



Lily Widdup, PhD

STAFF SCIENTIST

📞 (617) 248-4933 ✉️ lwiddup@choate.com

Dr. Lily Widdup assists Choate's life sciences clients by applying her training in chemical biology, genome editing, and functional genomics to the preparation and prosecution of patent applications, as well as freedom-to-operate and patentability analyses. Her technical strengths include prime editing, base editing mitochondrial and nuclear DNA, and variant-to-function studies relevant to cardiovascular and rare genetic disorders.

Prior to joining Choate, Lily served as a Scientific Consultant for the UNH Franklin Pierce School of Law Tech Transfer Clinic and Patent Engineer for a boutique law firm, where she developed strong expertise in patent prosecution, drafting, and analysis, along with a deep understanding of how scientific innovation translates into intellectual property strategy and regulatory pathways.

At Harvard University and the Broad Institute, where she served as a National Science Foundation Fellow, Lily deepened her scientific leadership by spearheading genome-editing research that generated key data for grant submissions. She collaborated with research groups across the U.S. and mentored scientists at varying career stages through experimental planning, troubleshooting, and scientific writing.

Focus Areas

Intellectual Property

Publications and Presentations

- "The patent landscape of Chagas disease vaccines indicates major underinvestment in an emerging global health threat," first author, *Nature Biotechnology*, August 12, 2025
- "Decoding Vascular Cell Diversity: Single-Cell Approaches to Mechanisms of Vascular Disease," co-author, *Circular Resolution*, July 2025
- "Optimizing prime editing in primary vascular cells to link variant to function for genetic diseases," presenter, Brigham and Women's Hospital Genetics Research in Progress Meeting, April 16, 2025
- "Compact Zinc Finger Base Editors that Edit Mitochondrial or Nuclear DNA In Vitro and In Vivo," co-author, *Nature Communications*, November 23, 2022
- "Using Novel Natural Product Derivatives to Treat Multiple Autophagy-Dependent Cancers," author, *Wellesley College Honors Thesis Repository*, May 22, 2020

Education & Credentials

- Harvard University, PhD (2026) Chemical Biology
- Wellesley College, BA (2020) Chemistry, *magna cum laude*, with departmental honors

