

RENÉE FONSECA, M.S.

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EDUCATION

2020 – Present **PhD & MS Human Genetics**, University of Chicago (UChicago), Chicago, IL
2017 – 2019 **MS Bioinformatics, CGS Biotechnology**, University of South Florida (USF), Tampa, FL
2011 – 2015 **AB Biology**, Rollins College, Winter Park, FL

AWARDS & RECOGNITIONS

2026 **UCLA Emerging Genomic Scientist Fellow**
2025 **ASHG Trainee Research Excellence Award Predoctoral Semifinalist**
2024 **Carl Storm Underrepresented Minority Fellowship, Gordon Research Conference**
2024 – 2026 **ASHG Human Genetics Scholars Initiative Fellowship**
2024 **ASHG Reviewer's Choice Abstract Award**
2023 **UChicago DEI Commendation in Recognition of Meaningful DEI Leadership & Service**
2023 – 2026 **Ford Foundation Predoctoral Fellowship**
2023 – 2027 **NIH F31-Diversity, Ruth L. Kirschstein National Research Service Fellowship** (declined for Ford)
2022 **HHMI-Gilliam Fellowship — University of Chicago Nominee**
2021 – 2023 **NIH Genetics Mechanisms and Evolution Training Grant Program (T32)**
2020 – 2021 **NIH Genetics and Regulation Training Grant Program (T32)**
2019 – 2020 **Fulbright Colombia Symposium Grant**
2019 – 2020 **Fulbright U.S. Student Research Grant**
2019 **USF Golden Bull award** (given to <20 graduates annually based on leadership & academic impact)
2019 **Ford Foundation Predoctoral Fellowship Honorable Mention**
2019 **Second place team, NCBI IRONHACK Biohackathon**
2018 **Sigma Xi Conference Poster Award**
2011 – 2015 **Rotary International STEM Education Grant**
2011 – 2015 **Rollins College Dean's Scholarship** (50% tuition coverage for 4 years, awarded to 4% of applicants)
2011 – 2015 **Florida Academic Scholarship** (100% tuition coverage given 100hrs annual community service)

PUBLICATIONS

1. **Fonseca, R.**, et al. (Preprint). *Locus-specific gene-context interactions improve polygenic prediction*.
<https://doi.org/10.64898/2026.08.26.746823>
2. Costantino, M., **Fonseca, R.**, et al. (Preprint). *Choice of phenotype scale is critical in biobank-based G×E tests*.
<https://doi.org/10.64898/2026.01.20.694695>
3. Biddanda, A., Bandyopadhyay, E., de la Fuente Castro, C., Witonsky, D., Pasupuleti, N., **Fonseca, R.**, et al. (2024). *Distinct positions of genetic and oral histories: Perspectives from India*. HGG Advances.
<https://doi.org/10.1016/j.xhgg.2024.100305>
4. Maharaj, K., Powers, J., Achille, A., Burger, K., **Fonseca, R.**, et al. (2020). *The dual PI3Kδ/CK1ε inhibitor umbralisib has differential & beneficial immunomodulatory effects on CLL T cells*. Blood Advances.
<https://doi.org/10.1182/bloodadvances.2020001800>
5. Rays, J., Xiaoming, L., Cragun, D., Adapa, S., **Fonseca, R.**, et al. (2020). *False Alarms from Direct to Consumer Genetic Testing*. Journal of Personalized Medicine. <https://doi.org/10.3390/jpm10040187>
6. Ferreira, G. C., Oberstaller, J., **Fonseca, R. (co-first)**, et al. (2019). *Iron Hack – A Symposium/Hackathon Focused on Porphyrias, Friedreich's Ataxia, and other Rare Iron Related Diseases*. F1000 Research.
<https://doi.org/10.12688/f1000research.19140.1>
7. Basavanthally, T., **Fonseca, R.**, Uversky, V. (2018). *Using Intrinsic Disorder to Map the Connections between SLITRKs and TSHR*. Proteomics. <http://doi.org/10.1002/pmic.201800307>
8. Maharaj, K., Powers, J., Achille, A., Deng, S., **Fonseca, R.**, et al. (2018). *Silencing of HDAC6 as a therapeutic target in chronic lymphocytic leukemia*. Blood Advances. <http://doi.org/10.1182/bloodadvances.2018020065>
9. Maharaj, K., Powers, J., Deng, S., **Fonseca, R.**, et al. (2016). *Differential regulation of human T-cells by TGR-1202, a novel PI3Kδ inhibitor*. American Association for Cancer Research. <https://doi.org/10.1158/1538-7445.AM2016-545>
10. Sahakian, E., Maharaj, K., Powers, J., **Fonseca, R.**, et al. (2016). *Regulation of chronic lymphocytic leukemia (CLL) immunobiology by histone deacetylase 6 (HDAC6)*. American Association for Cancer Research.
<https://doi.org/10.1158/1538-7445.AM2016-4485>

