

Joshua A. Lutz

Curriculum Vitae

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EDUCATION

Postdoctoral Researcher, National Institute on Drug Abuse

Advisor—Dr. Kenner C. Rice

January 2020-Present

Rockville, MD

Doctor of Philosophy, Louisiana State University

2019

Research Advisor—Dr. Carol M. Taylor

Baton Rouge, LA

Bachelor of Science in Chemistry, Louisiana State University in Shreveport

2014 Shreveport, LA

Bachelor of Arts in Psychology, Louisiana State University

2010 Baton Rouge, LA

AWARDS

NIH Intramural Research Training Award

January 2020-Present

Distinguished Dissertation Award LSU, BR; Department of Chemistry

December 2019

Dupont H. Durst Organic Chemistry Award

December 2019

Louisiana State University, Baton Rouge

Board of Regents Graduate Fellowship (BOR-GF)

August 2014-2018

Louisiana State University, Baton Rouge

Baton Rouge, LA

ACS Division of Organic Chemistry, Graduate Research Symposium Attendee

July 26th – 29th, 2018

- Selected to attend this meeting, serving as LSU's representative

Bloomington, IN

University Award for Outstanding Chemistry Student

April 2013

Louisiana State University, Shreveport

Shreveport, LA

- Annual award given to one student from each major, voted on by professors from that major

ACS Division of Analytical Chemistry Undergraduate Award

October 2013

Louisiana State University in Shreveport

Shreveport, LA

- Annual ACS award for an outstanding analytical chemistry student at each ACS accredited university, voted on by analytical chemistry professors

TEACHING EXPERIENCE

Teaching Assistant, General Chemistry Laboratory

August 2014-May 2015

- Taught 1212 General Chemistry Lab at Louisiana State University in Baton Rouge (*BOR-GF fellowship does not permit further teaching*)

Baton Rouge, LA

Tutor, "Organic Boot Camp"

- Taught an organic chemistry refresher course for students entering physical organic chemistry course (Chem4561, Dr. R. Kartika)

2017

Baton Rouge, LA

Research Mentor, Taylor Group, LSU

- Ellen Hymel (Chem2900, Chemistry Major)
- Anna Clare Colson (President's Future Leaders in Research Program)
- Jordan Perry (LS-AMP Program)
- Elora Doskey (Chem 3900, BS Hons Thesis)
- Heidi Nowakowski (Chem 3900, Hons Thesis)

2018-19

2018-19

2017-18

2015-17

2015-17

RESEARCH EXPERIENCE

Postdoctoral Researcher Advisor—Dr. Kenner C. Rice

January 2020-present

National Institute on Drug Abuse

Rockville, MD

- Synthesized compounds potentially useful as opioid alternatives

Graduate Research Assistant, Organic Chemistry Advisor—Dr. Carol M. Taylor

2014-2019

Louisiana State University in Baton Rouge

Baton Rouge, LA

- Synthesized thioenamides inspired by peptide macrocycles

Undergraduate Research Assistant, Synthetic Organic Laboratory

Advisor—Dr. Brian A. Salvatore 2013-2014

Louisiana State University in Shreveport

Shreveport, LA

- Developed procedures for the synthesis of molecules designed to fight cancer through antiangiogenic effects

Undergraduate Research Assistant, Biochemistry Laboratory Advisor—Dr. Elahe Mahdavian

2012- 2013

Louisiana State University in Shreveport

Shreveport, LA

LEADERSHIP & SERVICE

Reviewer for the journal *Psychedic Medicine*

September 2023-Present

Graduate Student Symposium Planning Committee (GSSPC)

December 2017-August 2019

Joshua A. Lutz

Curriculum Vitae

- Led a team of seven LSU graduate students in the organization of a symposium entitled "Artificial Molecular Machines and the Next Generation of Molecular Control" at the 257th National ACS meeting in Orlando, Florida.

