

James L. Hougland

Department of Chemistry
Syracuse University
Syracuse, NY 13244-4100

Email: hougland@syr.edu
Tel (office): (315) 443-1134
Tel (fax): (315) 443-4070

Professional Experience

2012-present	Adjunct Asst. Professor	Department of Biochemistry and Molecular Biology SUNY Upstate Medical University, Syracuse, NY
2010-present	Assistant Professor	Department of Chemistry Department of Biology (By Courtesy) Syracuse University, Syracuse, NY
2005-2010	NIH Postdoctoral Fellow	Department of Chemistry University of Michigan, Ann Arbor, MI

Education

2005-2010	Postdoctoral training	Chemistry / Biological Chemistry University of Michigan, Ann Arbor, MI Advisor: Professor Carol A. Fierke
2005	Ph.D.	Chemistry University of Chicago, Chicago, IL Advisor: Professor Joseph A. Piccirilli
1999	M.S.	Chemistry University of Chicago, Chicago, IL
1998	B.A. (with honors) <i>magna cum laude</i>	Chemistry and Integrated Science Northwestern University, Evanston, IL

Awards and Fellowships

<i>Faculty</i>	March of Dimes Basil O'Connor Starter Scholar Award, 2014-2016 American Diabetes Association Junior Faculty Award, 2013-2015 Early Career Investigator Travel Fellowship, Diabetic Kidney Disease: Drug Discovery and Clinical Development Challenges, New York Academy of Sciences, December 2014 Pew Biomedical Scholars Nominee, Syracuse University, 2011
<i>Postdoctoral</i>	NIH Postdoctoral Fellowship (2006-2009) American Heart Association Postdoctoral Fellowship (<i>declined</i>) Graduate and Postdoctoral Travel Award, 2007 ASBMB National Meeting American Chemical Society Division of Biological Chemistry Travel Award, Spring 2008 ACS National Meeting Archives of Biochemistry and Biophysics Poster Award, 21 st Enzyme Mechanisms Conference
<i>Graduate</i>	NIH Predoctoral Training Program at the Interface of Chemistry and Biology McCormick Fellowship Department of Defense Predoctoral Fellowship, Honorable Mention George Van Dyke Tiers Student Travel Award First Prize, 2005 Graduate Student Research Poster Session, Dept. of Chemistry
<i>Undergraduate</i>	National Merit Scholarship Dean's List Phi Beta Kappa Golden Key Honor Society Lewis H. Sarrett Undergraduate Research Award (Chemistry Department)

Professional Memberships and Affiliations

Upstate Cancer Research Institute
Hill Collaboration in Environmental Medicine Cancer Focus Group
American Association for the Advancement of Science
The American Chemical Society
American Society for Biochemistry and Molecular Biology
New York Academy of Sciences
American Diabetes Association
Alpha Chi Sigma

Publications

As faculty at Syracuse University (undergraduate authors underlined, graduate student authors denoted with #)

Y. Zhang, M. Blanden[#], S. Chava, S. A. Gangopadhyay[#], M. Rashidian, **J. L. Houglan**, and M. D. Distefano

"Simultaneous site-specific dual protein labeling using protein prenyltransferases"

Manuscript submitted

K. R. McGovern[#], J. E. Darling[#], and **J. L. Houglan**

"Alkyl fluorophosphonate treatment enhances ghrelin O-acyltransferase activity assays through inhibition of serine ester hydrolysis"

Manuscript submitted

M. Wellman, Z. Patterson, H. Mackay, J. E. Darling[#], B. K. Mani, J. Zigman, **J. L. Houglan**, and A. Abizaid

"Novel regulator of acylated ghrelin, CF801, reduces body weight, food intake & adiposity in mice"

Front. Endocrinol. **2015**, *6*, 144. [Link to journal](#)

K. R. McGovern[#], J. E. Darling[#], and **J. L. Houglan**

"Progress in small molecule and biologic therapeutics targeting ghrelin signaling" – Invited review (peer reviewed)

Mini. Rev. Med. Chem. **2015**, Electronically published July 21. [Link to journal](#)

F. Zhao, J. E. Darling[#], R. A. Gibbs, and **J. L. Houglan**

"A new class of ghrelin O-acyltransferase inhibitors incorporating triazole-linked lipid mimetic groups"

Bioorg. Med. Chem. Lett. **2015**, *25*, 2800-3. [Link to journal](#)

J. E. Darling[#], F. Zhao, R. J. Loftus[#], L. M. Patton, R. A. Gibbs, and **J. L. Houglan**

"Structure-activity analysis of human ghrelin O-acyltransferase reveals chemical determinants of ghrelin selectivity and acyl group recognition"

Biochemistry **2015**, *54*, 1100-10. [Link to journal](#)

S. C. Flynn[#], D. E. Lindgren and **J. L. Houglan**

"Quantitative determination of cellular farnesyltransferase activity: Towards defining the minimum substrate reactivity for biologically relevant protein farnesylation"

ChemBioChem, **2014**, *15*, 2205-10. [Link to journal](#)

