Helical Peptide using NMR Spectroscopy”, *UW-La Crosse Journal of Undergraduate Research*, **4**, 135-142 (2001).
- A. P. Loh, N. Pawley, L. K. Nicholson, R. E. Oswald, “An Increase in Sidechain Entropy Facilitates Effector Binding: NMR Characterization of the Sidechain Methyl Group Dynamics in Cdc42Hs”, *Biochemistry*, **40**, 4590-4600 (2001).
- A. P. Loh, W. Guo, L. K. Nicholson, R. E. Oswald, “Backbone Dynamics of Inactive, Active, and Effector-Bound Cdc42Hs from Measurements of ^{15}N Relaxation Parameters at Multiple Field Strengths”, *Biochemistry*, **38**; 12547-12557 (1999).
- A. Kuki, D. Anglos, J. D. Augspurger, G. Basu, V. A. Bindra, M. Kubasik, and A. Pettijohn, “Molecular Optical Rails based on Aib”, J. Michl (ed.), *Modular Chemistry*, Kluwer Academic Publishers, 503-516 (1997).

PRESENTATIONS (undergraduates marked with an asterisk)

- Univeristy of Minnesota - Duluth Seminar Series** (Oct. 11, 2002) Duluth, MN “Watching Proteins Wiggle: Using NMR Spectroscopy to Study the Dynamic Motions of Peptides and Proteins”, A. P. Loh, Invited Speaker.
- 16th Annual Protein Society Meeting** (Aug. 17-21, 2001) San Diego, CA “Hills, Valleys, and Functional Protein Dynamics”, L. Nicholson (*invited speaker*), N. Pawley, R. E. Oswald, A. P. Loh, and S. Koide.
- American Chemical Society Meeting in Miniature** (Feb. 22, 2000) La Crosse, WI “Determination of Relative Hydrogen-Bond Strengths in Peptides from Kinetic Studies of H-D Exchange”, Joe Davis*, Todd J. Rivard*, and A. P. Loh

44th Annual Biophysical Society Meeting (Feb. 12-16, 2000) New Orleans, LA, “NMR Characterization of the Dynamics of Sidechain Methyl Groups in Three Constructs of Cdc42Hs: Evidence for Entropy Balance Upon Substrate Binding”, [A. P. Loh](#), W. Guo, L. Nicholson, R. E. Oswald

1st Annual Conference on Teaching and Learning (Jan. 19, 2000) La Crosse, WI “Developing Webpages that Students will Actually Use”, Scott Cooper, [Adrienne Loh](#), Kenny Hunt, Robert Hoar, Rick Gillis and Tom Volk

Cowley Hall Brown Bag Lunch Series (Oct. 22, 1999) La Crosse, WI “Using Oral Exams as an Evaluation and Teaching Tool” [Adrienne Loh](#).

Local Meeting of the American Chemical Society (Sept. 27, 1999) La Crosse, WI, “Relating Protein Motion to Function: An NMR Dynamics Study of the GTPase Cdc42Hs”, [A. P. Loh](#), Invited Speaker.

43rd Annual Biophysical Society Meeting (Feb. 13-17, 1999) Baltimore, MD, “Backbone Dynamics of Cdc42: Binding of p21-Activated Kinase”, [A. P. Loh](#), W. Guo, L. Nicholson, R. E. Oswald

3rd Annual UW-L Faculty Research Day (Fall 1997) La Crosse, WI, “Using Helical Peptides to Understand Protein Folding”, [A. P. Loh](#).

39th Annual Biophysical Society Meeting (Feb. 12-16, 1995) San Francisco, CA, “CD, REFTIR and NMR Spectroscopy of 3_{10} -Helical Aib-Rich Peptides: Implications for the Elucidation of Peptide Secondary Structure”, [A. Pettijohn](#) and A. Kuki.

38th Annual Biophysical Society Meeting (Mar. 6-10, 1994) New Orleans, LA, “A 3_{10} -Helical Peptide with a Point Defect in the Hydrogen-Bonding Pattern: Implications for the Role of Aib in Helix Stabilization.”, [A. Pettijohn](#), G. Basu and A. Kuki.

