Timothy (Tim) Barry

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EMPLOYMENT

Harvard University *2024 –*
Postdoctoral researcher, Department of Biostatistics
Advisor: Xihong Lin

University of Pennsylvania *July – December 2023*
Postdoctoral researcher, Department of Statistics
Advisor: Eugene Katsevich

EDUCATION

Carnegie Mellon University (CMU) *2018 – 2023*
PhD in Statistics
Advisors: Kathryn Roeder (CMU), Eugene Katsevich (University of Pennsylvania)

University of Maryland, College Park *2014 – 2018*
BS in Mathematics with high honors
Minor in Computer Science

AWARDS

- Harvard Chan Postdoctoral Association Travel Award *2025*
- Howard Hughes Medical Institute Fellowship *2017*
- Maryland Summer Scholars Research Grant *2016*
- Banneker-Key Scholarship, University of Maryland's highest academic scholarship *2014*

PAPERS

- **T Barry**, Z Niu, E Katsevich, X Lin. "The permuted score test for robust differential expression analysis." Preprint. Link. *2025*
- L Fischer, **T Barry**, A Ramdas. "Multiple testing with anytime-valid Monte-Carlo p-values." Preprint. Link. *2024*
- **T Barry**, K Mason, E Katsevich, K Roeder. "Robust differential expression testing for single-cell CRISPR screens at low multiplicity of infection." *Genome Biology*. Link. (Mihaela Serban Memorial Award, American Statistical Association, Pittsburgh chapter) *2024*
- **T Barry**, K Roeder, E Katsevich. "Exponential family measurement error models for single-cell CRISPR screens." *Biostatistics*. Link. *2024*
- J Morris, C Caragine, Z Daniloski, J Domingo, **T Barry**, L Lu, K Davis, M Ziosi, D Glinos, S Hao, E Mimitou, P Smibert, K Roeder, E Katsevich, T Lappalainen, N Sanjana. "Discovery of target genes and pathways at GWAS loci by pooled single-cell CRISPR screens." *Science*. Link. *2023*
- **T Barry**, X Wang, J Morris, K Roeder, E Katsevich. "SCEPTRE improves calibration and sensitivity in single-cell CRISPR screen analysis." *Genome Biology*. Link. (Reviewers' choice, American Society of Human Genetics conference) *2021*

• **T Barry***, E Gurarie*, F Cheraghi, I Kajola, W Fagan. "Does dispersal make the heart grow bolder? Avoidance of anthropogenic habitat elements across wolf life history." *Animal Behaviour* 166. **Joint first authorship*. Link. *2020*

• **T Barry**. "Collections in R: Review and Proposal." *The R Journal 10.1*. Link. *2018*

BOOK

T Barry, J Deutsch, E Katsevich. "Hands-on single-cell CRISPR screen analysis." e-book. Link *2024*

GRANT ACTIVITY

Under review

Name	Agency	Mechanism	Role	Requested funds	Dates
"Statistical advances in CRISPR profiling and screening"	NIH	K99/R00	PI	$1,015,000	4/01/2026 - 3/30/2031

SOFTWARE PACKAGES

• `sceptre`: statistically rigorous and massively scalable single-cell CRISPR screen analysis. Link.

(First package for single-cell CRISPR screen analysis endorsed by 10x Genomics, main commercial supplier of single-cell experimental kits.)

• `ondisc`: out-of-core and cluster-scale computing on single-cell data. Link.

PROFESSIONAL SERVICE

• *Reviewer*, Annals of Applied Statistics, Biometrika, Frontiers in Genetics, Nature Biotechnology
• *Judge*, NESS student paper competition (2024), ENAR student poster competition (2025)

MENTORING

• Songcheng Dai (Computational Biology Masters student at CMU). Topic: algorithms, data structures, and software for large-scale single-cell data. *2021 - 2022*

Updated June 2025.