S. A. Gangopadhyay[#], E. L. Losito, and **J. L. Houglan**

"Targeted reengineering of protein geranylgeranyltransferase type I selectivity functionally implicates active site residues in protein substrate recognition"

Biochemistry, **2014**, *53*, 434-46. [Link to journal](#)

J. E. Darling[#], E. P. Prybolsky, M. Sieburg, and **J. L. Houglan**

"A fluorescent peptide substrate facilitates investigation of ghrelin recognition and acylation by ghrelin O-acyltransferase"

Anal. Biochem., **2013**, *437*, 68-76. [Link to journal](#)

J. L. Houglan, J. E. Darling[#], and S. C. Flynn[#]

“Post-translational protein modification during oxidative stress”

In: “*Molecular Basis of Oxidative Stress: Chemistry, Mechanisms, and Disease Pathogenesis*”, F.A. Villamena, ed., **2013**, Chapter 3, 71-92. [Link to publisher](#)

J. L. Houglan, S. A. Gangopadhyay[#], and C. A. Fierke

“Expansion of protein farnesyltransferase specificity using “tunable” active site interactions: Development of bioengineered prenylation pathways”

J. Biol. Chem., **2012**, *287*, 38090-100. [Link to journal](#)

A. Placzek, **J. L. Houglan**, and R. A. Gibbs

“Synthesis of frame-shifted farnesyl diphosphate analogs”

Org. Lett., **2012**, *14*, 4038-41. [Link to journal](#)

Manuscripts in preparation

K. McGovern[#], [A. Garagozzo](#), [A. J. Schramm](#), and **J. L. Houglan**

“Small-molecule inhibitors of hGOAT identified by diversity library screening”

K. McGovern[#], R. L. Loftus[#], and **J. L. Houglan**

“Determination of functionally essential residues within hGOAT”

M. J. Blanden[#], Y. Zhang, M. Distefano, and **J. L. Houglan**

“Bioorthogonal chemoenzymatic protein labeling and isolation from eukaryotic cell lysates using engineered prenyltransferase variants”

Postdoctoral, graduate, and undergraduate publications

N. London, C. L. Lamphear, **J. L. Houglan**, C. A. Fierke, and O. Schueler-Furman

“Identification of a novel class of farnesylation targets by structure-based modeling of binding specificity”

PLoS Comp. Biol., **2011**, *7*, e1002170. [Link to journal](#)

C. L. Lamphear, E. A. Zverina, **J. L. Houglan**, and C. A. Fierke

“Global identification of protein prenyltransferase substrates: Defining the prenylated proteome”

In: *The Enzymes, Volume 29: Protein Prenylation Part A*, F. Tamanoi, C. Hrycyna and M. Bergo, eds., **2011**, Chapter 12, 207-234. [Link to chapter](#)

J. L. Houglan, K. A. Hicks, H. L. Hartman, R. A. Kelly, T. J. Watt, and C. A. Fierke

“Identification of novel peptide substrates for protein farnesyltransferase reveals two substrate classes with distinct sequence selectivities”

J. Mol. Biol., **2010**, *395*, 176-190. [Link to journal](#)

A. J. Krzysiak, A. V. Aditya, **J. L. Houglan**, C. A. Fierke, and R. A. Gibbs

“Synthesis and screening of a CaaL peptide library versus FTase reveals a surprising number of substrates”

Bioorg. Med. Chem. Lett., **2010**, *20*, 767-770. [Link to journal](#)

J. L. Houglan and C. A. Fierke

“Getting a handle on protein prenylation” (News and Views editorial)

Nature Chem. Biol., **2009**, *5*, 197-198. [Link to journal](#)

J. L. Houglan, C. L. Lamphear, S. A. Scott, R. A. Gibbs, and C. A. Fierke

“Context-dependent substrate recognition by protein farnesyltransferase”

Biochemistry, **2009**, *48*, 1691-1701. [Link to journal](#)

- highlighted on *Biochemistry* home page

- selected by *Biochemistry* editors for inclusion into “Thematic Collection: Membrane Proteins”

- J. L. Houglan** and J. A. Piccirilli
"2'-Amino-modified ribonucleotides as probes for local interactions within RNA"
Methods Enzymol., **2009**, *468*, 107-125. [Link to journal](#)
- J. L. Houglan**, **R. N. Sengupta**, Q. Dai, S. K. Deb, , and J. A. Piccirilli
"The 2'-hydroxyl group of the guanosine nucleophile donates a functionally important hydrogen bond in the *Tetrahymena* ribozyme reaction"
Biochemistry, **2008**, *47*, 7684-7694. [Link to journal](#)
- chosen as a "Hot Article" by editors of *Biochemistry*
- Q. Dai, S. K. Deb, **J. L. Houglan**, and J. A. Piccirilli
"Improved synthesis of 2'-amino-2'-deoxyguanosine and its phosphoramidite"
Bioorgan. Med. Chem., **2006**, *14*, 705-713. [Link to journal](#)
- J. L. Houglan**, J. A. Piccirilli, M. Forconi, J. Lee, and D. Herschlag
"How the group I intron works: A case study of RNA structure and function"
In: *The RNA World*, 3rd Edition, R.F. Gesteland, J.F. Atkins, and T.R. Cech, eds., **2006**, Chapter 6, 133-206. [Link to publisher](#)
- J. L. Houglan**, A.V. Kravchuk, D. Herschlag, and J. A. Piccirilli
"Functional identification of catalytic metal ion binding sites within RNA"
PLoS Biol., **2005**, *3*, e277. [Link to journal](#)
- J. L. Houglan**, S. K. Deb, **D. Maric**, and J. A. Piccirilli
"An atomic mutation cycle for exploring RNA's 2'-hydroxyl group"
J. Am. Chem. Soc. **2004**, *42*, 13578-9. [Link to journal](#)
- I. Cohen, H. Li, **J. L. Houglan**, M. Mrksich, and S. R. Nagel
"Using selective withdrawal to coat microparticles"
Science **2001**, *292*, 265-267. [Link to journal](#)
- F. D. Lewis, **J. L. Houglan**, and S. A. Markarian
"Formation and anomalous behavior of aminonaphthalene-cinnamionitrile exciplexes"
J. Phys. Chem. A **2000**, *104*, 3261-3268. [Link to journal](#)

