BOQIANG TU

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EDUCATION

University of Nebraska–Lincoln September 2012–December 2015
College of Agricultural Sciences and Natural Resources
University Honors Program

Bachelor of Science in Biochemistry (with Highest Distinction)
Cumulative GPA: 3.962

Beijing No.22 High School, China September 2006–May 2012

RESEARCH EXPERIENCE

University of Nebraska–Lincoln October 2012–February 2016
Undergraduate Student *Lincoln, NE*

Department of Biochemistry
Advisors: Concetta C. DiRusso and Paul N. Black

· **Project 1:** Transcriptional response of Chlamydomonas reinhardtii to small lipid-inducing molecules — Conceived the project, produced RNA samples, compared different bioinformatic tools and performed statistically sound data analysis

· **Project 2:** High-throughput phenotypic screens for lipid-inducing small molecules in green algae — Performed high-throughput screens using automated liquid handling system and optimized protocols

· **Project 3:** Quantification of lipid metabolism-related gene expression in Chlamydomonas reinhardtii — Adapted and optimized RNA isolation and qPCR methods for algae

· **Project 4:** Exogenous Citrate Induces Lipid Accumulation in Chlamydomonas reinhardtii — Conceived the project, independently designed and carried out experiments on lipid and metabolite quantification

· **Research Techniques:** transcriptomics, functional genomic analysis, data visualization, high-throughput phenotypic screen, qPCR, GC/MS metabolite quantification, NMR structural analysis, automated liquid handling system, gel electrophoresis, protein purification and enzyme assays.

PUBLICATIONS

Wase, N., **Tu, B.**, Rasineni, G. K., Cerny, C., Grove R., Adamec, J., Black, P. N., & DiRusso, C. C. (**2019**). Remodeling of Chlamydomonas metabolism using synthetic inducers results in lipid storage during growth. *Plant Physiology.* pp.00758.2019.

Wase, N., **Tu, B.**, Allen, J. W., Black, P. N., & DiRusso, C. C. (**2017**). Identification and metabolite profiling of chemical activators of lipid accumulation in green algae. *Plant Physiology*, 174(4): 2146-2165.

Wase, N., **Tu, B.**, Black, P. N., & DiRusso, C. C. (**2015**). Phenotypic screening identifies Brefeldin A/Ascotoxin as an inducer of lipid storage in the algae Chlamydomonas reinhardtii. *Algal Research, 11*, 74-84.

Ahowesso, C., Sittiwong, W., Allen, J .W., Wase, N., **Tu, B.**, Adamec J., Dussault, P. H., Black, P. N., & DiRusso, C. C. Cyclobutene- and cyclobutane-functionalized fatty acids are potential pharmaceuticals and novel biochemical probes of structure and function. In preparation.

CONFERENCE PRESENTATIONS

Tu, B., Wase, N., Black, P. N., & DiRusso, C. C. (**2015**). Transcriptomic analysis of Chlamydomonas reinhardtii treated with novel lipid-inducing small molecules. *Nebraska EPSCoR Annual Conference*

Tu, B., Wase, N., Ahowesso, C., Black, P. N., & DiRusso, C. C. (**2014**). Expression of lipid metabolism-related genes in Chlamydomonas reinhardtii. *University of Nebraska Summer Research Symposium*

Tu, B., Wase, N., Black, P. N., & DiRusso, C. C. (**2013**). Exogenous Citrate Induces Lipid Accumulation in Chlamydomonas reinhardtii. *University of Nebraska Summer Research Symposium*

HONORS & AWARDS

Superior Scholar, University of Nebraska–Lincoln   2016
— Top 3% of senior class

Distinguished Honor Graduate, DoD Medical Education and Training Campus   2016
— Highest GPA in a class of approx. 250

Darrell J. Nelson Summer Undergraduate Internship in Energy Sciences Research   2014–2015
— Awarded to 4-5 students annually in Nebraska

Milton E. Mohr Research Scholarship   2014–2015
— Recognizing research potential in biotechnology

Global Laureate Scholarship   2012–2015
— In-state tuition for international students

EXAMS

GRE General Test. Verbal: 170, Quantitative: 168, Analytical: 4.0   2019
Chartered Financial Analyst (CFA) Exam Level I. Passed above 90th percentile   2019

TECHNICAL STRENGTHS

Programming languages	Python, C++, Java, R
Operating systems	Linux, Windows, MacOS
Parallel programming environments	OpenMP, MPI, CUDA
Typesetting and Web content	LaTeX, HTML, CSS
Cloud and cluster computing	AWS, Slurm

MILITARY SERVICE

United States Army   February 2016–February 2020
Healthcare Specialist   *Various locations*

· Perform life-saving treatment in combat/training environment
· Triage and screen patients in primary care settings
· Supervise daily operation of a section of local troop medical clinic
· *Eligible for GI Bill benefits (3 years of tuition payments to school)*

TEACHING EXPERIENCE

United Service Organizations   August 2018–present
Volunteer   *Fort Wainwright, AK*

· Tutor soldiers in introductory chemistry, biology and accounting
· Teach mini-courses in coding and computer literacy

COMMUNITY SERVICE

Undergraduate Research Ambassador, University of Nebraska–Lincoln	August 2014–December 2015
Biochemistry Ambassador, University of Nebraska–Lincoln	August 2014–December 2015
Nebraska Corn and Soy Collegiate Mentoring Program	December 2012–December 2013