

Daniel Fang

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EDUCATION

University of Colorado at Boulder

Doctor of Philosophy in Computer Science

Boulder, CO

Aug. 2022 – Present

University of Utah

Master of Science in Computer Science

Salt Lake City, UT

Aug. 2021 – May 2022

University of Utah

Bachelor of Science in Biomedical Engineering

Salt Lake City, UT

Graduated May 2019

Hillcrest High School

Honors Advanced Diploma and International Baccalaureate Diploma

Midvale, UT

Graduated Jun. 2015

RESEARCH EXPERIENCE

Genetic Logic Lab – Advised by Dr. Chris Myers

PhD Student

Boulder, CO

Aug. 2022 – Present

- Developing software for a genetic data repository for the synthetic biology community with nearly 100,000 parts.
- Integrating a diverse set of 2 databases and 5 programming languages into a robust, scalable web application.
- Leading a lab team of 4 students, implementing agile methodologies, which led to improved efficiency by 33%.
- Mentoring 3 undergraduate students, fostering the growth of their academic skills and professional development.

Dr. Odelberg/Zhu Lab – Eccles Institute of Human Genetics

Lab Technician

Salt Lake City, UT

Sep. 2019 – Jul. 2022

- Executed 900 iterations of laboratory protocols, including PCR, qPCR, Western blotting, and gel electrophoresis.
- Managed a colony of 1000 mice, while utilizing skills in weaning, breeding, and executing humane euthanasia.
- Conducted screening for conditions such as MS and diabetes, employing confocal microscopy on 500 tissue samples.
- Performed intricate mouse dissections, inclusive of injections and deliberate induction of EAE in 400 mice.
- Attained Institutional Animal Care and Use Committee (IACUC) certification in the ethical handling of mice.
- Collaborated on and edited numerous research papers, effectively preparing them for academic journal submission.

Dr. Ambati Lab – Moran Eye Center

Lab Aide

Salt Lake City, UT

Oct. 2015 – Jun. 2019

- Conducted and assessed biochemistry lab protocols, spanning PCR, qPCR, Western blotting, and gel electrophoresis.
- Managed a comprehensive colony of mice, utilizing a skill set of weaning, breeding, and ethical euthanasia.
- Achieved IACUC certification, ensuring the ethical and safe handling and care of both rabbits and mice.
- Performed extensive analysis and screening of ophthalmological diseases in numerous mice using Optical Coherence Tomography (OCT) and Fluorescein Angiography (FA) imagery via the Heidelberg Spectralis instrument.

WORK EXPERIENCE

A Caring Hand Home Health Care

Certified Nursing Assistant

Sandy, UT

Jun. 2017 – Apr. 2019

- Supported 5 residents by aiding with daily life tasks such as showering, eating, and dressing, carried out bi-weekly.
- Recorded daily activities and observed changes, documenting the details in comprehensive weekly progress reports.

Mathnasium – The Math Learning Center

Draper, UT

Math Tutoring Instructor

Oct 2014 – Mar. 2015

- Tutored a diverse group of 80 students in mathematics, focusing on their understanding of key mathematical concepts.
- Mentored a group of 4 students on the Mathnasium curriculum, including 1-on-1 feedback and weekly assessments.
- Structured daily routines and long-term strategies for 80 students to advance their mathematical comprehension.

COMMUNITY SERVICE/LEADERSHIP

Graduate Student Advisory Committee

Salt Lake City, UT

Social Event Coordinator, Member

Aug. 2021 – May 2022

- Planned and orchestrated 15 social events for 250 graduate students in the University of Utah School of Computing.
- Leveraged communication skills in negotiation, including a \$400 reduction in fees and 10% increase in stipend.

Salt Lake City Mission

Salt Lake City, UT

Volunteer

Aug. 2020 – Jul. 2021

- Organized and packaged \$5000 worth of groceries for donation to 400 homeless and underprivileged families.
- Coordinated a dedicated team of 5 volunteers, overseeing the preparation of 300 donation bags every weekday.

Belief Education

Fuzhou, Fujian, China

Volunteer English Teacher

Jul. 2019 – Aug. 2019

- Instructed 20 elementary school Chinese children in the role of an English as a Second Language (ESL) teacher.
- Conveyed English proficiency to students via 6 original lessons, emphasizing nutrition and health-oriented topics.
- Led a field trip to a local farm, combining the setting with topics such as food, animals, and plants to teach English.

Project Youth

Salt Lake City, UT

Team Leader

Dec. 2018 – Apr. 2019

- Conducted monthly educational sessions for 100 sixth-grade students, covering aspects of higher education and goals.
- Led a college visit to the University of Utah for 35 students, providing them with a higher education experience.

University of Utah Hospital, Emergency Room

Salt Lake City, UT

Volunteer/Volunteer Trainer

Aug. 2015 – Nov. 2018

- Assisted healthcare professionals in the ER to deliver care to 200 patients in critical conditions every night.
- Provided comprehensive support to 20 patients a day, meeting their needs and assisting with transportation.
- Guided and trained 9 new volunteers on the intricacies of emergency department operations and procedures.

University of Utah Hospital, Medical ICU

Salt Lake City, UT

Volunteer

Oct. 2017 – Aug. 2018

- Collaborated with nurses and hospital staff to provide essential patient care and support to 25 patients in the ICU.
- Maintained medical supplies, including personal protective equipment (PPE), in patient rooms and hallway areas.

American Chemical Society Student Chapter, University of Utah

Salt Lake City, UT

Volunteer

Aug. 2016 – May 2017

- Orchestrated outreach events in 5 local elementary schools designed to get 500 students interested in chemistry.
- Helped set up 3 events and communicated between members to organize large scale outreach events.
- Organized outreach events in 5 nearby elementary schools, generating interest in chemistry among 500 students.
- Leveraged effective communication among team members to coordinate 3 successful large-scale outreach initiatives.

