Ian T. Suydam

Ian T. Suydam
Department of Chemistry
Seattle University
BANN 517
901 12th Ave
Seattle, WA 98122

tel: 206-398-4459
fax: 206-296-5786
email: suydami@seattleu.edu

EDUCATION

Ph.D. 2005	Chemistry, **Stanford University**, Stanford, CA. Dissertation title: *The Measurement and Prediction of Electric Fields in the Active Site of Human Aldose Reductase.* Dissertation advisor: Steven G. Boxer
B.A. 1998	Chemistry, **Bard College**, Annandale-on-Hudson, NY. Thesis title: *Spectral and Electrochemical Investigations of Para-Substituted Phenylisocyanide Ruthenium (II) Complexes.* Advisor: Hilton M. Weiss

PROFESSIONAL EXPERIENCE

2012 – present	Assistant Professor, Department of Chemistry **Seattle University**, Seattle, WA, 98122
2010 – present	Affiliate Faculty, Department of Bioengineering **University of Washington**, Seattle, WA 98195
2006 – 2009	Postdoctoral Fellow, Department of Molecular Biophysics and Biochemistry **Yale University**, New Haven, CT, 06511 Advisor: Scott A. Strobel
1999 – 2005	Graduate Research, Department of Chemistry **Stanford University**, Stanford, CA, 94305
1999 – 2002	Teaching Assistant, Department of Chemistry **Stanford University**, Stanford, CA, 94305
1998 – 1999	AmeriCorps National Service Member Olympia, WA 98502

HONORS AND AWARDS

2006 – 2009	National Institutes of Health National Research Service Award, **Yale University**
2002	Centennial Teaching Assistant Award, **Stanford University**
2000	Department of Chemistry Graduate Fellowship, **Stanford University**
1998	C. T. Sottery Award, **Bard College**
1998	John Bard Scholar, **Bard College**
1996	American Chemical Society Achievement Award, **Bard College**
1994	Distinguished Scientist Scholar, **Bard College**

PUBLICATIONS

Peer-Reviewed Journal Articles (mentored undergraduates underlined)

6. Alaimo, P.J., Langenhan, J.M., **Suydam, I.T.** "Training undergraduates how to think like a scientist: Redesigning organic chemistry lab experiments to generate reliable and meaningful data." In Review, *Journal of Chemical Education.*

5. **Suydam, I.T.**, Levandoski, S., and Strobel, S.A., "Catalytic importance of a protonated adenosine in the hairpin ribozyme active site", *Biochemistry*, **49**, 3723-3732, (2010).

4. **Suydam, I.T.** and Strobel, S.A., "Nucleotide Analog Interference Mapping", *Methods in Enzymology*, **468**, 3-30, (2009).

3. **Suydam, I.T.** and Strobel, S.A., "Fluorine substituted adenosines as probes of nucleobase protonation in functional RNAs", *Journal of the American Chemistry Society*, **130**, 13639-13648, (2008).

2. **Suydam, I.T.**, Snow, C.D., Pande, V.S., and Boxer, S.G., "Electric fields at the active site of an enzyme: Direct comparison of experiment with theory", *Science*, **313**, 200-204, (2006).

1. **Suydam, I.T.** and Boxer, S.G., "Vibrational Stark effects calibrate the sensitivity of vibrational probes for electric fields in proteins", *Biochemistry*, **42**, 12050-12055, (2003).

PRESENTATIONS

Professional Society Conferences (*presenting author(s), mentored undergraduates underlined)

9. *Davison, J.M., *Neilson, B.K., *Pahl, M.N. and **Suydam, I.T.** "Molecular determinants of ligand recognition in the $preQ_1$ riboswitch: Quantitating the effect of 7-aminomethyl modifications in a series of $preQ_1$ analogs", national meeting of the Biophysical Society, San Francisco, CA, February 2014.

8. *Bright, D.K., Jiang, Y., Do, E., **Suydam, I.T.**, Woodrow, K.A. "Developing nanoparticle-based combination ARVs for HIV inhibition", national meeting of the Biomedical Engineering Society, Seattle, WA, September 2013.

