

Jon Strutz

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EDUCATION

Northwestern University Cumulative GPA: **3.77** Expected Graduation: **Dec. 2021**

- Ph.D. Chemical & Biological Engineering
- Advisors: Dr. Keith Tyo & Dr. Linda Broadbelt

Ohio State University Cumulative GPA: **3.82** Graduation: **Dec. 2015**

- B.S. Chemical & Biomolecular Engineering (Minors in Biomedical Engineering and German)

HONORS & AWARDS

ARCS Scholar – 2017 – Achievement Rewards for College Scientists

Biotechnology Training Program Trainee – 2017 – Competitive NIH program (provides 2 years of funding)

Undergraduate Research Award – Summer 2015 – \$1,000 award for undergraduates to pursue research

National Merit Finalist – 2011 Competition – Winners selected based on PSAT and SAT scores

PAST RESEARCH, TEACHING, AND WORK EXPERIENCE

Northwestern University – 2nd year Ph.D. Student *September 2016 – Present*

- Currently developing a kinetic model of *Acinetobacter baylyi* ADP1 metabolism with applications in biosynthesis of small-molecule drugs using lignin (a waste product in biorefineries) as a feedstock
- Collaborating with a scientist at NREL to develop a novel lin-log kinetic modeling framework in which Bayesian methods such as MCMC are used to perform the parameter inference
- Collaboration with Dow Chemical and Lanzatech – I met two milestones by making *in silico* predictions of enzymatic pathways producing undesired side products and alternative pathways to a rate-limiting step
- Mentored students as the Teaching Assistant for a bioseparations course (5.2 / 6.0 student rating)

Wood Laboratory for Applied Protein Engineering – Undergraduate Researcher *May 2014 – July 2016*

- Collaborated with a PhD student to develop a protein-based bacterial biosensor responsive to potential insecticides against *Aedes aegypti*, a mosquito that carries dengue and Zika fever

DuPont, Circleville Site – Manufacturing Technology Engineer Intern *Summer 2013*

- Contributed to the alarm rationalization process by solving logic and entering data for over 7000 alarms

PUBLICATIONS & PRESENTATIONS

Publication to be Submitted – Shakalli Tang, MJ, **Strutz, JR**, Leissa, JA, Wood, DW

“Development of bacterial biosensors to identify potential insecticides against *Aedes aegypti*”

June 26, 2017 – Mini-Symposium on Microbial Lignin Valorization – NREL – Golden, CO

“Modeling Catabolism of Lignin-Derived Aromatics in *Acinetobacter baylyi* ADP1”

SKILLS AND QUALIFICATIONS

- Most programming experience is in Python, but I am also comfortable with C/C++, C#, and MATLAB
- Design and analysis of experiments (familiar with JMP software)
- Constraint-based (Flux Balance Analysis) as well as kinetic modeling (e.g. Ensemble Modeling)
- GPU Computing (CUDA) for use with theano, which is a dependency of the pymc3 python package
- Machine Learning – I just finished an intense (20 hours/week) introductory course (EECS 349 at NU), receiving an A. Topics covered include regression, SVMs, Naïve Bayes, GMMs, neural nets, and boosting.