Promise South Salt Lake

Salt Lake City, UT

Volunteer Tutor

Jan. 2016 – May 2016

- Tutored 50 underprivileged and refugee children in various subjects such as math, English, science, and writing.
- Guided groups of up to 10 students, ensuring homework assignment completion and assisting with credit recovery.
- Organized recreational activities for 50 students, encouraging and fostering a balanced learning environment.

Cottonwood Heights Math Club

Vice President/Instructor

Cottonwood Heights, UT

Jun. 2014 – May 2015

- Instructed 30 middle school students in competitive math strategies, enhancing problem-solving skills for challenges.
- Developed a competitive math curriculum, utilizing a combination of past math competitions and novel material.

PUBLICATIONS

- Xiaohui Zhang, Austin Bohner, Sai Bhuvanagiri, Hironori Uehara, Arun Kumar, Upadhyay, Lyska Emerson, Sailaja Bondalapati, Santosh Kumar Muddana, **Daniel Fang**, Miaoling Li, Zoya Sandhu, Alya Hussain, Lara S Carroll, Michelle Tiem, Bonnie Archer, Uday Kompella, Rajkumar Patil, Balamurali K. Ambati. (2017). Targeted Intracellular Nanoparticle for Neovascular Macular Degeneration: Preclinical Dose Optimization and Toxicology Assessment. *Molecular Therapy*, 25(7), 1606-1615. doi:10.1016/j.ymthe.2017.01.014.
- Malkit Singh, Susie Choi, Petra Soininen, Zoya Sandhu, **Daniel Fang**, Deepti Vashist, Austin Bohner, Xiaohui Zhang, Yuanyuan Wu, Lara Carroll, Yufeng Huang, Hironori Uehara. (2017). Systemic Effects of AAV.COMPAng1 in the Ins2Akita Diabetic Mouse. *Investigative Ophthalmology & Visual Science*, 58(8), 190.
- Lara S. Carroll, Hironori Uehara, **Daniel Fang**, Susie Choi, Xiaohui Zhang, Malkit Singh, Zoya Sandhu, Philip M. Cummins, Tim M. Curtis, Alan W. Stitt, Bonnie J. Archer, Balamurali K. Ambati. (2019). Intravitreal AAV2.COMPAng1 Attenuates Deep Capillary Plexus Expansion in the Aged Diabetic Mouse Retina. *Investigative Ophthalmology & Visual Science*, 60(7), 2494-2502. Doi: 10.1167/iovs.18-26182.
- Tavia Dutson, Md Torikul Islam, Jinjin Cai, Zhonglou Sun, **Daniel Fang**, Anthony J. Donato, Weiquan Zhu, Lisa A. Lesniewski. (2020). Arf6 heterozygosity Results in Impaired Glucose Tolerance Due to Abberant Hepatic Gluconeogenesis. *Federation of American Societies for Experimental Biology (FASEB) Journal*, 34(S1). Doi: 10.1096/fasebj.2020.34.s1.09478.
- Zhonglou Sun, Helong Zhao, **Daniel Fang**, Chadwick T. Davis, Dallas S. Shi, Kachon Lei, Bianca E. Rich, Jacob M. Winter, Li Guo, Lise K. Sorensen, Robert J. Pryor, Nina Zhu, Samuel Lu, Laura L. Dickey, Daniel J. Doty, Zongzhong Tong, Kirk R. Thomas, Alan L. Mueller, Allie H. Grossmann, Baowei Zhang, Thomas E. Lane, Robert S. Fujinami, Shannon J. Odelberg, Weiquan Zhu. (2022). Neuroinflammatory disease disrupts the blood-CNS barrier via crosstalk between proinflammatory and endothelial-to-mesenchymal-transition signaling. *Neuron*, 110(19), 3106-3120.e7. https://doi.org/10.1016/j.neuron.2022.07.015.

PRESENTATIONS

- Myers, C., Fang, D., Buecherl, L., Vitalis, C., Vidal, G., Samineni, S., Yanez-Feliu, G., Mo, W., Rudge, T. (2023, May). *Software for Synthetic Biology Workflows: How to Improve Your Productivity and Impact*. Workshop presentation at the Synthetic Biology: Engineering, Evolution, and Design (SEED) Conference.
- Fang, D., & Zhang M. (2019, April). *Dual Suppression of Growth Factors in the Treatment of Age-related Macular Degeneration*. Poster session presented at the Undergraduate Research Symposium, University of Utah.
- Fang, D. (2019, April). *Dual Suppression of Growth Factors in the Treatment of Age-related Macular Degeneration*. Thesis & poster presentation at the Bioengineering Senior Symposium, University of Utah.

AWARDS/HONORS

- President's Resident Scholarship: Full tuition + housing at the University of Utah for 8 semesters
- Undergraduate Research Opportunity Program (UROP) grant recipient: May 2018 – December 2018
- Undergraduate Research Scholar Designation (URSD) – May 2019

SKILLS AND QUALIFICATIONS

- Computer Programs/Languages: Microsoft Office, HTML, CSS, Java, JavaScript, ReactJS, NodeJS, Python, C, C#, SQL, SPARQL, MATLAB, SBOL
- Wet Lab skills: PCR, Western Blot, Gel Electrophoresis, Confocal Imaging, Heidelberg Spectralis, Seg3D
- Languages: English (Fluent), Spanish (Proficient), Chinese (Proficient)
- Medical skills: Basic Life Support(BLS/ CPR) certification, Certified Nursing Assistant Certification (CNA)(expired)
- Tutoring Subjects: GRE, SAT, ACT, most AP classes, math up to Linear Algebra, Chemistry, English (ESL)