

Austin S. Draycott

| | | |
|---------------------|---|--|
| Contact Information | Austin Draycott 38 Mechanic St, New Haven, CT 06511 | Phone: 1-347-596-9754 Email: austin.draycott@yale.edu |
| Education | Yale University, New Haven, CT Ph.D. Molecular Biophysics and Biochemistry, Advisor: Professor Wendy V. Gilbert Brown University, Providence, RI B.S Biology, Honors, Advisor: Professor Mark A. Johnson | May 2023 May 2015 |
| Positions | Co-Founder, Cloverleaf Bio Post-doctoral Fellow, Yale University Wendy Gilbert Lab, Department of Molecular Biophysics & Biochemistry Graduate Student, Yale University Wendy Gilbert Lab, Department of Molecular Biophysics & Biochemistry Life Science Research Associate, Stanford University Alice Ting Lab, Department of Genetics Technical Assistant, Massachusetts Institute of Technology Alice Ting Lab, Department of Chemistry Undergraduate Research Associate, Brown University Mark Johnson Lab, Department of Biology | May 2023 – present May 2023 – present September 2017 – May 2023 June 2016 – July 2017 May 2015 – June 2016 June 2012 – May 2015 |
| Publications | A. S. Draycott , C. Schaening-Burgos, M. F. Rojas-Duran, W. V. Gilbert. D-seq: Genome wide detection of dihydrouridines in RNA. <i>Methods in Enzymology</i> . 2023 <i>Academic Press</i> . A. S. Draycott , C. Schaening-Burgos, M. F. Rojas-Duran, L. Wilson, L. Schärffen, K. M. Neugebauer, S. Nachtergaele, W. V. Gilbert. Transcriptome-wide mapping reveals a diverse dihydrouridine landscape including mRNA. <i>PLoS Biology</i> 2022 , <i>20(5)</i> , e3001622. ◦ <i>Primer: S. Dixit and S. R. Jaffrey</i> . Expanding the epitranscriptome: Dihydrouridine in mRNA <i>PLoS Biology</i> 2022 , <i>20(7)</i> , e3001720 A. S. Draycott , M. C. Wang, D. M. Saucedo, L. Escobar-Hoyos, W. V. Gilbert Dihydrouridine synthase 2 sustains levels of tRNACys and prevents ferroptosis in lung cancer. <i>In revision</i> . A. S. Draycott* , L. Schärffen*, I. Vock, M. Simon, K. M. Neugebauer, W. V. Gilbert. Dihydrouridine synthases promote folding and function of diverse classes of RNA. <i>In preparation</i> . *Equal contribution C. J.T. Lewis, A. S. Draycott , C. C. Thoreen, W. V. Gilbert. Maximizing therapeutic protein yield through 5' UTR optimization. <i>In preparation</i> . K. H. Loh, P. S. Stawski, A. S. Draycott , N. D. Udeshi, E. K. Lehrman, D. K. Wilton, T. Svinkina, T. Deerinck, M. H. Ellisman, B. Stevens, S. A. Carr, and A. Y. Ting. Proteomic analysis of unbounded cellular compartments: synaptic clefts. <i>Cell</i> 2016 , <i>166</i> , 1295-1307 | |
| Patents | A. S. Draycott , C. JT. Lewis, W. V. Gilbert. “Programmable RNA-based inhibitors of tRNA modifying enzymes”. Filing # 047162-7443P1 | |
| Presentations | A. S. Draycott , M. C. Wang, D. M. Saucedo, L. Escobar-Hoyos, W. V. Gilbert. Dihydrouridine synthase 2 sustains levels of tRNACys and prevents ferroptosis lung cancer. Selected talk, 2022 Cold Spring Harbor Asia RNA Biology Meeting | |

A. S. Draycott, W.V. Gilbert Lung cancer cells require dihydrouridine synthase 2 to sustain levels of tRNACys and production of cysteine-rich proteins. Selected talk, 2022 Cold Spring Harbor Translational Control Meeting

A. S. Draycott, C. Schaening-Burgos, M. F. Rojas-Duran, L. Wilson, L. Schärffen, K. M. Neugebauer, S. Nachtergaele, W. V. Gilbert. Dihydrouridine modification alters mRNA structure and function. Selected talk, 2022 EMBO RNA Structure Meets Function Workshop

A. S. Draycott, W.V. Gilbert. Lung cancer cells require dihydrouridine synthase 2 to sustain levels of tRNACys and production of cysteine-rich proteins. Selected talk, 2021 Cold Spring Harbor RNA Processing Meeting (Virtual)

A. S. Draycott, W.V. Gilbert. Lung cancer cells require dihydrouridine synthase 2 to sustain levels of tRNACys and production of cysteine-rich proteins. Selected talk, 2021 EMBO Translational Control Meeting (Virtual)

A. S. Draycott, C. Schaening-Burgos, M. F. Rojas-Duran, W.V. Gilbert. Uncovering dihydrouridines transcriptome-wide with single-nucleotide resolution. Selected talk, 2020 Yale RNA Center Modification Workshop (Virtual)

Professional Experience

- Consultant, FL63/Alltrna Inc. **2021-2022**

Fellowships

- Ruth L. Kirschstein Predoctoral Individual National Research Service Award (F31), **2020**
- Gruber Foundation Graduate Research Fellowship, **2017**

Teaching

Yale University

- Guest Lecture, MB&B 743, Advanced Eukaryotic Molecular Biology, Spring **2023**
- Teaching Assistant, BIOL 101, Biochemistry, Spring **2021**
- Teaching Assistant, BIOL 101, Biochemistry, Fall **2019**
- Teaching Assistant, MB&B 460L, Advanced Biochemistry Lab, Spring **2018**

Brown University

- Teaching Assistant, BIOL440, Plant Organism, Fall **2014**
- Teaching Assistant, TAPS260 Stage Lighting, Fall **2013**
- Teaching Assistant, TAPS1280R, Puppet Theater Workshop, Fall **2012**
- Teaching Assistant, TAPS250 Introduction to Technical Theater, Fall **2011**- Spring **2015**

Diversity, Equity, Inclusion & Belonging

Yale University

- Research Mentor, Yale STARS program, Summer **2021**
Graduate mentor for an undergraduate STARS program summer student. STARS “is designed to support women, minority, economically underprivileged, and other historically underrepresented students in the STEM”.

Brown University

- Lead Teaching Assistant, Brown-HHMI Summer Scholars, Summers **2014, 2013**
Mentor for Brown-HHMI Summer research “gateway” program to increase “STEM teaching and research for students from underrepresented groups.”

Mentorship

Yale University

- Undergraduate Thesis Projects (2)
- Summer Undergraduates (3)
- Rotation Students (10)

Stanford University

- Rotation Students (1)

Brown University

- Summer Undergraduates (8)

Distinctions,
Prizes & Fellowships
Mentees

- Vanessa Cheng, Pierson College Richter Summer Fellowship, **2022**
- Mayerling Colin, Yale STARS Summer Research Fellowship, **2021**
- Mitchell Lee, Yale College Dean's Research Fellowship in the Sciences, **2020**