Patent Applications

- "Fluorescence assay for ghrelin *O*-acyltransferase activity"
Utility patent application #14/046,131; Filed 10/4/2013
Inventors: **James L. Houglan**; Joseph E. Darling
- "Inhibitors targeting human ghrelin *O*-acyltransferase"
Provisional patent application #61/846,235; Filed 7/15/13
Inventors: **James L. Houglan**; Joseph Darling; Richard Gibbs; Feifei Zhao

Funding

active

- "Investigating ghrelin *O*-acyltransferase as a potential target for treating Prader-Willi syndrome"
Basil O'Connor Starter Scholar Research Award, March of Dimes
Principal Investigator: James L. Houglan
Period: 2/1/14-1/31/16
Total cost: \$150,000
- "Development and validation of ghrelin *O*-acyltransferase inhibitors for treating hyperphagia in Prader-Willi syndrome" (*competitive renewal of Best Idea Grant*)
Foundation for Prader-Willi Research
Principal Investigator: James L. Houglan
Period: 9/1/15-8/31/16
Total cost: \$75,600

completed

“Targeting ghrelin acylation for control of glucose homeostasis”
American Diabetes Association Junior Faculty Award (Bridge Grant)
Principal Investigator: James L. Houglan
Period: 11/1/13-12/31/14 (no cost extension to 6/30/15)
Total cost: \$70,000

[Project profile](#)

“Investigation of ghrelin *O*-acyltransferase as a target for treating for hyperphagia in Prader-Willi syndrome”
Best Idea Grant, Foundation for Prader-Willi Research
Principal Investigator: James L. Houglan
Period: 8/1/13-7/31/14 (no cost extension to 12/31/14)
Total cost: \$108,000

[Project profile](#)

2014 Young Investigators Internship Program
(Undergraduate researcher supplement to “Investigation of ghrelin *O*-acyltransferase as a target for treating for hyperphagia in Prader-Willi syndrome”)
Foundation for Prader-Willi Research
Principal Investigator: James L. Houglan
Period: 6/10/14-8/5/14
Total cost: \$6,000

[Project profile](#)

“p53 and APC tumor suppressor gene mutation effects on protein prenylation”
American Cancer Society Institutional Research Grant (Upstate Cancer Research Institute, IRG-11-052-01)
Principal Investigator: James L. Houglan
Period: 1/1/13 – 12/31/13
Total cost: \$30,000

“Evolution of novel farnesyltransferase activity”
National Institutes of Health Postdoctoral Fellowship (F32 GM078894)
Principal Investigator: James L. Houglan
Period: 8/1/06 – 1/31/09
Total cost: \$123,486

Professional Development

June 2014	ASBMB Mentoring Workshop for Early Career Scientists Washington, DC
July 2013	NIH Mentoring Workshop for New Faculty in Organic and Biological Chemistry Dallas, TX
February 2013	STEM Partnership Program SU ADVANCE Syracuse, NY
October 2012	National Science Foundation Grants Conference Arlington, VA
July 2012	National Institutes of Health Regional Seminar on Program Funding and Grants Administration Washington, D.C.
August 2010	New Faculty Training Workshops (teaching strategies, group mentorship, diversity awareness) Syracuse University

Teaching

Syracuse University

Summer 2015

Spring 2015

CHE690 - Graduate Independent Study (Campana)
CHE685 - Organic Mechanisms (enrollment of 6)
BCM460 - Undergraduate Research in Biochemistry (Leslie Patton, Anthony Schramm)
BIO460 - Undergraduate Research in Biology (Paige Armas)
BCM499 - Undergraduate Honors Capstone Research (Leslie Patton)
CHE690 - Graduate Independent Study (Cleverdon)

Fall 2014

CHE275 - Organic Chemistry I (enrollment of 193)
BIO460 - Undergraduate Research in Biology (Paige Armas)
CHE450 - Undergraduate Research in Chemistry (Amanda Lieu)
CHE690 - Graduate Independent Study (Cleverdon)