PRESENTATIONS BY UNDERGRADUATE RESEARCHERS

46th Annual Biophysical Society Meeting (Feb. 23-26, 2002), San Francisco, CA; **5th Annual UW-L Celebration of Undergraduate Research and Creativity** (Apr. 12, 2002), La Crosse, WI; **15th National Conference on Undergraduate Research** (Apr. 24-27, 2002), Whitewater, WI, “Side Chain Steric Effects on Hydrogen Bonding of a 3_{10} -Helix Forming Peptide”, Michael Thorgersen* and [A. P. Loh](#).

46th Annual Biophysical Society Meeting (Feb. 23-26, 2002), San Francisco, CA; **5th Annual UW-L Celebration of Undergraduate Research and Creativity** (Apr. 12, 2002), La Crosse, WI; **15th National Conference on Undergraduate Research** (Apr. 24-27, 2002), Whitewater, WI, “Unlocking the Flexibility in a Series of Peptides of Varying Lengths using ^1H NMR Spectroscopy”, Larry Masterson* and [A. P. Loh](#).

5th Annual UW-L Celebration of Undergraduate Research and Creativity (Apr. 12, 2002), La Crosse, WI, “Molecular Mechanics Study of the Conformation of Aib Based Peptides in a Variety of Common Solvents”, David Boeshaar* and [A. P. Loh](#).

5th Annual UW-L Celebration of Undergraduate Research and Creativity (Apr. 12, 2002), La Crosse, WI, “The Characterization of Solvent Polarity Effects on the Pyruvic Acid Hydrolysis Equilibrium Using NMR Spectroscopy”, Tony Tautges* and [A. P. Loh](#).

4th Annual UW-L Celebration of Undergraduate Research and Creativity (Apr. 6, 2001), La Crosse, WI and **15th National Conference on Undergraduate Research** (Mar. 15-17, 2001), Lexington, KY, “Determination of the Activation Energy and Temperature Stability of Helical Peptides using NMR Spectroscopy”, Matthew Giesler* and [A. P. Loh](#).

4th Annual UW-L Celebration of Undergraduate Research and Creativity (Apr. 6, 2001), La Crosse, WI and **15th National Conference on Undergraduate Research** (Mar. 15-17, 2001), Lexington, KY, “Side Chain Steric Effects on Hydrogen Bonding of a 3_{10} -Helix Forming Peptide”, Michael Thorgersen* and [A. P. Loh](#).

4th Annual UW-L Celebration of Undergraduate Research and Creativity (Apr. 6, 2001), La Crosse, WI, “Unlocking the 3-Dimensional Structure and Flexibility of Proteins by Studying a Kinetic Exchange Reaction in a Short 3_{10} -Helical Peptide”, Larry R. Masterson* and [A. P. Loh](#).

45th Annual Biophysical Society Meeting (Feb. 17-21, 2001), Boston, MA, “Effect of Sidechain Steric Hindrance on Helix Structure and Dynamics”, Matthew Giesler*, Michael Thorgersen, Larry Masterson and [A. P. Loh](#).

3rd Annual UW-L Celebration of Undergraduate Research and Creativity (Apr. 3, 2000), La Crosse, WI, “*Determination of the Temperature Stability of a Six Residue Helical Peptide using NMR Spectroscopy*”, Brian Trewyn* and [A. P. Loh](#)

3rd Annual UW-L Celebration of Undergraduate Research and Creativity (Apr. 3, 2000), La Crosse, WI, “*Study of the Kinetics of Hydrogen-Deuterium Exchange in an Eight-Residue Peptide using NMR Spectroscopy*”, Joe Davis* and [A. P. Loh](#)

10th Annual Argonne Symposium for Undergraduate Research in Science, Engineering and Mathematics (Nov. 5-6, 1999), Chicago, IL, “*Determination of Amide Proton Solvent Accessibility from Kinetic Studies of H-D Exchange*”, Todd Rivard* and [A. P. Loh](#)

National Conference on Undergraduate Research (NCUR) (Apr. 8-10, 1999), Rochester, NY, and **2nd Annual UW-L Undergraduate Research Day** (Mar. 31, 1999), La Crosse, WI “*Using ¹³C NMR Spectroscopy to Examine Backbone Carbonyl Intrahelical Hydrogen-Bonding*”, Kirk Hetzel* and [A. P. Loh](#)

