



Rebekah Z. Kitto, PhD

ASSOCIATE

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Dr. Rebekah Kitto assists Choate's life sciences clients in the preparation and prosecution of patent applications, as well as freedom-to-operate and patentability analyses.

Industry Experience

While working on her PhD from UC Berkeley, Rebekah designed and tested nucleic acid sensors to detect small molecule and RNA targets implicated in bacterial virulence through the use of molecular, chemical biological, and computational approaches. Her work investigated mRNA splicing pattern changes in cancer-specific human genes upon treatment with Cas9 methyltransferase fusions, as well as RNA-based gene regulation systems *in planta* under microgravity conditions through collaboration with NASA and the ISU.

While receiving her undergraduate education at Caltech, Rebekah constructed and screened terpene synthase protein libraries to generate mutants capable of selective enzymatic synthesis of biofuel precursor molecules.

Focus Areas

Intellectual Property

IP Counseling

Post Grant

Proceedings

Representative Engagements

- Drafts and prosecutes pharmaceutical and biotechnological scientific patent applications.
- Manages intellectual property portfolios for academic and industrial clients.
- Performs freedom-to-operate and patentability analyses, including expert prior art and patent landscape searching.

Publications and Presentations

- "Synthetic biological circuit tested in spaceflight", co-first author, *Life Sciences in Space Research*, 2020
- "RNA-based fluorescent biosensors for live cell detection of bacterial sRNA," first author, *Biopolymers*, e23394, 2020
- "Engineering and In Vivo Applications of Riboswitches," co-author, *Annual Review of Biochemistry*, 86, 515-539
- "Improved selectivity of an engineered multi-product terpene synthase," co-author, *Organic & Biomolecular Chemistry*, 12, 4013-4020
- "P450-catalyzed asymmetric cyclopropanation of electron-deficient olefins under aerobic conditions," co-author, *Catalysis Science & Technology*, 4, 3640-3643
- "High-throughput screening for terpene-synthase-cyclization activity and directed evolution of a terpene synthase," co-author, *Angewandte Chemie Int. Ed.*, 52, 5571-5574

Education & Credentials

- Boston College Law School, JD (2025)
- University of California at Berkeley, PhD (2019) Chemistry
- California Institute of Technology, BS (2014) Chemistry

Admissions

- Massachusetts
- U.S. Patent & Trademark Office