

# RENÉE FONSECA, M.S.

reneefonseca@uchicago.edu • linktr.ee/fonsecarenee • @reneefonseca

## EDUCATION

|                       |   |
|-----------------------|---|
| <b>2020 – Present</b> | <b>Doctor of Philosophy in Human Genetics</b><br>University of Chicago, Biological Sciences Division, Chicago, IL                           |
| <b>2017 – 2019</b>    | <b>Master of Science in Bioinformatics and Computational Biology</b><br>University of South Florida, Morsani College of Medicine, Tampa, FL |
| <b>2017 – 2018</b>    | <b>Graduate Certificate in Biotechnology</b><br>University of South Florida, Morsani College of Medicine, Tampa, FL                         |
| <b>2016</b>           | <b>Emergency Medical Technician Vocational Certification</b><br>College of Central Florida, Ocala, FL                                       |
| <b>2011 – 2015</b>    | <b>Artium Baccalaureus in Biology</b><br>Rollins College, Winter Park, FL   |

## AWARDS & RECOGNITIONS

|                    |   |
|--------------------|---|
| <b>2021 – 2023</b> | <b>NIH Genetics Mechanisms and Evolution Training Grant Program (\$114,020)</b><br>NIH Ruth L. Kirschstein T32 grant (GM139782)   |
| <b>2020 – 2021</b> | <b>NIH Genetics and Regulation Training Grant Program (\$114,020)</b><br>NIH Ruth L. Kirschstein T32 grant (GM07197)  |
| <b>2019 – 2020</b> | <b>Fulbright U.S. Student Research Award (\$7,000)</b><br>Highly competitive research award (awarded to ~19% of applicants) based on project proposal, personal statement, in-country affiliations, letters of recommendation, and CV |
| <b>2019 – 2020</b> | <b>Fulbright Colombia Cátedra Award (\$5,000)</b><br>Competitive science communication award based on project proposal  |
| <b>2019</b>        | <b>USF Golden Bull award</b><br>Highly competitive merit (awarded to ~10% of applicants) based on academic success, community involvement, campus leadership, and CV  |
| <b>2019</b>        | <b>Ford Foundation Fellowship Honorable Mention</b><br>Highly competitive predoctoral fellowship based on project proposal, personal statement, letters of recommendation, and CV   |
| <b>2019</b>        | <b>Second place team, NCBI IRONHACK Biohackathon</b><br>Competitive award based on creation of UPWARD – a website and database built in ~2 days to amass knowledge of porphyria phenotypes and associated alleles                     |
| <b>2019</b>        | <b>USF International Travel Grant recipient (\$1,000)</b><br>Competitive travel award to present research in London based on abstract and application   |



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|      |  |
|------|--|
| 2019 | <b>AAAS/Science Program for Excellence in Science</b><br>Nominated as an outstanding Life Sciences Graduate Student to receive full AAAS member benefits   |
| 2018 | <b>USF Research Travel Grant recipient (\$500)</b><br>Competitive travel award to present research in California based on abstract and application   |
| 2018 | <b>Fulbright Research Award USF Nominee</b><br>Chosen to represent the University of South Florida as an applicant for a Fulbright Research Award based on project proposal, personal statement, interview, and CV |
| 2018 | <b>Sigma Xi Conference presentation awardee (\$500)</b><br>Competitive award for top graduate-level presenters based on poster presentation  |
| 2018 | <b>USF Research Travel Grant recipient (\$500)</b><br>Competitive travel award to present research in Texas based on abstract and application  |
| 2018 | <b>Golden Key International Honor Society initiate</b><br>Nominated for membership (awarded to top 15% of student body) based on GPA   |
| 2018 | <b>Synapse Innovation Summit Grant recipient (\$100)</b><br>Award to attend the Synapse Innovation Summit in Tampa based on application  |
| 2017 | <b>USF Research Travel Grant recipient (\$500)</b><br>Competitive travel award to present research in Georgia based on abstract and application  |
| 2016 | <b>Sigma Xi National Research Honors Society initiate</b><br>Nominated for membership based on strength of research experience, presentations, and publications  |
| 2011 | <b>Rotary International STEM Education Grant (\$1,000)</b><br>Scholarship awarded based on personal statement, GPA and CV  |
| 2011 | <b>Rollins College Dean's Scholarship recipient (\$30,000)</b><br>Highly competitive award (awarded to ~4% of applicants) based on personal statement, GPA, and CV   |
| 2011 | <b>Florida Academic Scholars Award recipient (\$10,000)</b><br>Competitive award based on GPA, CV, and volunteer service   |

