Dalton Kutzen

Curriculum Vitae

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Education

Brigham Young University — B.S. Molecular Biology Jan 2025 - Apr 2028 (Expected)

Provo, Utah

Research & Professional Experience

Bioinformatics Researcher Aug 2026 – Present

Terooatea Lab, Brigham Young University · Provo, UT

- Developed computational methods and benchmark evaluations for high-dimensional single-cell RNA-seq (scRNA-seq) and pooled Perturb-seq screens (`anchor-op`).
- Evaluated whether additive-input models generalize to unseen perturbation targets in pooled Perturb-seq screens.

Research Assistant Sep 2025 – Present

Grose Lab, Brigham Young University · Provo, UT

- Prepared media, cultured bacteriophages with bacterial hosts, and conducted plaque and spot assays to evaluate phage activity and host interactions.
- Performed bioinformatic analyses to annotate and compare phage genomes, creating the **Phantom** Snakemake pipeline for reproducible annotation.
- Integrated wet lab microbiology techniques with computational genomics to investigate phage diversity, host range, and therapeutic applications.

IT Service Desk Supervisor May 2026 – Present

College of Life Sciences, Brigham Young University · Provo, UT

- Mentor student technicians in troubleshooting best practices and train new hires on Life Sciences IT infrastructure, tools, and clear user communication.
- Drove internal automation, documentation, and reporting initiatives that reduced repetitive workflows and standardized support delivery college-wide.

IT Service Desk Technician Aug 2025 – May 2026

College of Life Sciences, Brigham Young University · Provo, UT

- Supported deployment, security, and maintenance of 1,000+ campus workstations and lab computers serving a community of 5,000+ users.

Publications & Preprints

- Fullmer, K. J., **Kutzen, D.**, Terooatea, T. W. (2026). *Additive-input encoding fails operator-level target-held-out prediction on current Perturb-seq screens.* preprint, bioRxiv. [Code].

Presentations & Posters

- Duffy, M. E., **Kutzen, D.**, Grose, J. H. (Apr 2026). *Characterizing Proteus mirabilis Phages for Clinical Applications.* Poster Presentation, American Society for Microbiology, Intermountain Branch Conference, Salt Lake City, UT.

Projects

Phantom — Bacteriophage Analysis Workflow Jun 2026 – Present

- Modular Snakemake pipeline for phage genome annotation and downstream comparative analysis.
- Uses isolated Conda environments and declarative workflow rules to make runs reproducible across systems.

Self-Hosted Systems and Infrastructure Dec 2025 - Present

- Built a Linux-based environment for code hosting, containers, services, and research project organization.
- Applied infrastructure-as-code and documentation practices to reduce configuration drift.

Skills

Computational Biology:	Single-cell transcriptomics, Perturb-seq analysis, comparative genomics, Snakemake, Conda, Biopython
Wet Lab & Molecular Biology:	Phage and bacterial culturing, plaque & spot assays, host range testing, media preparation, agarose gel electrophoresis
Programming & Data:	Python, R, Bash, SQL, Git, pandas, tidyverse, ggplot2, Quarto
IT & Systems Infrastructure:	IT Service Management (ITSM), Linux server administration, Proxmox, Docker, enterprise endpoint management, networking, project management, technical mentoring, documentation

Leadership & Service

Initiative Lead Jan 2026 – Present

Leadership and the Scriptures, Brigham Young University · Provo, UT

- Plan and facilitate structured discussions connecting scriptural principles with practical leadership in academic, community, and professional settings.
- Guide participants in developing actionable leadership habits centered on empathy, honoring agency, and fostering personal and interpersonal accountability.

Counselor and Youth Mentor May 2025 – Aug 2025

FSY Conferences · United States

- Mentored cohorts of 15–25 youth participants, facilitating daily meetings, leadership workshops, and goal-setting activities.
- Motivated participants to establish actionable personal and academic goals, develop effective study habits, and strengthen character traits.
- Reported regularly to conference leadership regarding participant progress, group dynamics, and logistical improvements.

Full-Time Volunteer Mar 2022 – Mar 2024

The Church of Jesus Christ of Latter-day Saints · Wichita, Kansas

- Supervised and trained 200+ volunteers throughout the state of Kansas, enhancing operational productivity and organizational goal execution.
- Provided daily instruction, counseling, and community service to individuals and families to support personal well-being and life skills.

Honors & Awards

- **Experiential Learning Grant**, Department of Micro and Molecular Biology, Brigham Young University Fall 2026
- **William Bartlett Hebard Scholarship**, College of Life Sciences, Brigham Young University Fall 2026
- **Experiential Learning Grant**, Department of Micro and Molecular Biology, Brigham Young University Spring 2026