

CASEY H. LONDERGAN

Assistant Professor of Chemistry

Department of Chemistry
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EDUCATION	University of California, San Diego	La Jolla, CA
	Ph.D. in Chemistry	6/2003
	M.S. in Chemistry	1/2000
	Williams College	Williamstown, MA
	B.A. <i>Cum Laude</i> with Honors in Chemistry	6/1997
TRAINING	University of Pennsylvania	Philadelphia, PA
	Postdoctoral fellow for Robin M. Hochstrasser	7/2003–6/2006
	University of California, San Diego	La Jolla, CA
	Graduate student of Clifford P. Kubiak	9/1998–6/2003
	Los Alamos National Laboratory	Los Alamos, NM
	Post-baccalaureate research assistant for Thomas A. Zawodzinski, Jr.	6/1997–9/1998
	Williams College	Williamstown, MA
	Senior thesis student of Enrique Peacock-López	6/1996–6/1997
GRANTS AND AWARDS		
	Pennsylvania Department of Health	
	CURE grant	2011–2013
	National Institutes of Health (NIGMS)	
	R15 AREA grant GM087499	2009–2011
	Research Corporation	
	Cottrell College Science Award	2009–2011
	Camille and Henry Dreyfus Foundation	
	New Faculty Start-Up Award	2006–2011
	National Institutes of Health (NIGMS)	
	NRSA Kirschstein postdoctoral fellowship	2004–2006
	University of California, San Diego	
	Excellence in Teaching (Chemistry Department)	1998,1999
	Master Teaching Assistant for Chemistry	2000–2001
	Williams College	
	Class of 1960 Scholar	1996–1997

MEMBERSHIPS

American Chemical Society	1997–present
Sigma Xi	1997–present
Biophysical Society	2005–present
Council on Undergraduate Research	2006–present
Protein Society	2007–present

SERVICE

Haverford College

Educational Policy Committee	2010–2012
Faculty Athletic Representative	2008–2009, 2010–2012
Faculty Liaison to Men's Soccer Team	2009–present
Physical Chemistry Search Committee	2007–2008
Humanities Center Steering Committee	2007–2009

Scientific Community

Research advisor for 14 graduated and 10 current students	2006–present
Ad hoc reviewer for <i>Biophys. J.</i> , <i>J. Chem. Phys.</i> , <i>J. Phys. Chem.</i> , <i>Chem. Phys.</i> , <i>J. Am. Chem. Soc.</i> , <i>Biophys. Biochim. Acta: Biomembranes</i> , <i>Biochemistry</i>	continuing
National program reviewer, Beckman Scholars	2011–2012
Review panel member, special R15 grants panel for NIH	Nov. 2009
Member, Early Careers Committee, Biophysical Society	2007–2011
Co-organizer, symposium in the Physical Chemistry division for the American Chemical Society fall 2012 national meeting	Aug. 2012

RECENT TALKS AND PRESENTATIONS

Solo presentations

Swarthmore College Department of Chemistry, invited talk	March 24, 2011
Lehigh University Department of Chemistry, invited talk	Nov. 17, 2011
Gordon Research Conference on Vibrational Spectroscopy	Biddeford, ME, Aug. 1-6, 2010
University of Maryland Department of Chemistry, invited talk	Oct. 9, 2009
Vibrational Spectroscopy Gordon Research Conference	S. Hadley, MA Aug. 3-8, 2008

Presentations with students

Biophysical Society National Meeting	Baltimore, MD, Mar. 3-7, 2011
Poster with Shannon Dalton, Ph.D., Matthew Puretz '14	
Poster with Stephen Griffiths '11, Kevin Hoffman '12	
Poster with Marta Wolfshorndl '14	
Biophysical Society National Meeting	San Francisco, CA, Feb. 19-24, 2010
Posters with Kate Alfieri '10, Heather McMahon '10, and Connor Bischak '10	
Protein Society 23rd Annual Symposium	Boston, MA, July 25-29, 2009
Posters: with Kate Alfieri '10, Heather McMahon '10, and Connor Bischak '10.	
Biophysical Society National Meeting	Boston, MA, Mar. 1-4, 2009
Poster with Lena Edelstein '09 and Katherine A. Clark '09.	

IN PRESS (undergraduates denoted by *)

Yang, H.*, Habchi, J., Londergan, C. H., Longhi, S. Monitoring structural transitions in intrinsically disordered proteins by vibrational spectroscopy of cyanylated cysteine. invited chapter in *Methods in Molecular Biology*, V. Uversky, volume editor. volume in press.

PUBLICATIONS

Haverford College: (undergraduates denoted by *)

Wolfshorndl, M.,* Baskin, R.,* Dhawan, I.* Londergan, C. H. Covalently bound azido groups are very specific water sensors, even in strongly hydrogen-bonding environments. *J. Phys. Chem. B*, **2012**, *116*, 1172–1179.

Alferi, K. N.,* Vienneau, A. R.,* Londergan, C. H. Using infrared spectroscopy of cyanylated cysteine to map membrane binding structure and orientation of the antimicrobial peptide CM15. *Biochemistry*, **2011**, *50*, 11097–11108.

Bischak, C. G.*, Longhi, S., Snead, D. M.*, Costanzo, S., Terrer, E., Londergan, C. H. Probing structural transitions in the intrinsically disordered C-terminal domain of the measles virus nucleoprotein by vibrational spectroscopy of cyanylated cysteines. *Biophys. J.*, **2010**, *99*, 1676-1683.

Edelstein, L.*, Stetz, M. G.*, McMahan, H. A.*, Londergan, C. H. The effects of cyanylated cysteine and α -helical structure on each other. *J. Phys. Chem. B*, **2010**, *114*, 4931-4936.