## PUBLICATIONS

1. Biddanda, A., Bandyopadhyay, E., de la Fuente Castro, C., Witonsky, D., Pasupuleti, N., **Fonseca, R.**, et al. (2022). *Integrating genetic and oral histories of Southwest Indian populations*. In submission.
2. Maharaj, K., Powers, J., Achille, A., Burger, K., **Fonseca, R.**, et al. (2020). *The dual PI3K $\delta$ /CK1 $\epsilon$  inhibitor umbralisib has differential & beneficial immunomodulatory effects on CLL T cells*. Blood Advances. <https://doi.org/10.1182/bloodadvances.2020001800>
3. 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>
4. Posso, D., **Fonseca, R.** (2019). "Bio-Hackaton": Un evento multidisciplinario para el desarrollo de proyectos útiles a la comunidad. UniValle Boletín Postgrado De Biología.
5. **Fonseca, R.**, Mayor, A. (2019). *Genomics Program Hosts First Ever Iron Hack*. USF College of Public Health News. <https://hscweb3.hsc.usf.edu/health/publichealth/news/genomics-program-hosts-first-ever-iron-hack/>

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6. Ferreira, G. C., Oberstaller, J., **Fonseca, R. (co-first author)**, et al. (2019). *Iron Hack – A Symposium/Hackathon Focused on Porphyrins, 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., Achille, A., Pabon-Saldana, M., **Fonseca, R.**, et al. (2017). *Differential regulation of T Cells by PI3K delta inhibitors in a CLL murine model*. Blood. [http://www.bloodjournal.org/content/130/Suppl\\_1/3009](http://www.bloodjournal.org/content/130/Suppl_1/3009)
10. Maharaj, K., Powers, J., **Fonseca, R.**, et al. (2016). *Combinatorial effect of HDAC6i and Ibrutinib therapy in CLL murine model*. Blood. <http://www.bloodjournal.org/content/128/22/2035>
11. 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>
12. Maharaj, K., Powers, J., Pabon-Saldana, M., **Fonseca, R.**, et al. (2016). *Modulation of T cell compartment in a preclinical CLL murine model by a selective PI3K delta inhibitor*. TGR-1202. Blood. <http://www.bloodjournal.org/content/128/22/3236?sso-checked=true>
13. 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>
14. Segarra, V. A., DeLucia, A. A., Delucia, A. A., **Fonseca, R. (co-second author)**, 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>

## INVITED PRESENTATIONS

1. **Fonseca, R.** (June 2021). 40 minute talk presented virtually at the Color of Science Celebration of Science
2. **Fonseca, R.** (Sept 2019). *Biohackathons: Conectando Omics y la Comunidad*. 40 minute talk presented at the Universidad del Valle, Facultad de Ciencias Naturales y Exactas
3. **Fonseca, R.** (July 2019). *Bioinformatics, Hackathons & Genetics*. Podcast interview with 2 Scientists
4. **Fonseca, R.** (Apr 2019). *From Professors to Participants: Improving diversity in science*. 20 minute talk presented at Taste of Science Tampa Bay
5. **Fonseca, R.** (Jan 2019). *Equitable Representation in Science*. Podcast interview with SciCurious
6. **Fonseca, R.** (Jan 2019). *Using Intrinsic Disorder to Map the Connections between SLITRKs and TSHR*. 1 minute Flash Talk presented at the Institute of Physics, London, UK
7. **Fonseca, R.** (Sept 2015). *Treatment of Chronic Lymphocytic Leukemia: An Immunological Perspective*. 20 minute talk presented at the Rollins College Science Literacy Week Research Symposium