11. Segarra, V. A., DeLucia, A. A., Delucia, A. A., **Fonseca, R. (co-second)**, et al. (2015). *Self-driven service learning: Community-student-faculty collaboratives outside of the classroom*. Journal of Microbiology and Biology Education. <http://doi.org/10.1128/jmbe.v16i2.940>

PRESENTATIONS

1. Locus-specific gene-context interactions improve polygenic prediction. UCLA Emerging Genomic Scientist Symposium. April 2026.
2. Locus-specific gene-context interactions improve polygenic prediction. Midwest Population Genetics Annual Meeting. August 2026.
3. Incorporating context-specific effects improves polygenic scores. American Society of Human Genetics Annual Meeting. Oct 2025.
4. Incorporating context-specific effects improves polygenic score (PGS) prediction. Gordon Research Conference on Quantitative Genetics and Genomics. Feb 2025.
5. A method to build context-specific polygenic scores. Institute of Biological Psychiatry Psychiatric Genetics Retreat in Copenhagen, Denmark. Sept 2023.
6. A novel method to improve capture of causal genetics & center equity in genetic predictions. University of Chicago GME Training Grant Retreat. March 2023.
7. PGS(C): A method to improve capture of causal genetics & cross-population portability. Helmholtz Pioneer Campus Statistical Genetics Symposium in Munich, Germany. Sept 2022.
8. Intrinsic Disorder to Map the Connections between SLITRKs and TSHR. Flash Talk presented at the Institute of Physics in London, UK. Jan 2019.

CONFERENCE POSTERS

1. **Fonseca, R.**, et al. (Aug 2026). *Locus-specific gene-context interactions improve polygenic prediction*. Poster presented at the Midwest Population Genetics Annual Meeting
2. **Fonseca, R.**, Dahl, A. (Nov 2024). *A novel method to build context-specific polygenic scores improves prediction in complex human traits*. Poster presented at the American Society of Human Genetics Annual Meeting
3. **Fonseca, R.**, Dahl, A. (June 2024). *A novel method to build context-specific polygenic scores improves prediction in complex human traits*. Poster presented at the Ford Foundation-National Academy of Sciences Annual Fellows Meeting
4. **Fonseca, R.**, Dahl, A. (May 2023). *A novel method to improve capture of causal genetics & center equity in genetic predictions*. Poster presented at the University of Chicago Mitchell Conference on Human Genetics
5. **Fonseca, R.** (June 2019). *IRON HACK: A Symposium/Hackathon Focused on Porphyria, Friedreich's Ataxia, and other Iron-Related Rare Diseases*. Poster presented at the University of South Florida Genomics of Global and Planetary Health Annual Symposium
6. **Fonseca, R.** (Oct 2018). *Using Intrinsic Disorder to Map the Connections between SLITRKs and TSHR*. Poster presented and awarded at the Sigma Xi Annual Meeting and Research Conference, and nominated for an award at the SACNAS National Diversity in STEM Research Conference

RESEARCH EXPERIENCE

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| 2021 – Present | <p>PhD Candidate, University of Chicago, Department of Human Genetics, Chicago, IL</p> <ul style="list-style-type: none"> • Joined the lab of Dr. Andy Dahl to develop PGSC, a novel method to improve polygenic score prediction using context-specific genetic effects • Applied PGSC across 50 clinically relevant UK Biobank traits to construct predictions for over 65 thousand individuals, which outperformed state of the art prediction methods • Worked under Dr. Maanasa Raghavan to perform a disease risk analysis for an underserved community originating from southwest India, resulting in publication |
| 2019 – 2020 | <p>Research Fellow, Universidad del Valle, Department of Biological Sciences, Cali, Colombia</p> <ul style="list-style-type: none"> • Determined pathogenic molecular variants linked to the development of glaucoma and glaucoma treatment response in an Afro-Colombian population. |
| 2019 – 2020 | <p>Research Fellow, Universidad Tecnológica del Chocó, Quibdó, Colombia</p> <ul style="list-style-type: none"> • Organized and coordinated public health education sessions, and a seminar series focused on sharing advances in genomic medicine with the community |

2019	Research Assistant, University of South Florida, Department of Public Health, Tampa, FL Worked under Dr. Rays Jiang to organize IRONHACK a NCBI/NIH Biohackathon focused on leveraging RNAseq data to improve our understanding of rare, iron-related blood disorders
2018 – 2019	Research Assistant, University of South Florida, Morsani College of Medicine, Tampa, FL Worked under Dr. Vladimir Uversky analyzing intrinsic disorder, mutations, and binding sites within Thyroid Stimulating Hormone Receptors and members of the SLITRK protein family
2018	Research Assistant, University of Toronto, Institute for Global Health Equity, Toronto, ON Worked under Dr. Alejandro Jadad designing data analysis pipelines to identify key contributors to self-reported health within the Canadian Community Health Survey Biobank
2017	Research Assistant, University of South Florida, Morsani College of Medicine, Tampa, FL Worked under Dr. Alexei Evsikov searching for non-long terminal repeat (non-LTR) retrotransposons, including long and short interspersed elements within the genome of <i>Mnemiopsis leidyi</i>, the sea walnut jellyfish
2015 – 2016	Laboratory Assistant, H. Lee Moffitt Cancer Center & Research Institute, Tampa, FL Worked under Dr. Javier Pinilla-Ibarz studying the effects of PI3K delta inhibition on normal T cell function, and selective inhibition of HDAC6 and B cell receptors in CLL
2014– 2015	Research Assistant & Event Organizer, Rollins College, Winter Park & Orlando, FL Worked with Dr. Veronica Segarra to arrange a “Cell Day” outreach event at the Orlando Science Center, and compiled materials for publication in the Journal of Microbiology and Biology Education