Summer 2014

Spring 2014

CHE690 - Graduate Independent Study (Cleverdon)
CHE450 - Undergraduate Research in Chemistry (Danielle Lindgren)
CHE690 - Graduate Independent Study (McGovern)

Fall 2013

CHE275 - Organic Chemistry I (enrollment of 183)
CHE690 - Graduate Independent Study (McGovern)
Guest Lecture - CHE427/627 "Introduction to Posttranslational Modification"
Guest Lecture - CHE678 "Enzyme Regulation"

Summer 2013

CHE690 - Graduate Independent Study (McGovern)

Spring 2013

BCM460 - Undergraduate Research in Biochemistry (Edward Prybolsky)
CHE450 - Undergraduate Research in Chemistry (Danielle Lindgren)
CHE690 - Graduate Independent Study (Blanden, Gangopadhyay)

Fall 2012

CHE675 - Advanced Organic Chemistry (enrollment of 11)
BIO575 / BCM600 - Biochemistry (1 of 3 co-instructors; enrollment of 84)
BCM460 - Undergraduate Research in Biochemistry (Susan Zhang, Edward Prybolsky)
CHE690 - Graduate Independent Study (Blanden, Gangopadhyay, Loftus)
Guest Lecture - CHE427/627 "Introduction to Posttranslational Modification"
Guest Lecture - CHE600 "Enzyme Kinetics"

Summer 2012

CHE690 - Graduate Independent Study (Blanden, Gangopadhyay, Loftus)

Spring 2012

CHE685 - Organic Mechanisms (enrollment of 9)
CHE450 - Undergraduate Research in Chemistry (Edward Prybolsky)
CHE690 - Graduate Independent Study (Darling, Flynn)

Fall 2011

CHE675 - Advanced Organic Chemistry (enrollment of 14)
BCM460 - Undergraduate Research in Biochemistry (Susan Zhang, Edward Prybolsky)
CHE690 - Graduate Independent Study (Darling, Flynn)
Guest Lecture - CHE427/627 "Introduction to Posttranslational Modification"

Summer 2011

CHE690 - Graduate Independent Study (Darling, Flynn)

Spring 2011

CHE685 - Organic Mechanisms (enrollment of 9)
BCM460 - Undergraduate Research in Biochemistry (Susan Zhang, Edward Prybolsky)

Fall 2010

CHE600 - Chemistry and Biology of Posttranslational Modification (enrollment of 11)
Guest Lecture - CHE427/627 "Introduction to Posttranslational Modification"

University of Michigan

- June 2008 - Aug. 2008 *Rotation student mentor*
Noah Wolfson (Summer 2008)
subsequent position: Graduate researcher in Fierke laboratory
- Sept. 2007 - Dec. 2007 Elaina Zverina (Fall 2007)
subsequent position: Graduate researcher in Fierke laboratory
- Feb. 2007- May 2007 Corissa Lamphear (Spring 2007)
subsequent positions: Graduate researcher in Fierke laboratory; Visiting Assistant Professor, Hope College
- Sept. 2006 - Dec. 2006 Xiaomu Guan (Fall 2006)
subsequent positions: Graduate researcher in Fierke laboratory; Postdoctoral fellow, Harvard University

University of Chicago

- June 2005 - Aug. 2005 *Undergraduate research mentor*
Raghuvir Sengupta, University of Chicago (2005)
subsequent positions: Graduate student, Stanford University; Medical school, Stanford University
- June 2004 - Sept. 2004 Ryan Lee, Grinnell College (2004)
subsequent positions: Graduate student, Mayo Clinic College of Medicine; Postdoctoral fellow, National Institutes of Health
- June 2002 - Sept. 2002 Danijela Maric, Beloit College (2002)
subsequent position: Graduate student, Northwestern University
- Sept. 1998 - June 1999 Teaching Assistant, Organic Chemistry

Northwestern University

- March 1998 - June 1998 Laboratory Teaching Assistant, Organic Chemistry
- June 1996 - Sept. 1996 Laboratory Teaching Assistant, Organic Chemistry
- Sept. 1995 - June 1997 Peer Tutor, Integrated Science Program

Training and Advising

Graduate Students (Ph. D.)

- Fall 2014 - present Maria Campana (STEM fellow)
- Fall 2013 - present Elizabeth Cleverdon
- Fall 2012 - present Kayleigh McGovern (GAANN Fellow)
- Fall 2012 - Spring 2013 Rachel Meredith (IGERT Fellow, joint with Prof. Martin Forstner, SU Physics)
- Fall 2011 - present Melanie Blanden (STEM Fellow, GAANN Fellow)
- Fall 2011 - present Soumyashree Gangopadhyay
- Fall 2010 - present Joseph Darling (NSF Predoctoral Fellow)
- Fall 2010 - present Susan Flynn
- Fall 2010 - Spring 2012 Robert Wilson (joint with Prof. Daniel Clark)

Graduate Students (M. S.)