## CONFERENCE POSTERS

1. Pang, J., Liu, X., Cragun, D., Adapa, S., **Fonseca, R.**, et al. (Nov 2019). *False Alarms in Consumer Genomics Add to Public Fear and Potential Health Care Burden*. Poster presented at USF Health’s annual Research Day



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2. **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 USF Genomics of Global and Planetary Health Annual Symposium
3. **Fonseca, R.** (Jan 2019). *Using Intrinsic Disorder to Map the Connections between SLITRKs and TSHR*. Poster presented at the Institute of Physics, London, UK
4. **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
5. Maharaj, K., Powers, J., Achille, A., Pabon-Saldana, M., Deng, S., **Fonseca, R.**, et al. (May 2017). *TGR-1202 A novel PI3K delta inhibitor that differentially regulates T cells in CLL*. Poster presented at the International Workshop on Chronic Lymphocytic Leukemia
6. Pinilla-Ibarz, J., Powers, J., Maharaj, K., Achille, A., **Fonseca, R.**, et al. (May 2017). *Immunotherapeutic approaches using selective HDAC6 inhibitors alone or in combination with BCR inhibitors*. Poster presented at the International Workshop on Chronic Lymphocytic Leukemia

## RESEARCH EXPERIENCE

### 2021 – Present

#### PhD Student

University of Chicago, Biological Sciences Division: Human Genetics, Chicago, IL

- Joined the lab of Dr. Andy Dahl to build and apply a context-specific polygenic score method to simulated, and real-GWAS-data, and improve score portability
- Worked under Dr. John Novembre to investigate if and how marginal epistasis contributes to population-differentiated genetic effects
- Worked under Dr. Maanasa Raghavan to perform a disease risk analysis for an underserved community originating from southwest India

### 2019 – 2020

#### Research Fellow

Universidad del Valle, Cali, Colombia

- Identified biomarkers associated with breast and prostate cancers in an under-represented Afro-Colombian population along the Pacific Coast
- Supported the creation of a new omics/bioinformatics laboratory and core by developing website content, training students, and moving and setting up computing equipment

### 2019 – 2020

#### Research Assistant

Centro de Investigación e Innovación en Bioinformática y Fotónica (CIBioFi), Cali, Colombia

- Determined pathogenic molecular variants linked to the development of glaucoma and glaucoma treatment response in an Afro-Colombian population
- Served as an intermediary between research team in Cali and collaborators and investors in the USA

### 2019 – 2020

#### Research Fellow

Universidad Tecnológica del Chocó, Quibdó, Colombia

- Supported public health education outreach in Quibdó focused on genetics, cancer, and health within the community
- Organized and coordinated an on-campus community outreach day focused on sharing advances in genomic medicine with the public

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- 2019**
- Research Assistant**
- University of South Florida, Department of Public Health, Tampa, FL
- Worked under Dr. Rays Jiang studying malaria and liver gene expression and variation in diverse populations
  - Coordinated and participated in IRONHACK a USF/NCBI/NIH Biohackathon focused on using phenotype genotype mapping, SNP variants and large scale RNAseq integration to improve rare, iron-related disease diagnosis
- 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
  - Utilize proteomics tools and databases including D<sup>2</sup>P<sup>2</sup>, PONDR tools, IUPred, ANCHOR, STRING, and multiple sequence alignment to perform SNP and disorder analysis
- 2018**
- Research Assistant**
- University of Toronto, Institute for Global Health Equity & Innovation, Toronto, ON
- Worked under Dr. Alejandro Jadad using R to clean, analyze, and visualize large-scale public health databases including the Canadian Community Health Survey to study determinants of health
  - Contributed to a meta-analysis of reviews linked to self-reported health around the world
- 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 *Mnemiopsis leidyi*, the sea walnut jellyfish
  - Utilized Galaxy HISAT2 alignments, Next-gen/RNA sequencing/analysis, featureCounts, Repbase repeat masking searches, and other bioinformatics techniques to annotate the *M. leidyi* genome
- 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
  - Performed B and T cell isolation, Murine and human cancer cell isolation, culture, and cryopreservation, as well as Murine tissue/tumor processing
- 2014 – 2015**
- Research Assistant & Event Organizer**
- Rollins College & Orlando Science Center, Winter Park & Orlando, FL
- Worked with Dr. Veronica Segarra to arrange a “Cell Day” event at the Orlando Science Center complete with experiments and presentations on DNA, bacteria, cellular structures, and viruses
  - Compiled material lists, experimental protocols, and post-event student questionnaires for future Cell Days at the Orlando Science Center, and for publication in the Journal of Microbiology and Biology Education