7. *Alaimo, P.J., Langenhan, J.M., and **Suydam, I.T.** "Integrating professional training with organic chemistry teaching labs" national meeting of the American Chemical Society, New Orleans, LA, April 2013.

6. *Ryon, L.R. and **Suydam, I.T.**, "Investigating the role of sterics and hydrogen bonding in the $preQ_1$ riboswitch binding site", national meeting of the American Society for Biochemistry and Molecular Biology, San Diego, CA, April 2012.

5. *Alaimo, P.J., Langenhan, J.M., and **Suydam, I.T.** "Thinking like a scientist in the organic chemistry teaching lab: Designing experiments to generate data for analysis and discussion" national meeting of the American Chemical Society, Denver, CO, August 2011.

4. ***Suydam, I.T.** and Strobel S.A., "Fluorine substituted adenosines as probes of nucleobase protonation in catalytic RNA", national meeting of the American Chemical Society, Philadelphia, PA, August 2008.

3. ***Suydam, I.T.** and Strobel S.A., "Fluorine substituted adenosines as probes of nucleobase protonation in the Varkud Satellite ribozyme", national meeting of the RNA Society, Madison, WI, May 2007.

2. ***Suydam, I.T.** and Boxer S.G., "Vibrational probe of human aldose reductase electrostatics", national meeting of the Biophysical Society, Long Beach, CA, February 2005.

1. ***Suydam, I.T.**, Park, E.S., Romanova, Z.S., and Boxer S.G., "Vibrational probes for electrostatic fields in proteins", national meeting of the Biophysical Society, San Francisco, CA, February 2002.

Regional/Undergraduate Conferences (*presenting author(s), mentored undergraduates underlined)

7. *Bright, D.K., Do, E., Jiang, Y., Ramanathan, R., Suydam, I.T. and Woodrow, K.A., "Evaluating the long-term release of antiretrovirals from nanoparticles", University of Washington Amgen Scholars research symposium, Seattle, WA, August 2013.

6. Davison, J.M., *Neilson, B.K., Pahl, M.N. and **Suydam, I.T.**, "The Synthesis of $preQ_1$ analogs to identify required contacts in the $preQ_1$ riboswitch binding site", Washington NASA space grant conference, Seattle, WA, September 2013.

5. *Neilson, B.K., Ryon, L.W. and **Suydam, I.T.**, "Electrostatic contributions to ligand binding in the $preQ_1$ riboswitch" annual West Coast Biological Sciences Undergrad Research Conference, San Diego, CA, April 2012.

4. *Buonarati, O.R., *Rozal, L.M., *Ryon, L.W. and **Suydam, I.T.**, "Metabolite structure influences $preQ_1$ metabolite binding", annual Murdock Conference on Undergraduate Research, Seattle, WA, November 2011.

3. *Andrews, D.M., *Symon, M.R. and **Suydam, I.T.**, "Fluorescence based assays of metabolite binding in the $PreQ_1$ riboswitch", Murdock Conference on Undergraduate Research, McMinnville, OR, November 2010.

2. *__Suydam, I.T.__ and Strobel S.A., "Fluorine substituted adenosines as probes of nucleobase protonation in catalytic RNA", northwest regional meeting of the American Chemical Society, Tacoma, WA, June 2009.

1. *__Suydam, I.T.__ and Strobel S.A., "Fluorine substituted adenosines as probes of nucleobase protonation in functional RNAs", Chemistry/Biology Interface Seminar Series, New Haven, CT, December 2008.