- Fall 2011 - Summer 2013 Rosemary Loftus (GAANN Fellow)
Graduated with M.S. in Chemistry, June 2013

Undergraduate Students (Syracuse University)

- Summer 2014 - present Paige Armas
- Spring 2014 - present Anthony Schramm
- Fall 2013 - Spring 2015 Amanda Lieu
Subsequent position: Undergraduate researcher, Totah research group, Dept. of Chemistry, Syracuse University
- Fall 2013 - Spring 2015 Leslie Patton (Renee Crown Honors student, graduated with Honors and Distinction in Biochemistry, Phi Beta Kappa)
Subsequent position: Graduate school, Dept. of Biochemistry, Texas A&M University
- Spring 2013 - Spring 2014 Danielle Lindgren
Subsequent position: Masters degree program, FNSSI, Syracuse University

Fall 2010 - Spring 2013	Susan Zhang (Renee Crown Honors student, graduated with Honors and Distinction in Biochemistry) <i>Subsequent position: Laboratory technician, Dept. of Microbiology, New York University Langone Medical Center</i>
Fall 2010 - Spring 2013	Edward Prybolsky (Renee Crown Honors student, graduated with Honors and Distinction in Biochemistry) <i>Subsequent position: Graduate school, Dept. of Chemistry, University of Chicago</i>
<i>Undergraduate Students (REU and other summer programs)</i>	
June 2015 - August 2015	Casey Cabrinha (REU, St. Lawrence University)
June 2014 - August 2014	Brea Hampton (REU, High Point University)
June 2013 - August 2013	Ariana Garagozzo (REU and FPWR Young Investigator, Dickinson College) Rebecca D'Amico (REU, SUNY-Plattsburgh) <i>Subsequent position: Graduate school, Biochemistry and Molecular Biology Program, Penn State University</i>
June 2012 - August 2012	Kevin Siegenthaler (REU, SUNY-Geneseo) <i>Subsequent position: Graduate school, Biochemistry, Molecular and Cell Biology Program, Cornell University</i>
June 2011 - Aug. 2011	Erica Losito (REU, Hamilton College) <i>Subsequent position: Graduate school, Program in Molecular Biophysics, Johns Hopkins University</i>

Service

Professional

Service as reviewer

(Repeat reviewer for Chembiochem,

ACS Chemical Biology, and Bioconjugate Chemistry)

Board of reviewers, *Journal of Pediatric Biochemistry*

Ad hoc reviewer, *Chembiochem*

Ad hoc reviewer, *Journal of Chemical Information and Modeling*

Ad hoc reviewer, *Journal of Computer Aided Molecular Design*

Ad hoc reviewer, *Bioconjugate Chemistry*

Ad hoc reviewer, *Endocrine*

Ad hoc reviewer, *ACS Chemical Biology*

Ad hoc reviewer, *Tetrahedron Letters*

Ad hoc reviewer, *PLoS One*

Ad hoc reviewer, *Biochemistry*

Ad hoc reviewer, *Journal of Physiology and Pharmacology*

Ad hoc reviewer, *Amino Acids*

(Repeat grant reviewer for the National Science Foundation)

Grant reviewer, Foundation for Prader-Willi Research

Grant reviewer, Research Corporation for Scientific Advancement

Grant reviewer, Medical Research Council

Grant reviewer, National Science Foundation

NIH MSFB study section (Early Career Reviewer), Feb 2014

Meeting organizer

July 2015

Session chair, 2015 FASEB Science Research Conference: Protein Lipidation, Signaling, and Membrane Domains

April 2013

Session chair and program committee, 39th Annual Northeast Bioengineering Conference (NEBEC)

Presentations

Invited seminars

April 2015 (upcoming)

“Ghrelin acylation by GOAT: a potential target for controlling glucose homeostasis”

Taft Seminar Series, East Carolina Diabetes & Obesity Institute (ECDOI)
East Carolina University

September 2015

“Chemistry and Biology of Protein Lipidation”

Department of Chemistry and Biomolecular Sciences, University of Ottawa

- “Chemistry and Biology of Protein Lipidation”
Department of Chemistry, Syracuse University
- May 2015 “Chemistry and Biology of Protein Lipidation”
Department of Biochemistry, Case Western University
- April 2015 “Chemistry and Biology of Protein Lipidation”
Department of Molecular Medicine, Cornell University
- “Chemistry and Biology of Protein Lipidation”
Department of Pharmacology, Johns Hopkins University
- March 2015 “Chemistry and Biology of Protein Lipidation”
Department of Chemistry, Wayne State University
- “Chemistry and Biology of Protein Lipidation”
Department of Chemistry, University of Michigan
- “Chemistry and Biology of Protein Lipidation”
Department of Chemistry, SUNY-Buffalo
- February 2015 “Chemistry and Biology of Protein Lipidation”
Department of Chemistry, Purdue University
- “Chemistry and Biology of Protein Lipidation”
Department of Chemistry, University of Chicago
- “Chemistry and Biology of Protein Lipidation”
Department of Chemistry and Biochemistry, University of the Sciences
- “Chemistry and Biology of Protein Lipidation”
Department of Chemistry, Villanova University
- January 2015 “Ghrelin acylation by ghrelin O-acyltransferase: Substrate selectivity,
mechanism, and inhibitor development”
24th Enzyme Mechanisms Meeting, Galveston, TX
- November 2014 “Ghrelin acylation as a target to treat hyperphagia in Prader-Willi syndrome”
2014 FPWR Research Conference, Garden City, NY
- September 2014 “Chemistry and Biology of Protein Lipidation”
Department of Chemistry, New York University
- “Chemistry and Biology of Protein Lipidation”
Department of Neuroscience, Carleton University
- “Chemistry and Biology of Protein Lipidation”
Department of Chemistry, University of New Hampshire
- April 2014 “Chemistry and Biology of Protein Lipidation”
Department of Chemistry, SUNY-Potsdam
- March 2014 “Ghrelin acylation by human ghrelin O-acyltransferase: Substrate selectivity,
mechanism, and inhibitor development”
Chemical Biology of Protein Lipid Modification Symposium
247th American Chemical Society National Meeting, Dallas, TX
- February 2014 “Chemistry and Biology of Protein Lipidation”
Department of Chemistry, Xavier University of Louisiana
- “Chemistry and Biology of Protein Lipidation”
Department of Chemistry, Nicholls State University
- “Chemistry and Biology of Protein Lipidation”
Department of Chemistry, Loyola University New Orleans