LEADERSHIP & SERVICE

2025 – 2026	Volunteer – University of Chicago Computational Biology Outreach (COMBO) Program
2025 – 2026	Volunteer – University of Chicago South Side Science Festival & DNA Days
2024	Invited Panelist – <i>Is Collective Bargaining the Answer? New Approaches to Adjudication of Sexual Harassment Complaints in Recent Graduate Student Labor Agreements</i> . National Academies of Sciences, Engineering, and Medicine, Action Collaborative on Preventing Sexual Harassment in Higher Education.
2023	Invited Panelist – <i>Young Workers in the Academic Labor Movement</i> . California Nurses Association/National Nurses Organizing Committee (CNA/NNOC) Triennial Convention, San Francisco, CA.
2023	Secured over 2K in small grant funding to begin a Biological Sciences Division coat-closet loaner program, providing free winter gear to visiting students
2022 – 2024	Elected Graduate Student Representative – Wrote and negotiated a precedent-setting employment contract representing over 3,000 graduate researchers and teachers
2022	UChicago Human Genetics PhD Informational Panel for URM Students Organizer and Speaker
2022	University of Chicago South Side Science Festival Panel Organizer
2021 – 2022	Human Genetics Diversity Equity & Inclusion Committee Student Representative
2021	Invited Speaker – <i>From Professors to Participants: Improving diversity across science</i> . Color of Science, Annual Celebration of Science.
2020	Women of Color Project STEM Workshop Mentor
2019 – 2020	Big Data and Public Health Fulbright Symposium Organizer
2019	Invited Speaker – <i>Biohackathons: Conectando Omics y la Comunidad</i> . Universidad del Valle, Cali, Colombia.
2019	Invited Speaker – <i>Bioinformatics, Hackathons & Genetics</i> . Podcast interview with 2 Scientists.
2019	Invited Speaker – <i>From Professors to Participants: Improving diversity across science</i> . Taste of Science Tampa Bay.
2018 – 2019	Student Organizer – Evolutionary Systems Biology Group
2018 – 2019	Genomics Liaison – University of South Florida Computer Science Club
2018 – 2019	Student Representative – Association of Medical Science Graduate Students
2018	USF Morsani College of Medicine Graduate Student Information Panel Organizer and Speaker

2015 Invited Speaker – *Treatment of Chronic Lymphocytic Leukemia: An Immunological Perspective*. Rollins College
Science Literacy Week Research Symposium

PROFESSIONAL & TEACHING EXPERIENCE

2026 Biomedical start up landscape data analysis intern, Chicago Biomedical Consortium
2025 Scientific federal grant writing intern, IntelliSpark
2022 Intro to statistical genetics, University of Chicago Teaching Assistant (graduate course)
2022 Intro to complex trait genetics, University of Chicago Teaching Assistant (undergraduate course)
2021 Genetics and evolution, University of Chicago Teaching Assistant (undergraduate course)
2019 – 2020 Freelance copy editor and translator specializing in science writing (Spanish to English)
2019 Universidad del Valle Department of Omic Sciences Invited Lecturer
2019 Universidad de los Andes Evolutionary Genomics Training Workshop Invited Lecturer

WORKSHOPS & CERTIFICATES

2025 University of Chicago “Project Management Essentials for STEM PhDs” workshop
2025 University of Chicago “The Business of Running a Research Group” workshop
2024 University of Chicago “How to Prepare an Effective Talk” workshop
2023 University of Chicago “How to Run a Lab: Financial Skills for Scientists” workshop
2023 Cornell Future Professors Institute
2022 University of Chicago Science communication workshop
2022 Drexel University Biological data science summer workshop
2022 University of Chicago Effective writing in the biological sciences workshop
2020 Harvard University EdX CS50’s Introduction to Computer Science
2020 Dataquest Data Engineering with Python
2020 Data Camp Data Science with R
2020 Duke University EdX Data Science Math Skills
2019 Data Camp Data Science with Python
2019 Harvard University EdX Data Science with R
2018 University of Pennsylvania EdX Computational Thinking for Problem Solving
2018 Alan Alda Center for Communicating Science Workshop
2018 Rice University EdX Spanish for Healthcare Settings