EXTERNAL RESEARCH GRANTS AND FUNDING

Active Research Funding

2014 – 2016 NIH PIP R01, NIAID (1R01AI112002-01), $46,961 sub-contract.
"Combination HIV prevention in drug-eluting fibers: designing for efficacy and use", (K.A. Woodrow, PI)

Pending Research Funding

Submitted July. 2014 Research Corporation, Cottrell College Science Award, $40,000.
"Molecular determinants of ligand recognition in the $preQ_1$ riboswitch"

Completed Research Funding

2010 – 2012 Department of Bioengineering, University of Washington, $40,000.
Undergraduate Research Contract

INTERNAL RESEARCH GRANTS AND FUNDING

Active Research Funding

2014 – 2015 Clare Boothe Luce Research Program, $13,000.
"Formulation and release kinetics of antiretroviral loaded PLGA nanoparticles"

2014 Murdock College Science Research Program, $4,000.
"Purification of antiretrovirals for combination drug delivery"

Completed Research Funding

2012 – 2014 New Faculty Startup Funds, College of Science and Engineering, $75,000.

2013 Murdock College Science Research Program, $7,500.
"Investigating the role of $preQ_0$ polarity on binding affinity"

2013 Washington NASA Space Grant Program, $4,345.
"Investigating the role of $preQ_1$ charge on binding affinity"

2010 Murdock College Science Research Program, $14,500.
"Fluorescence based assays of metabolite binding in the $PreQ_1$ riboswitch"

TEACHING AND UNGERGRADUATE MENTORING

Seattle University Courses

WQ 2010 – Present	Chemistry 499: Senior Synthesis II: Independent Research
WQ 2013 - 2014	Chemistry 371: Physical Chemistry Laboratory I
SQ 2011 - 2012	Chemistry 347: Organic Chemistry Laboratory III
WQ 2012	Chemistry 346: Organic Chemistry Laboratory II
FQ 2010 - 2011	Chemistry 345: Organic Chemistry Laboratory I
SQ 2011 - 2012	Chemistry 337: Organic Chemistry III
WQ 2012	Chemistry 336: Organic Chemistry II
FQ 2011	Chemistry 335: Organic Chemistry I
SQ 2010	Chemistry 242: Fundamental Organic Chemistry Laboratory II
WQ 2010 - 2011	Chemistry 241: Fundamental Organic Chemistry Laboratory I
SQ 2010	Chemistry 232: Fundamental Organic Chemistry II
WQ 2010 - 2011	Chemistry 231: Fundamental Organic Chemistry I
SQ 2013	Chemistry 133: General Chemistry Laboratory III
WQ 2013 - 2014	Chemistry 132: General Chemistry Laboratory II
FQ 2012 - 2013	Chemistry 131: General Chemistry Laboratory I
SQ 2013	Chemistry 123: General Chemistry III
WQ 2013 - 2014	Chemistry 122: General Chemistry II
FQ 2012	Chemistry 121: General Chemistry I

Current Undergraduate Research Students

	Student	Dates of Research	Anticipated Degree
15.	Alaina M. Bever	3/14 - present	B.S. Mechanical Engineering, SQ 2016
14.	Mikaela E. Ebner	3/14 - present	B.S. Biochemistry, SQ 2016
13.	Jenna M. Davison	2/13 - present	B.S. Biochemistry, SQ 2015

Previous Undergraduate Research Students

	Student	Dates of Research	Position after Graduation
12.	Anthony J. Krzysko	9/13 - 5/14	Pacific Northwest National Lab
11.	Mohammed H. Alshathri	9/13 - 3/14	Undergraduate, Seattle University
10.	Danielle K. Bright	10/12 - 5/14	Ph.D. candidate, Tufts
9.	Mallory H. Pahl	5/12 - 5/14	
8.	Ben K. Neilson	4/12 - 5/14	
7.	Dennis W. Piehl	3/12 - 5/13	Ph.D. candidate, U.I. Urbana-Champaign
6.	Lauren W. Ryon	6/11 - 5/13	Ph.D. candidate, U.C. San Diego
5.	Lily Jeong	3/12 - 5/13	Medial School Applicant
4.	Olivia R. Buonarati	6/11 - 9/11	Ph.D. candidate, U.C. Davis

3.	Leo M. Rozal	6/11 - 9/11	Medical Student, Creighton University
2.	Melissa R. Symon	6/10 - 9/10	Medical Student, Creighton University
1.	David M. Andrews	6/10 - 6/11	Ph.D. candidate, U.N.C. Chapel Hill