- October 2013 "Chemistry and Biology of Protein Lipidation"
Department of Chemistry, Clarkson College
- September 2013 "Chemistry and Biology of Protein Lipidation"
Department of Chemistry, Hamilton College
- July 2013 "Ghrelin acylation by human ghrelin *O*-acyltransferase: Substrate selectivity,
mechanism, and inhibitor development"
FASEB Summer Research Conference on Protein Lipidation, Signaling, and
Membrane Domains, Saxtons River, VT
- November 2012 "Chemistry and Biology of Protein Lipidation"
Natural Sciences Seminar Series
Department of Chemistry, York College
- April 2012 "Chemistry and Biology of Protein Lipidation"
Department of Biochemistry and Molecular Biology, SUNY-Upstate Medical
University
- "Chemistry and Biology of Protein Lipidation"
Department of Chemistry, SUNY-College of Environmental Science and
Forestry
- March 2011 "The Challenge of Specificity in Post-Translational Modification: Substrate
Recognition by Protein Farnesyltransferase"
Department of Biology, Syracuse University
- "The Challenge of Specificity in Post-Translational Modification: Substrate
Recognition by Protein Farnesyltransferase"
Department of Chemistry, Adelphi University
- July 2010 "The Challenge of Specificity in Post-Translational Modification: Substrate
Recognition by Protein Farnesyltransferase"
SB3 Symposium, Syracuse University
- February 2010 "The Challenge of Specificity in Post-Translational Modification: Substrate
Recognition by Protein Farnesyltransferase"
Department of Chemistry, Syracuse University
- January 2010 "The Challenge of Specificity in Post-Translational Modification: Substrate
Recognition by Protein Farnesyltransferase"
Department of Chemistry and Chemical Biology,
Indiana University-Purdue University Indianapolis (IUPUI)
- "The Challenge of Specificity in Post-Translational Modification: Substrate
Recognition by Protein Farnesyltransferase"
Department of Chemistry & Biochemistry, Utah State University
- December 2009 "The Challenge of Specificity in Post-Translational Modification: Substrate
Recognition by Protein Farnesyltransferase"
Department of Chemistry & Biochemistry, Worcester Polytechnic Institute
- "The Challenge of Specificity in Post-Translational Modification: Substrate
Recognition by Protein Farnesyltransferase"
Department of Chemistry, Lehigh University
- February 2005 "Investigating Catalysis in the *Tetrahymena* Group I Ribozyme"
College of Pharmacy, University of Texas at Austin
Medicinal Chemistry Division Seminar
- Oral presentations*
- May 2013 "Developing Methods for Quantitative In Vivo Studies of Protein Prenylation"
Upstate Cancer Research Institute Principal Investigator Seminar

