



BENJAMIN ALLEN

BIOLOGIST · EDUCATOR

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<https://orcid.org/0000-0002-6325-859X>

EXPERIENCE

DOE Systems Biology Knowledgebase (KBase)

Oak Ridge National Laboratory

Technical Professional - Outreach Coordinator

2016 - Present

- Lead *Outreach, Communications, and User Development* team to grow and develop system user base
- Developed strategy to grow user base and scientific publications through broadcast and targeted activities
- Grew user base to more than 15,000 accounts with over 7,000 active users from 2018-2020
- Engaged in targeted development to increase use of KBase by Dept. of Energy funded research groups
- Collaborated with KBase staff and external researchers on various systems biology publications
- Organized regular broadcast user development activities via webinars and digital communications
- Assisted development of user metrics database and analytics to inform strategy
- Demonstrated KBase to scientists via webinars, workshops, presentations, and conferencing
- Collaborated with developers to design KBase User Interface and User Experience
- Hired, trained, and managed junior staff working on outreach and communications

Oak Ridge Associated Universities

Post-Master's Research Associate

2014 - 2016

- Created technical documentation for KBase including tutorials, guides, videos, graphics, and handouts
- Published protocol papers demonstrating use of KBase for systems biology research
- Developed outreach materials including newsletters, blog posts, and social media engagement
- Supported KBase users by triaging and resolving issues on the KBase Helpdesk
- Analysed user feedback to inform development, documentation, user engagement, and support activities

UT-ORNL Bredesen Center for Interdisciplinary

Research and Graduate Education

University of Tennessee - Knoxville

Student Services Specialist III

2011 - 2014

- Coordinated curriculum development for Energy Science and Engineering doctoral program
- Advised doctoral students on science and engineering course work and career development
- Recruited doctoral students from university and professional society events
- Engaged in best practices for diversity, equity, and inclusivity in STEM education
- Produced multimedia content to communicate research and education efforts at UTK and ORNL

UTK Department of Biochemistry,

Cellular, & Molecular Biology

Undergraduate Research Assistant for

Dr. Albrecht von Arnim

2010

- Assisted genomics research on subunit H of translational elongation factor 3 in *Arabidopsis thaliana*
- Applied *Agrobacterium*-based transformation methods to induce mutations in *Arabidopsis thaliana* genome
- Cultivated wild-type and transgenic plants to measure and analyse root and shoot growth patterns
- Prepared autotrophic growth media and maintained laboratory supply using safe and sterile techniques

UTK Department of Biochemistry,

Cellular, and Molecular Biology

Undergraduate Research Assistant for

Dr. Darrin Hulsey

2009 - 2010

- Assisted phenotyping research on jaw and vertebrae morphology in fish from taxonomic family *Cichlidae*
- Measured and modelled vertebral movements of fish with image data using MATLAB software
- Cared for laboratory specimens and maintained experimentation equipment
- Recorded, edited, and analysed video of fish from for research and education activities

EDUCATION

University of Tennessee Knoxville

M.S. - Science Education

2012-2014

Thesis: *Ideology and Interdisciplinary Science Graduate Education Reform*

Primary studies in theory and practice of science education with additional course work in microbiology

University of Tennessee Knoxville

B.S. - Biochemistry, Cellular, & Molecular Biology

2006 - 2010

Undergraduate studies in biochemistry, genome science, ecology and evolutionary biology with lab experience in molecular techniques, computational biology, and organic chemistry

University of Strathclyde (Glasgow, Scotland)

2007

Study abroad experience with curriculum focus on molecular biology, immunology, and computer science



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PUBLICATIONS

Allen BH, Gupta N, Edirisinghe JN, Faria JP, Cottingham RW, Henry CS. (Under contract) Application of the metabolic modeling pipeline in KBase to categorize reactions, predict essential genes, and predict pathways in an isolate genome. In A. Navid (Ed.) *Microbial Systems Biology*

Allen, B. H., Land, M. L., & Wood-Charlson, E. M. (2020). Make the Most Out of Genome Announcements with KBase. *DOE Systems Biology Knowledgebase (KBase)*. DOI: 10.25982/1608940

Arkin AP, Cottingham RW, Henry CS, ..., Allen B.H, et al. (2018) KBase: The United States Department of Energy Systems Biology Knowledgebase. *Nature Biotechnology*. DOI: 10.1038/nbt.4163

Edirisinghe J.N., Faria J.P., Harris N.L., Allen B.H., Henry C.S. (2018) Reconstruction and Analysis of Central Metabolism in Microbes. *Metabolic Network Reconstruction and Modeling Methods in Molecular Biology*. DOI: 10.1007/978-1-4939-7528-0_5

Allen, B., & Schmalzer, S. (2018). Science, Power, and Ideology. In A. Botelho, D. Chard, & S. Schmalzer (Eds.), *Science for the People: Documents from America's Movement of Radical Scientists, 1969-1989*. Amherst: University of Massachusetts Press. ISBN: 9781613765531

Allen, B., & Schmalzer, S. (2018). Energy and Environment. In A. Botelho, D. Chard, & S. Schmalzer (Eds.), *Science for the People: Documents from America's Movement of Radical Scientists, 1969-1989*. Amherst: University of Massachusetts Press. ISBN: 9781613765531

Allen B, Drake M, Harris N, Sullivan T. (2017) Using KBase to Assemble and Annotate Prokaryotic Genomes. *Current Protocols in Microbiology*. DOI: 10.1002/cpmc.37

Allen, B. (2017). Exploring the Role of Ideology in Interdisciplinary Science Education Policy. *Educational Studies*. DOI: 10.1080/00131946.2017.1369081

Ellison, S., & Allen, B. (2017). Disruptive innovation, labor markets, & Big Valley STEM School: Network analysis in STEM education. *Cultural Studies of Science Education*. DOI: 10.1007/s11422-016-9786-9

CONFERRING

Workshop

KBase Isolate Analysis Workshop

JGI Genomics of Energy and Environment Meeting (2017-2020)

Poster

KBase: The Systems Biology Knowledgebase for Predictive Biological and Environmental Research in an Integrated Data Platform

DOE Genome Science Program Conference (2019-2020)

Poster

The DOE Systems Biology Knowledgebase (KBase): Progress Toward a System for Collaborative and Reproducible Inference and Modeling of Biological Function
ORISE Summer Graduate, Post Graduate, Employee Participant, and Faculty Poster Session (2016)

Workshop

Genome-scale Metabolic Modeling of Environmental Isolates and Communities using the DOE Systems Biology Knowledgebase (KBase) - standing in for P. Dehal & P. Ranjan American Society of Microbiology (2016)

Poster

The DOE Systems Biology Knowledgebase (KBase): Introduction to a System for Collaborative and Reproducible Inference and Modeling of Biological Function
Plant Animal Genome Conference (2016)