

Logan D.C. Bishop

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Research Experience

Graduate Researcher

PI: **Christy Landes**

Statistical analysis of protein-adsorption chromatography and applications of machine learning techniques to column design.

RICE UNIVERSITY

Jun 2016 – present

Arnold and Mabel Beckman Fellow

PI: **Keith Stevenson**

Investigated the solvation properties of Li^+ in fluorinated organic solvents using Raman spectroscopy and DFT calculations.

UNIVERSITY OF TEXAS AT AUSTIN

Jun 2014 – Jun 2015

Undergraduate Researcher

PI: **Keith Stevenson**

Worked with Dr. Anthony Dylla on the synthesis and analysis of sodium titanates as a possible sodium ion battery cathode.

UNIVERSITY OF TEXAS AT AUSTIN

Jun 2013 – Jun 2014

Education

Bachelors of Science in Chemistry

University of Texas at Austin

Core curriculum centered on classical synthetic chemistry but specializations included a formal course on computational modeling of quantum systems as well as advanced numerical methods.

AUSTIN, TEXAS

2011 – 2015

Bachelors of Science in Computer Science

University of Texas at Austin

Mandated curriculum focused on full stack development but specializations included Machine Learning, Stochastic Algorithms, and Cryptography.

Austin, Texas

2011 – 2015

Graduate Student in Chemistry

Rice University

Primary research involves investigating the motion of analyte molecules down a chromatographic column from a statistical perspective. The goal of the project seeks to establish theories grounded in physical chemistry to describe analyte elution with eventual applications to column optimization via machine learning.

HOUSTON, TEXAS

2016 – Present

Fellowships and Honors

Fellowships

NSF GRFP 2018 Fellow

National Science Foundation, 2018

NDSEG 2017 Program Alternate

ASEE, 2017

Atwell-Welch Fellowship

Rice-Chem. Dept., 2016

Arnold and Mabel Beckman Fellow

Arnold and Mabel Beckman Foundation, 2014

Honors

Outstanding Qualifying Exam

Rice-Chem. Dept., 2018

Outstanding Presentation: Electrochemistry

Gulf Coast Undergraduate Research Symposium, 2015

Hackerman Prize for Research

University of Texas, 2014

National Instruments Endowed Scholarship for Excellence

UT-College of Nat. Sci., 2014

Pirrung Scholarship

Texas Exes, 2014

Maggie Dee Stell Endowed Scholarship

UT-College of Nat. Sci., 2014

Robert E. Boyer Scholarship

UT-College of Nat. Sci., 2013

Friends of Chemistry Regents Endowed Scholarship

UT-Chem. Dept., 2013

Undergraduate Research Grant Recipient

University of Texas, 2013

James Patterson Book Award

James Patterson Foundation, 2011

Harrington Foundation Scholarship

Lubbock Area Foundation, 2011

Publications and Presentations

Publications

6. "From a Protein's Perspective: Elution at the Single-Molecule Level"
L.D.C. Bishop, C.F. Landes, *Accounts of Chemical Research*, 2018.
5. "Enhancing Analytical Separations using Super-resolution Microscopy"
N.A. Moringo, H. Shen, L.D.C. Bishop, W. Wang, C.F. Landes, *Annual Review of Physical Chemistry*, 2017.
4. "The structure-energy landscape of NMDA Receptor Gating"
D.M. Dolino, S. Chatterjee, D.M. MacLean, C. Flatebo, L.D.C. Bishop, S.A. Shaikh, C.F. Landes, V. Jayaraman, *Nature Chemical Biology*, 2017.
3. "Single molecule spectroscopy uncovers variable protein transport dynamics on oxidatively functionalized polystyrene films"
N.A. Moringo, H. Shen, L.J. Tauzin, W. Wang, L.D.C. Bishop, Christy F. Landes, *Langmuir*, 2017.
2. "Generalized recovery algorithm for 3D super-resolution microscopy using rotating point spread functions"
B. Shuang, W. Wang, H. Shen, L.J. Tauzin, C. Flatebo, J. Chen, N.A. Moringo, L.D.C. Bishop, K.F. Kelly, C.F. Landes, *Scientific Reports*, 2016.
1. "Effects of Solute—Solvent Hydrogen Bonding on Nonaqueous Electrolyte Structure"
K.W. Schroder, A.G. Dylla, L.D.C. Bishop, E.R. Kamilar, J. Saunders, L.J. Webb, and K.J. Stevenson, *Journal of Physical Chemistry Letters*, 2015.