- May 2012 "Chemistry and Biology of Protein Lipidation"
Upstate Cancer Research Institute Principal Investigator Seminar
- October 2008 "Context-dependent Substrate Sequence Recognition by Protein
Farnesyltransferase"
Mechanistic Biochemistry Club, University of Michigan, Ann Arbor, MI
- "Context-dependent Substrate Sequence Recognition by Protein
Farnesyltransferase"
28th Midwest Enzyme Chemistry Conference, Chicago, IL
- August 2007 "Defining the Functional Basis for Specificity in Protein Farnesyltransferase"
Biological Chemistry Retreat, University of Michigan, Kalamazoo, MI
- May 2005 "Functionally Important 2'-Hydroxyl Hydrogen Bond Donors Within RNA
Revealed by Atomic Mutation Cycle Analysis"
Tenth Annual Meeting of the RNA Society, Banff, Alberta, Canada
- June 2004 "Identifying Catalytic Metal Ion Binding Sites Within the Core of the
Tetrahymena Group I Ribozyme"
Ninth Annual Meeting of the RNA Society, Madison, WI
- January 2004 "Defining Catalytic Metal Ion Binding Sites in the *Tetrahymena* Group I
Ribozyme"
Chicagoland RNA Club, Chicago, IL
- October 2003 "Defining Catalytic Metal Ion Binding sites in the *Tetrahymena* Group I
Ribozyme"
Rustbelt RNA Meeting, Mt. Sterling, OH
- January 2003 "Elucidating the Contribution of Transition-State Hydrogen Bonding in the
Tetrahymena Ribozyme"
Chemistry-Biology Interface Training Grant Integrative Discussion, Chicago, IL
- October 2002 "Identifying Ligands Within the *Tetrahymena* Ribozyme that Bind and Position
the Catalytic Metal Ions"
Molecular Biosciences Retreat, University of Chicago, Delavan, WI
- October 2001 "Building an RNA Active Site from the Inside Out: The Outside"
Chemistry-Biology Interface Training Grant Annual Symposium, Chicago, IL
- Posters*
- December 2014 "Ghrelin acylation by human ghrelin O-acyltransferase: A novel target for
control of glucose homeostasis"
Diabetic Kidney Disease: Drug Discovery and Clinical Development Challenges
New York Academy of Sciences, New York, NY
- July 2014 "Ghrelin acylation by human ghrelin O-acyltransferase: Substrate selectivity,
mechanism, and inhibitor development"
Enzymes, Coenzymes, and Metabolic Pathways Gordon Conference, Waterville
Valley Resort, NH
- January 2013 "Investigation of ghrelin acylation by human ghrelin O-acyltransferase"
23rd Enzyme Mechanisms Meeting, San Diego, CA
- July 2011 "'Tunable' active site interactions engender substrate selectivity in protein
farnesyltransferase"
FASEB Summer Research Conference on Protein Lipidation, Signaling, and
Membrane Domains, Saxtons River, VT
- January 2009 "Context-dependent substrate sequence recognition by protein
farnesyltransferase"
21st Enzyme Mechanisms Conference, Tucson, AZ

- April 2008 “Investigating the functional basis for specificity in protein farnesyltransferase”
ACS National Meeting, New Orleans, LA
- April 2007 “Investigating the functional basis for specificity in protein farnesyltransferase”
ASBMB National Meeting, Washington, D.C.
- September 2006 “Investigating the functional basis for specificity in protein farnesyltransferase”
Midwest Enzyme Chemistry Conference, Evanston, IL
- August 2006 “Investigating the functional basis for specificity in protein farnesyltransferase”
Biological Chemistry Retreat, University of Michigan, Kalamazoo, MI
- June 2004 “Identifying catalytic metal ion binding sites within the core of the *Tetrahymena*
group I ribozyme”
FASEB Summer Research Conference on Nucleic Acid Enzymes, Saxtons River,
VT
- August 2002 “Catalytic metal ion binding sites in the *Tetrahymena* group I ribozyme: The
search for ligands”
Ribozymes and RNA Catalysis, Dundee, Scotland
- June 2002 “Identifying ligands within the *Tetrahymena* ribozyme that bind and position the
catalytic metal ions”
Seventh Annual Meeting of the RNA Society
June 2002, Madison, WI
- October 2001 “Identifying ligands within the *Tetrahymena* ribozyme that bind and position the
catalytic metal ions”
Midwest Enzyme Chemistry Conference, Chicago, IL
- August 2001 “Identifying ligands within the *Tetrahymena* ribozyme that bind and position the
catalytic metal ions”
American Chemical Society National Meeting, Chicago, IL
- October 2000 “The role of individual metal ions within an RNA active site”
Midwest Enzyme Chemistry Conference, Chicago, IL
- May 2000 “The role of individual metal ions within an RNA active site”
Fifth Annual Meeting of the RNA Society, Madison, WI

Presentations by Houglan Research Group Members

(undergraduate presenters underlined, graduate student presenters denoted with #)

Oral presentations

- May 2014 “Investigating the substrate selectivity of ghrelin O-acyltransferase”
J. E. Darling[#], F. Zhao, R. A. Gibbs, and J. L. Houglan
Graduate Student Symposium, SUNY University at Buffalo
- May 2014 “Quantitating protein prenyltransferase activity within a living cell”
S. C. Flynn[#] and J. L. Houglan
Graduate Student Symposium, SUNY University at Buffalo

Posters

- August 2015 “Expression and mutation human proghrelin”
C. L. Cabrinha, E. R. Cleverdon[#], and J. L. Houglan
Research Experience for Undergraduates (REU) poster session
Syracuse University
- August 2015 “Developing a calibrated fluorescence sensor for probing cellular farnesylation”
P. S. Armas, S. A. Gangopadhyay[#], and J. L. Houglan
Research Experience for Undergraduates (REU) poster session
Syracuse University