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## PROFESSIONAL & TEACHING EXPERIENCE

|             |  |
|-------------|--|
| 2022        | <b>Teaching Assistant (Quantitative genetics, graduate course)</b><br><b>Teaching Assistant (Genetics, undergraduate course)</b><br>University of Chicago, Chicago, IL |
| 2021        | <b>Teaching Assistant (Genetics and evolution, undergraduate course)</b><br>University of Chicago, Chicago, IL   |
| 2020        | <b>Freelance Copy Editor and Translator (English to Spanish)</b><br>Drywell Group, LLC, Inverness, FL  |
| 2019 – 2020 | <b>Fulbright Research Scholar</b><br>National Screening Committee (NSC), US Institute of International Education (IIE), DC   |
| 2019 – 2020 | <b>Big Data and Public Health Symposium Organizer</b><br>Fulbright Colombia, Bogota, Colombia  |
| 2019 – 2020 | <b>Manuscript translator (Spanish to English)</b><br>Department of Natural and Exact Sciences, Universidad del Valle, Cali, Colombia                                   |
| 2019        | <b>Omic Sciences Intensive Course Invited Lecturer</b><br>Department of Natural and Exact Sciences, Universidad de Valle, Cali, Colombia                               |
| 2019        | <b>Evolutionary Genomics Training Workshop Invited Lecturer</b><br>Department of Biological Sciences, Universidad de los Andes, Cartagena, Colombia                    |
| 2019        | <b>Computational Genomics Summer Institute</b><br>University of California, Los Angeles, CA  |
| 2018        | <b>Alan Alda Center for Communicating Science Workshop</b><br>University of South Florida, Tampa, FL   |
| 2018        | <b>Morsani College of Medicine Graduate Student Panel Organizer and Participant</b><br>University of South Florida, Tampa, FL  |
| 2016        | <b>Assistant Emergency Medical Technician</b><br>Marion County EMS, Munroe Regional Medical Center, Ocala Regional Medical Center, Ocala, FL                           |
| 2015        | <b>Clinical Internship</b><br>H. Lee Moffitt Cancer Center & Research Institute, Tampa, FL   |
| 2014 – 2015 | <b>Laboratory Internship</b><br>Florida Cancer Specialists, Lecanto, FL  |
| 2013 – 2014 | <b>Resident Assistant</b><br>Rollins College Office of Residential Life, Winter Park, FL   |
| 2012 – 2014 | <b>Information Technology Student Technician</b><br>Rollins College IT Help Desk, Winter Park, FL  |
| 2008 – 2018 | <b>Office Manager</b><br>Drywell Group, LLC., Inverness, FL  |

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## CERTIFICATES

|             |   |
|-------------|---|
| 2020        | <b>CS50's Introduction to Computer Science</b><br>MOOC, EdX, Harvard University, Cambridge, MA  |
| 2020        | <b>Data Engineering with Python</b> <ul style="list-style-type: none"><li>- Python for Data Science: Fundamentals</li></ul> MOOC, Dataquest, San Francisco  |
| 2020        | <b>Data Science with R</b> <ul style="list-style-type: none"><li>- Introduction to R</li><li>- Intermediate R</li><li>- Intro to Data Viz w/ggplot2</li><li>- Data Science R Basics</li><li>- Introduction to the Tidyverse</li><li>- Data Manipulation w/dplyr</li></ul> MOOC, DataCamp, NYC |
| 2020        | <b>Data Science Math Skills</b><br>MOOC, Coursera, Duke University, Durham, NC  |
| 2019        | <b>Data Science with Python</b> <ul style="list-style-type: none"><li>- Introduction to Python</li><li>- Introduction to Shell for Data Science</li><li>- Python Data Science Toolbox</li><li>- Intermediate Python for Data Science</li></ul> MOOC, DataCamp, NYC                            |
| 2019        | <b>Data Science with R</b><br>MOOC, EdX, Harvard University, Cambridge, MA  |
| 2019        | <b>Certificate in Evolutionary Genomics</b><br>Department of Biological Sciences, Universidad de los Andes, Cartagena, Colombia   |
| 2019        | <b>Diploma in "Omics" (Diplomado en Ciencias Ómicas)</b><br>Universidad del Valle, Cali, Valle del Cauca, Colombia  |
| 2018 – 2019 | <b>Computational Thinking for Problem Solving</b><br>MOOC, Coursera, University of Pennsylvania, Philadelphia, PA   |
| 2018        | <b>Spanish for Healthcare Settings</b><br>MOOC, Coursera, Rice University, Houston, TX  |
| 2018        | <b>EHS Lab and Research Safety &amp; Biosafety Principles and Practices Certification</b><br>University of South Florida, Tampa, FL   |