Presentations

6. "Towards Predictive Chromatography: Monte Carlo and Stochastic Theory for Single-Protein Interactions" *Summer 2018*
Oral Presentation, Rice University - Smalley-Curl Institute Research Colloquium
5. "Towards Predictive Chromatography: Monte Carlo and Stochastic Theory for Single-Protein Interactions" *Summer 2018*
Poster Presentation, GRC-Single Molecule
4. "Theory of Elution in Chromatography" *Summer 2017*
Oral Presentation, Rice University - Smalley-Curl Institute Research Colloquium
Selected for John J. Fannaly Innovative Research Award
3. "Solute-Solvent Hydrogen Bonding in Non-Aqueous Systems" *Fall 2015*
Oral Presentation, Rice University - Gulf Coast Undergraduate Research Symposium
Selected as Best Presentation in Electrochemistry
2. "Probing Solvent interactions through experiment and theory" *Summer 2015*
Poster Presentation, UC Irvine - Arnold and Mabel Beckman Scholar Symposium
1. "Probing Solvent interactions through experiment and theory" *Spring 2015*
Poster Presentation, University of Texas - Undergraduate Research Symposium

Service and Outreach

- Rice University Committee on Research - Graduate Liaison** *Fall 2017 - Spring 2018*
Acted as a Graduate liaison for the Committee on Research who is charged with helping the Faculty Senate communicate issues with current research policies to the administration as well as interace with the Office of Reseach and Vice-Provost of Research.
- Rice University Committee for Teaching - Graduate Liaison** *Fall 2017 - Spring 2018*
Graduate liaison of the University level Committee for Teaching. The specific goal of the committee is to shape the teaching initiatives of the University through recognition of educators, review teaching grants, and advocate the improtance of teaching in tenure proceedings.
- CGSA - Graduate Student Association Representative** *Fall 2017 - Spring 2018*
Represented the Chemistry graduate student body as a voting member of the Rice Graduate Student Assocation (GSA)
- CRLA Certified Master Tutor - Sanger Learning Center** *Fall 2012 - Fall 2015*
Served as a tutor at the Sanger Learning Center of UT Austin specializing in Chemistry, Physics and Computer Science with 2500 hours of individual and group tutoring to date.

Undergraduate Assistant - Sanger Learning Center

Fall 2013 - Fall 2015

Designed and implemented new training regimen for incoming tutors as well as served as an after hours manager for tutorial services at the Sanger Learning Center.

Corporate Relations Officer - Information Systems and Security Society

Fall 2015

Served as a primary contact and coordinator for companies interested in talking to and speaking with members of the Information and Systems Security group of UTCS.

Alumni Coordinator - Phi Sigma Pi

Fall 2013-Spring 2014

Managed contacts with Phi Sigma Pi alumni as well as coordinated events for alumni in the Austin area.

Professional Experience

Database Analyst and Software Dev - Sanger Learning Center

Spring 2016

I constructed a database that would allow the staff members of the Undergraduate studies department to quickly and effectively identify at-risk students in the student body. Within this system, I also helped develop several analytical tools to assess the efficacy of the programs the Center offered.

Professional Affiliation

Phi Sigma Pi Honor Fraternity

Spring 2012 - Present

Phi Beta Kappa Alpha Chapter

Fall 2015 - Present

Texas Exes

Fall 2015 - Present

American Chemical Society

Spring 2016 - Present