- June 2015 “Investigating human ghrelin O-acyltransferase: Functional studies and inhibitor screening”
K. R. McGovern[#], A. Schramm, A. Garagozzo, and J. L. Houglan
Northeast Regional Meeting of the American Chemical Society, Ithaca, NY
- June 2015 “Expression and characterization of human proghrelin”
E. R. Cleverdon[#] and J. L. Houglan
Northeast Regional Meeting of the American Chemical Society, Ithaca, NY
- June 2015 “Development of a calibrated sensor for cellular geranylgeranyl transferase-I activity”
S. A. Gangopadhyay[#] and J. L. Houglan
Northeast Regional Meeting of the American Chemical Society, Ithaca, NY
- August 2014 “Development of novel GGTase-I variants with altered substrate specificity through targeted active site reengineering”
S. A. Gangopadhyay[#], E. L. Losito, and J. L. Houglan
248th American Chemical Society National Meeting, San Francisco, CA
- August 2014 “Optimization of chemoenzymatic protein labeling and isolation from eukaryotic cells using enzymes with reengineered selectivity”
B. K. Hampton, M. J. Blanden[#], and J. L. Houglan
Research Experience for Undergraduates (REU) poster session
Syracuse University
- August 2014 “Defining the catalytic machinery of human ghrelin O-acyltransferase”
A. Garagozzo, K. R. McGovern[#], and J. L. Houglan
Research Experience for Undergraduates (REU) poster session
Syracuse University
- May 2014 “Reengineering the substrate selectivity of protein geranylgeranyltransferase type I through targeted active site mutagenesis”
S. A. Gangopadhyay[#], E. L. Losito, and J. L. Houglan
Graduate Student Symposium, SUNY University at Buffalo
- May 2014 “Defining the catalytic machinery of hGOAT”
K. R. McGovern[#], R. J. Loftus[#], and J. L. Houglan
Graduate Student Symposium, SUNY University at Buffalo
- September 2013 “Probing the reactivity threshold for in vivo protein prenylation”
S. C. Flynn[#], S. Zhang, and J. L. Houglan
246th American Chemical Society National Meeting, Indianapolis, IN
- August 2013 “Developing an expression method for human proghrelin”
R. N. D’Amico, J. E. Darling[#], and J. L. Houglan
Research Experience for Undergraduates (REU) poster session
Syracuse University
- July 2013 “Probing the reactivity threshold for in vivo protein prenylation”
S. C. Flynn[#] and J. L. Houglan
FASEB Summer Research Conference on Protein Lipidation, Signaling, and Membrane Domains, Saxtons River, VT
- July 2013 “Investigation of human ghrelin O-acyltransferase (hGOAT) using a novel fluorescent substrate.”
J. E. Darling[#], E. P. Prybolsky, and J. L. Houglan
FASEB Summer Research Conference on Protein Lipidation, Signaling, and Membrane Domains, Saxtons River, VT
- March 2013 “Investigation into the degradation pathway of prenylated proteins”
M. J. Blanden[#] and J. L. Houglan
Syracuse University Life Sciences Symposium

- March 2013 “Investigation and engineering of GGTase-I substrate selectivity”
S. A. Gangopadhyay[#], E. L. Losito, and J. L. Houglan
Syracuse University Life Sciences Symposium
- March 2013 “Investigation of ghrelin acylation by human ghrelin O-acyltransferase.”
J. E. Darling[#], R. J. Loftus[#], E. P. Prybolsky, and J. L. Houglan
Syracuse University Life Sciences Symposium
- October 2012 “Investigation and engineering of GGTase-I substrate selectivity”
S. A. Gangopadhyay[#], E. L. Losito, and J. L. Houglan
Northeast Regional Meeting of the American Chemical Society, Rochester, NY
- October 2012 “Investigation into the degradation pathway of prenylated proteins”
M. J. Blanden[#] and J. L. Houglan
Northeast Regional Meeting of the American Chemical Society, Rochester, NY
- October 2012 Probing the reactivity threshold for in vivo protein prenylation
S.C. Flynn[#], D. E. Lindgren, and J. L. Houglan
Northeast Regional Meeting of the American Chemical Society, Rochester, NY
- October 2012 “Expression and characterization of human ghrelin O-acyltransferase.”
J. E. Darling[#], E. P. Prybolsky, and J. L. Houglan
Northeast Regional Meeting of the American Chemical Society, Rochester, NY
- October 2012 “Locating the active site of human ghrelin O-acyltransferase (hGOAT)”
R. J. Loftus[#], K. D. Siegenthaler, and J. L. Houglan
Northeast Regional Meeting of the American Chemical Society, Rochester, NY
- October 2012 “Development of protein farnesyltransferase variants with altered substrate selectivity”
S. Zhang and J. L. Houglan
Northeast Regional Meeting of the American Chemical Society, Rochester, NY
- August 2012 “Development of a ghrelin O-acyltransferase expression system in E. Coli and analysis of steric limitations at position 2 in ghrelin”
K. D. Siegenthaler and J. L. Houglan
Research Experience for Undergraduates (REU) poster session
Syracuse University
- August 2012 “Selection, functional, and structural characterization of novel farnesyltransferase variants”
S. Zhang and J. L. Houglan
Research Experience for Undergraduates (REU) poster session
Syracuse University
- May 2012 “Chemistry and biology of post-translational protein lipidation”
S. C. Flynn[#] and J. L. Houglan
Syracuse University Life Sciences Symposium
- August 2011 “Substrate recognition by protein geranylgeranyltransferase type I”
E. L. Losito and J. L. Houglan
Research Experience for Undergraduates (REU) poster session
Syracuse University