## SKILLS

**Computational:** Comfortable developing novel methods and performing high-dimensional data analysis and visualization using Python and R. Proficient in shell scripting to deploy high performance computational software in the cluster. Basic familiarity with additional coding languages including C and HTML.





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**Technical:** Proficient use and application of bioinformatics databases and tools including PLINK, VCF Tools, MEGA, SnapGene, Pymol, Image J, Mnova NMR, ChemDraw, Sketchup, Avogadro, SPSS, SAS, Microsoft Office Suite, and Adobe Creative Suite applications. Extensive troubleshooting, and software and hardware repair skills of Windows, Linux, and MacOS systems.

**Laboratory:** Experience performing ELISA testing and protein immunoblot, Plasma Inhibitory Activity Assay for flow cytometry, CBA, aseptic techniques, blood fractionation, agarose and SDS-PAGE gel electrophoresis, western blotting, cell culture maintenance, cell counting, cell toxicity assays, media preparation, sub-cloning, restriction digest, PCR mutagenesis, qRT-PCR, bacterial transformation, RNA extraction, and microscopy.

**Languages:** English – Native, Spanish – Upper Intermediate/Professional working proficiency (ILR: 3, CEFR: B2)

## LEADERSHIP & SERVICE

|                |  |
|----------------|--|
| 2021 – Present | Human Genetics Diversity Equity & Inclusion Committee Student Representative |
| 2021 – Present | Volunteer – Brave Space Alliance   |
| 2020           | Women of Color Project Workshop Mentor                                       |
| 2019           | American Genetics Association (AGA)  |
| 2019           | Individual Genomics Interest Group   |
| 2018 – Present | SACNAS Advancing Hispanics/Chicanos & Native Americans in Science            |
| 2018 – Present | Golden Key International Honor Society                                       |
| 2018 – Present | Women in Technology International (WITI)                                     |
| 2018 – 2019    | Student Organizer – Evolutionary Systems Biology Group (EvoSysBio)           |
| 2018 – 2019    | Genomics Liaison – USF Computer Science Club (CSC)                           |
| 2018 – 2019    | Student Representative – Association of Medical Science Graduate Students    |
| 2017 – 2019    | Volunteer – American Civil Liberties Union                                   |
| 2017 – 2019    | National Registry of Emergency Medical Technicians                           |
| 2017           | Volunteer – Tampa Bay Refugee Gardens  |
| 2017 – Present | Women in Science and Engineering (WISE)                                      |
| 2017 – Present | American Society of Hematology   |
| 2016 – Present | Sigma Xi: The Scientific Research Society                                    |
| 2015           | Volunteer – Coalition for the Homeless of Central Florida                    |
| 2013 – 2015    | Alumni/Parent Relations Chair - Delta Zeta Sorority, Pi Theta chapter        |
| 2013 – 2015    | Co-President – Voices for Women  |
| 2012 – 2014    | Public Relations Chair – Rollins Lucy Cross Literature Club                  |
| 2011 – 2014    | Founder & Events Coordinator – Latin American Student Association            |
| 2011 – 2012    | Founding Member & President – Rollins College Dean's Scholars Club           |