Research Lab Tours

- Regularly conduct tours of research lab for incoming undergraduates majoring in the sciences August 2016-December 2019

Super Science Saturday

October 2014-October 2017

- Performed chemistry demonstrations for 600+ children and families annually

President's Day Demonstrations

February 2017

- Performed chemistry demonstrations for 200+ sixth graders visiting LSU at the invitation of President F. King Alexander

Boys and Girls Club

April 2016

- Performed chemistry demonstrations for children enrolled in the Boys and Girls Club of America

PUBLICATIONS AND PRESENTATIONS

Oral

- "Investigation of 9-hydroxyalkyl-5-phenylmorphinan derivatives and the search for the Opioid Holy Grail" March 2023
Molecular Targets and Medications Discovery Branch Presentation, NIH Rockville, MD
- "Investigation of 9-hydroxyalkyl-5-phenylmorphinan derivatives and the search for the Opioid Holy Grail" March 2023
Fellows Research Lunch Presentation, NIH Rockville, MD
- "Synthesis of C9Hydroxyalkyl 5-Phenylmorphinan Derivatives as Potent MOR Agonists" October 2021
Fellows Research Lunch Presentation, NIH Rockville, MD
- "Synthesis of aminovinyl cysteine containing peptide macrocycles" October 2019
Presented research at retirement symposium for Carol Taylor San Diego, CA
- "Thioenamide Synthesis Inspired by Peptide Macrocycles" August 2019
Presented research at the 258th ACS National Meeting San Diego, CA
- "Thioenamide Synthesis Inspired by Peptide Macrocycles" March 2019
Presented research at the 257th ACS National Meeting Orlando, FL

Posters

- "Synthesis of C9Hydroxyalkyl 5-Phenylmorphinan Derivatives as Potent MOR Agonists" June 2022
Presented at the National Organic Symposium San Diego, CA
- "Thioenamide synthesis inspired by peptide macrocycles" June 2018
Presented at the ACS Organic Division Graduate Research Symposium Bloomington, IN
- "Acid-promoted Generation of the Thioenamide Functional Group" November 2016
Presented at the ACS SWRM meeting abstract #126 Galveston, TX

Publications

- Santos, E. J.; Akbarali, H. I.; Bow, E. W.; Chambers, D. R.; Gutman, E. S.; Jacobson, A. E.; Kang, M.; Lee, Y. K.; **Lutz, J. A.**; Rice, K. C.; Sulima, A.; Negus, S. S., "Low-Efficacy Mu Opioid Agonists as Candidate Analgesics: Effects of Novel C-9 Substituted Phenylmorphans on Pain-Depressed Behavior in Mice," *J Pharmacol Exp Ther*, **2024**
- Lutz, J. A.**; Sulima, A.; Gutman, E. S.; Bow, E. W.; Luo, D.; Kaska, S.; Prisinzano, T.; Paronis, C. A.; Bergman, J.; Imler, G. H.; Kerr, A. T.; Jacobson, A. E.; Rice, K. C., "Discovery of a Potent Highly Biased MOR Partial Agonist among Diastereomeric C9-Hydroxyalkyl-5-phenylmorphans," *Molecules* **2023**, 28(12), 4795.
- Santos, E. J.; Nassehi, N.; Bow, E. W.; Chambers, D. R.; Gutman, E. S.; Jacobson, A. E.; **Lutz, J. A.**; Marsh, S. A.; Rice, K. C.; Sulima, A.; Selley, D. E.; Negus, S. S., "Role of Efficacy as a Determinant of Locomotor Activation by Mu-opioid receptor (MOR) ligands in female and male mice. II. Effects of Novel MOR-selective Phenylmorphans with High-to-low MOR Efficacy," *Pharmacol Res Perspect.*, **2023**;11:e01111, 1-13.
- Santos, E. J.; Nassehi, N.; Bow, E. W.; Chambers, D. R.; Gutman, E. S.; Jacobson, A. E.; **Lutz, J. A.**; Rice, K. C.; Sulima, A.; Selley, D. E.; Lee, Y. K.; Negus, S. S., "Efficacy as a Determinant of Mu-opioid Receptor (MOR) Analgesic Effects in a Novel Assay of Pain-depressed Behavior in Mice. II. Effects of Novel Low-efficacy MOR Agonists," *The Journal of Pain*, **2023**, 24 (4, Supplement), 26.
- Lutz, J. A.**; Taylor, C. M., "Synthesis of Aminovinylcysteine-Containing C-Terminal Macrocycle of the Linaridins," *Org. Lett.*, **2020**, 22(5), 1874-1877.
- Kutty, S. K.; **Lutz, J. A.**; Felder, S.; Hahn, P.; Taylor, C. M., "Thioether Macrocycles of the Microbisporicins via Reductive Desulfurization," *Tetrahedron*, **2018**, 74, 4247-4258.
- Lutz, J. A.**; Subasinghe, V.; Kumar, R.; Taylor, C. M., "Influence of Sulfur on Acid-Mediated Enamide Formation," *Org. Lett.*, **2017**, 19, 5146-5149.