Wesley A. Beckner

CONTACT
INFORMATION

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EDUCATION

University of Washington, Seattle, Washington USA

Ph.D. Candidate, Chemical Engineering, May 2019 (expected graduation date)
- Advisor: Jim Pfaendtner

University of Washington, Seattle, Washington USA

M.S., Chemical Engineering, December, 2016

University of Texas, Austin, Texas USA

B.S., Chemical Engineering, May, 2014

University of North Texas, Denton, Texas USA

H.S. Diploma, Texas Academy of Mathematics and Science, May, 2010

The Texas Academy of Mathematics and Science is a unique residential program for high school-aged Texas students who are high achievers and interested in mathematics and science. Students complete a rigorous academic curriculum of college coursework at the University of North Texas. Instruction is by regular university faculty.

HONORS AND
AWARDS

National Science Foundation Research Traineeship (NRT)	since 2016
National Science Foundation Graduate Research Fellowship Honorable Mention	2015
Chemical Engineering Endowment	2014
Achievement Rewards for College Scientists Fellow	since 2014
Friends of Alec Scholar	2014
Undergraduate Research Fellowship	2013
Tracor/Frank W. McBee, Jr. Scholarship	2013

ACADEMIC
EXPERIENCE

University of Washington, Seattle, Washington USA

Graduate Student **September, 2014 - present**

- Includes current Ph.D. research, Ph.D./M.S. level coursework and research/consulting projects

Capstone Mentor **May - July, 2018**

- Mentored in the Data Intensive Research Enabling Clean Technologies (DIRECT) NRT program
- Managed Ph.D./M.S. student team in their capstone project
- Utilized Tensor Flow on the Google Cloud Platform to detect global climate change sentiment
- Created UI and data visualization dashboard using Python/Flask and the Twitter API
- Presented final deliverable with DIRECT students to KPMG lighthouse group

Data Science Accelerator Recipient **September 2017**

- Secured four quarters of NSF funding after competitive research pitch to UW professors

- Delivered open source software and publication involving clean energy research
- Mentored several undergraduate and M.S. students while executing proposal objectives

Visiting Researcher   **June 2016**

- Trained Ph.D./M.S. students to use molecular simulation engines in the lab of Dr. Yi He at Zhejiang University, Hangzhou, China

Study Abroad Teaching Assistant   **June - July, 2016**

- Co-taught unit operations labs for undergraduates from University of Wisconsin and University of Washington at Zhejiang University in Hangzhou, China
- Emphasis on responsibility for heat and mass transfer workshops

Instructor   **July - August, 2015**

- Led programming course for data science incubator for social good at the UW eScience Institute
- Shared responsibility for lectures, workshops, and homework assignments

PUBLICATIONS **W. A. Beckner**, C. Mao, J. Pfaendtner, "Statistical models are able to predict ionic liquid viscosity across a wide range of chemical functionalities and experimental conditions" , *Mol. Syst. Des. Eng.*, 2018. DOI: 10.1039/C7ME00094D

W. A. Beckner, Y. He, J. Pfaendtner, "Chain flexibility in self-assembled monolayers affects protein adsorption and surface hydration, a molecular dynamics study", *J. Phys. Chem. B.*, 2016, 120(40), 10423-10432. DOI: 10.1021/acs.jpcb.6b05882

PAPERS IN PREPARATION **W. A. Beckner**, J. Pfaendtner, "Adaptive Learning and Design with Neural Networks and Molecular Dynamics Discovers Novel Liquid Materials"

K. Sakloth,**W. A. Beckner**, J. Pfaendtner, G. B. Goh, "IL-Net: Using expert knowledge to guide the design of furcated neural networks", arXiv preprint: 1809.05127

L. Schmser, M. Trefz, S. Roeters, **W. A. Beckner**, J. Pfaendtner, S. Woutersen, M. Bonn, D. Schneider, T. Weidner, "Refining the X-ray crystal structure of aquaporin with Sum Frequency Generation spectroscopy"

CONFERENCE PRESENTATIONS & INVITED TALKS **Beckner, W. A.**, Pythonic Package Development. Electrochemical Society Hackweek, Seattle, WA, 2018. link

Beckner, W. A., Alamdari, S., Dawson, N., Climate Sentiment Analysis on Twitter Data. KPMG Lighthouse Group, Seattle, WA, 2018. link

Beckner, W. A., Navigating Solvent Design with Statistical Models. Graduate Student Symposium, Seattle, WA, 2017. link

Beckner, W. A., Application of High Performance Computing and Machine Learning to Accelerate Material Discovery for Energy Capture and Storage. American Institute of Chemical Engineers Conference, San Francisco, CA, 2016

Beckner, W. A., Green Events: Engaging Students in Sustainable Practice Through On-Campus Event Planning. Smart and Sustainable Campus Conference, Baltimore, MA, 2014

Beckner, W. A., Entzminger, K., and Maynard, J. A. Site-Directed Incorporation of Nitrophenylalanine to Study Antibody:Nitro Group Interaction. Rice University Regional Undergraduate Symposium, Houston, TX, 2013

PROFESSIONAL
EXPERIENCE

Campus Environmental Center, Austin, Texas USA

Assistant Director   **August, 2012 - August, 2014**

- Co-founded a university-funded sustainability consultation service
- Provided network of campus resources to organization partners
- Executed and expanded campus sustainability initiatives
- Served as a student liaison between students and administrators
- Planned milestone "green" events including a record-breaking build-a-thon
- Participated in search committee to hire campus zero waste coordinator

SKILLS

- Languages: Python, Bash, JavaScript, HTML, SQL, Matlab, C#
- Technologies: LaTeX, common Windows database, spreadsheet, and presentation software, Google Cloud Platform, Tensor Flow, Tableau, Flask
- Schedulers: Torque, Slurm
- Algorithms: GROMACS molecular dynamics engine
- Operating Systems: Unix/Linux, Windows, iOS.

CERTIFICATIONS

- Data Engineering on Google Cloud Platform Specialization (Coursera)
    Building Resilient Streaming Systems on Google Cloud Platform
    Google Cloud Platform Big Data and Machine Learning Fundamentals
    Leveraging Unstructured Data with Cloud Dataproc on Google Cloud Platform
    Serverless Data Analysis with Google BigQuery and Cloud Dataflow
    Serverless Machine Learning with Tensorflow on Google Cloud Platform
- Data Science Option (University of Washington)