McMahon, H. A.*, Alferi, K. N.*, Clark, K. A. A.*, Londergan, C. H. Cyanylated cysteine: a covalently attached vibrational probe of protein-lipid contacts. *J. Phys. Chem. Lett.* **2010**, *1*, 850-855.

Maienschein-Cline, M. C.,* Londergan, C. H. “The CN stretching mode of aliphatic thiocyanate is sensitive to solvent dynamics and specific solvation.” *J. Phys. Chem. B*, **2007**, *111*, 10020–10025.

University of Pennsylvania:

Londergan, C. H., Axelsen, P. H., Wang, J., Hochstrasser, R. M. “Two-dimensional infrared spectroscopy displays signatures of structural ordering in peptide aggregates.” *Biophys. J.*, **2006**, *90*, 4672–4685.

Londergan, C. H., Kim, Y. S., Hochstrasser, R. M. “Two-Dimensional Infrared Spectroscopy of Dipeptides in Trehalose Glass.” *Mol. Phys.*, **2005**, *103*, 1547–1553.

University of California, San Diego:

Glover, S. D., Lear, B. J., Salsman, J. C., Londergan, C. H., Kubiak, C.P. “Electron Transfer at the Class II/III Borderline of Mixed Valency: Dependence of Rates on Solvent Dynamics and Observation of a Localized-to-Delocalized Transition in Freezing Solvents.” *Phil. Trans. R. Soc. A* **2008**, *366*, 177–185.

Lear, B. J., Glover, S. D., Salsman, J. C., Londergan, C. H., Kubiak, C. P. “Solvent Dynamical Control of Ultrafast Ground State Electron Transfer: Implications for Class II–III Mixed Valency.” *J. Am. Chem. Soc.* **2007**, *127*, 12772–12779.

Salsman, J.C., Ronco, S., Londergan, C.H., Kubiak, C.P. “Tuning the Electronic Communication and Rates of Intramolecular Electron Transfer in Trinuclear Ruthenium Cluster Dimers.” *Inorg. Chem.*, **2006**, *45*, 547–554.

Londergan, C. H., Salsman, J. C., Lear, B. J. Kubiak, C. P. "Observation and Dynamics of 'Mixed Valence Isomers' and a Thermodynamic Estimate of Electronic Coupling Parameters." *Chem. Phys.*, **2006**, *324*, 57–62.

Rocha, R. C., Brown, M. G., Londergan, C. H., Salsman, J. C., Kubiak, C. P., Shreve, A. P. "Intervalence-resonant Raman spectroscopy of strongly-coupled mixed-valence dimer clusters of ruthenium." *J. Phys. Chem. A*, **2005**, *109*, 9006–9012.

Imai, N., Hamaguchi, T., Yamaguchi, T., Ito, T., Londergan, C. H., Kubiak, C. P. "Observation and dynamics of charge-transfer isomers." *Angew. Chem. Int. Ed.*, **2004**, *43*, 1376–1381.

Londergan, C. H., Kubiak, C. P. "Electron Transfer and Dynamic Infrared Line Coalescence: It Looks Like Dynamic NMR, but a Billion Times Faster." *Chem. Eur. J.*, **2003**, *9*, 5962–5969.

Londergan, C. H., Kubiak, C. P. "Vibronic Participation of the Bridging Ligand in Electron Transfer and Delocalization: New Application of a Three-State Model in Pyrazine-Bridged Mixed-Valence Complexes of Trinuclear Ruthenium Clusters." *J. Phys. Chem. A*, **2003**, *107*, 9301–9311.

Londergan, C. H., Rocha, R. C., Brown, M. G., Shreve, A. P., Kubiak, C. P. "Intervalence Involvement of Bridging Ligand Vibrations in Hexaruthenium Mixed-Valence Clusters Probed by Resonance Raman Spectroscopy." *J. Am. Chem. Soc.*, **2003**, *125*, 13912–13913.

Londergan, C. H., Salsman, J. C., Ronco, S., Kubiak, C. P. "Infrared Activity of Symmetric Bridging Ligand Modes in Pyrazine-Bridged Hexaruthenium Mixed-Valence Clusters." *Inorg. Chem.*, **2003**, *42*, 926–928 (cover article).

Londergan, C. H., Salsman, J. C., Dolkas, L. D.,* Ronco, S., Kubiak, C. P. "Solvent dynamical control of electron-transfer rates in mixed-valence complexes observed by infrared spectral line shape coalescence." *J. Am. Chem. Soc.*, **2002**, *124*, 6236–6237.

Breedlove, B. K., Yamaguchi, T., Ito, T., Londergan, C. H., Kubiak, C. P. "Mixed valence clusters." in *Comprehensive Coordination Chemistry 2*, Lever, A. B. P., Ed.; Elsevier: Amsterdam, 2004; vol. 2, p. 717–729.

Williams College:

Londergan, C. H., Peacock-López, E. "Dynamic model of hormonal systems coupled by negative feedback." *Biophys. Chem.*, **1998**, *73*, 85–107.

CURRENT SCIENTIFIC COLLABORATORS

Sonia Longhi Research Director, Structural Disorder within Viruses CNRS, Université d'Aix-Marseille, France	2007–present
Sara Linse Professor of Biochemistry and Molecular Biology Lund University, Sweden	2010–present
Ingemar André Assistant Professor of Biochemistry Lund University, Sweden	2010–present
David Eliezer Associate Professor Weill Cornell Medical College	2010–present
Karin S. Åkerfeldt Professor of Chemistry Haverford College	2006–present
Robert Fairman Professor of Biology Haverford College	2007–present
Robin M. Hochstrasser Donner Professor of Science and Director, Regional Laser Biotechnology Laboratory University of Pennsylvania	2007–present