National Conference on Undergraduate Research (NCUR) (Apr. 8-10, 1999), Rochester, NY, and **2nd Annual UW-L Undergraduate Research Day** (Mar. 31, 1999), La Crosse, WI “*Determination of Amide Proton Solvent Accessibility from Kinetic Studies of H-D Exchange*”, Todd Rivard*, Rachel Hoffman* and [A. P. Loh](#)

43rd Annual Biophysical Society Conference (Feb. 13-17, 1999), Baltimore, MD, “*Identification of Backbone Carbonyl Intrahelical Hydrogen-Bonding using ¹³C NMR Spectroscopy*”, Kirk Hetzel*, J. Kilbo* and [A. P. Loh](#)

9th Annual Argonne Symposium for Undergraduate Research in Science, Engineering and Mathematics (Nov. 6-7, 1998), Chicago, IL, “*A New Technique for Determination of Peptide Conformation using ¹³C NMR Spectroscopy*”, Kirk Hetzel*, J. Kilbo* and [A. P. Loh](#)

1st Annual UW-L Undergraduate Research Day (Apr. 3, 1998), La Crosse, WI, “*Determination of Hydrogen-Bonding Strength in Small β_{10} -Helical Peptides by Hydrogen-Deuterium Exchange*”, Rachel Hoffman* and [A. P. Loh](#)

1st Annual UW-L Undergraduate Research Day (Apr. 3, 1998), La Crosse, WI, “*A New Technique for Determining Peptide Conformation using ¹³C NMR Spectroscopy*”, John M. Kilbo* and [A. P. Loh](#)

OTHER PROFESSIONAL ACTIVITIES

REVIEWED MANUSCRIPTS AND TEXTBOOKS

“*General Chemistry*”, Darryl D. Ebbing, 5th edition, Houghton Mifflin Publishers, reviewed 9/97.

“*Physical Chemistry*”, manuscript by Micheal Starzak, for McGraw Hill Publishers, reviewed 3/99.

PROFESSIONAL AFFILIATIONS

American Chemical Society (ACS Member and Student Affiliate Advisor) & ACS Local Chapter (Winona/La Crosse)
 National Biophysical Society
 Council on Undergraduate Research (CUR)
 American Society for Mass Spectrometry (ASMS)

ADMINISTRATION

University and College Committees:

CSAH College Committee, Secretary	Spring 2002-present
UW-L Undergraduate Curriculum Committee	Fall 2000-present
CSAH Undergraduate Research Travel and Supplies Grants Committee (Chair 1999-2001)	1999-present
UW-L Conference on Teaching and Learning Committee	Fall 1999-2001
Computational Science Minor Committee	Fall 1996-present
Information Technology Services Planning Task Force	Fall 1998-Spring 1999
Cowley Hall Addition Committee, Secretary & Chemistry Department Representative	Fall 98-Spring 99
General Honors Program Committee	Fall 1997-Spring 98

Chemistry Department Committees and Service:

Chemistry Web Site Design Committee, Co-Chair	2001-2002
Interim Webmaster for Department	2002
Faculty Advisor to the Student Chemistry Club	2001-present
Chemistry Majors Academic Advisor	1999-present
Writing in the Major Implementation Committee, Chair	Fall 1999-present
General Chemistry Committee, Chair	Fall 1997-present
Capstone in Chemistry (CHM471) Committee and Subcommittee	Fall 1998-Spring 1999
UW-System Chemistry Faculties Meeting Committee, Physical chemistry section moderator	Fall 1999 - 2000
Student Evaluation Committee	August 1997-present
Major Purchases Committee	August 1996-present
Research Review Committee	August 1996-present

MISCELLANEOUS

Design and maintenance of faculty web page, including a grade calculator for General Chemistry and Research Posters.

Recruitment efforts for Chemistry majors: Coordination of Chemistry majors recruitment parties (Fall 1999, 2000, 2001, 2002); Chemistry Department representative at SAH Careers Night (Apr. 16, 2002); Developed literature on scholarships, fields of study, recommended schedules, etc. for recruitment and department Web site.