

# Collette Gordon, PhD

STAFF SCIENTIST

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Dr. Collette Gordon assists Choate's life sciences clients by utilizing her background in organic chemistry, polymer science, and materials chemistry to support the preparation and prosecution of patent applications, as well as freedom-to-operate and patentability analyses.

Collette earned her PhD from Massachusetts Institute of Technology, where she conducted research in Professor Timothy Swager's laboratory on functionalized conductive polymers for the detection, capture, and release of per-and polyfluoroalkyl substances (PFAS). As an MIT Dean of Science Fellow, Collette's doctoral work focused on the synthesis of functionalized conductive polymers and developing vapor-phase sensors, lateral flow assays, and accessible fabrication and accessible at-home testing platforms for PFAS detection. Extending to PFAS remediation, Collette developed conductive materials for PFAS capture and release.

During her doctoral studies at MIT, Collette co-wrote experimental supplements for patent applications involving materials for PFAS detection and remediation technologies. She also mentored graduate and undergraduate researchers and educated over 300 students in materials chemistry and environmental engineering. Collette embarked on courses to understand patent law fundamentals at Harvard Law School and MIT Sloan School of Management. Through her Ph.D. journey, Collette developed scientific experience in polymer synthesis and characterization, chemical sensing and capture, and implemented device design coupled with intellectual property knowledge.

Collette earned her Bachelor of Science in chemistry at the University of Southern California. Her undergraduate research focus at Professor Megan Fieser's laboratory was on the design of rare-earth metal catalysts for the ring-opening copolymerization of epoxides and cyclic anhydrides. As a Sustainable Polymers Summer Research Fellow, Collette conducted research in Professor Marc Hillmyer's laboratory, where she investigated the crystallization behavior of aliphatic polyester thermoplastic-elastomeric star polymers.

## Focus Areas

Intellectual Property

IP Counseling

## Publications and Presentations

- "Hydrophobic Polyaniline Homopolymers and Copolymers for the Detection of Perfluorobutanoic Acid and Trifluoroacetic Acid Vapors," first-author, *ACS Applied Polymer Materials*, September 2026
- "Resistivity detection of perfluoroalkyl substances with fluorouspolyaniline in an electrical lateral flow sensor," co-author, *PNAS,* March 2024
- "Choline Halide-Based Deep Eutectic Solvents as Biocompatible Catalysts for the Alternating Copolymerization of Epoxides and Cyclic Anhydrides," co-author, *ACS Sustainable Chemistry &*

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*Engineering,* May 2024

- "Conductive Polymers in Smart Devices for Rapid PFAS Detection, " presenter, *National Organization of Black Chemists and Chemical Engineers National Conference Innovation Tank Talk,* 1st Award, 2025
- "Synthesis and Fabrication of Conductive Polymers for Environmental Sensing," presenter, *National Organization of Black Chemists and Chemical Engineers Collaborative Conference, 1st Award,* 2025*; MIT Chemistry Organic Retreat*, 2025; *American Chemical Society Spring Conference Emerging Leaders Symposium*, 2025; *Organization of Black Chemists and Chemical Engineers Conference*, *1st Award*, 2024; *Chemical Society Spring Conference, 1st Award*, 2024
- "Magnifying Plastics," presenter, *USC Women in Science and Engineering Mini-Conference*, 2020

## Professional & Community Involvement

- Member, National Organization of Black Chemists and Chemical Engineers
- Member, American Chemical Society
- Organizer, American Chemical Society Women's Chemist Committee for Celebrating Women's Careers in Chemistry
- Member, UNCF STEM Scholars Cohort III

## Education & Credentials

- Massachusetts Institute of Technology, PhD (2026) Organic Chemistry and Polymers and Soft Matter
- University of Southern California, BS (2022) Chemistry, *cum laude*