

# José DD Cediél-Becerra

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## 🎓 Education

### University of Florida

Doctor of Philosophy (PhD) Candidate – Microbiology & Cell Science

Gainesville, FL

08/2022–Expected 2026

Master of Science (MSc) – Microbiology & Cell Science

05/2024

- **Advisors:** Raquel Dias, PhD, Marc Chevrete, PhD
- **Thesis:** A Framework for Natural Product-Based Drug Discovery Integrating Targeted Genome Mining and Structural Biology.
- **Committee Members:** Dr. Valérie de Crécy-Lagard, Dr. Yousong Ding, and Dr. Daniel Czyz

### NIAMRRE – University of Florida

Gainesville, FL

Certificate – NIAMRRE One Health Antimicrobial Resistance (AMR) Interprofessional Education Program

12/2024

### John Innes Centre (JIC) – Rudjer Bošković Institute

Dubrovnik, Croatia

Certificate – Microbial Specialised Metabolites: From Genomes to Biological Functions

09/2024

### Industrial University of Santander – UIS

Bucaramanga, Colombia

Bachelor of Science – Biology, Computational Biology

12/2021

- **Advisor:** Jorge L. Fuentes, PhD
- **Thesis:** Prodigiosin Production and Photoprotective/Antigenotoxic Properties in *Serratia marcescens* Indigenous Strains from Eastern Cordillera of Colombia.

## 🏆 Honors & Awards

**Recipient of the Boehringer Ingelheim Foundation and John Innes Centre Scholarship** Summer School in

2024

Applied Molecular Microbiology (Dubrovnik, Croatia)

**Latin American-Caribbean Scholarship Recipient** University of Florida

2023–present

**Diversity Travel Award** Society for Industrial Microbiology and Biotechnology (SIMB)

2023

**UF/IFAS CALS Graduate Student Travel Grant** University of Florida

2023

**UF Graduate Student Council Travel Grants** University of Florida

2023

**ASP Lynn Brady Travel Award** American Society of Pharmacognosy (ASP)

2023

**Grinter Fellowship Recipient** University of Florida

2022–2023

**Opportunity Fund Program** Education USA

2022

**Summa Cum Laude Award** Industrial University of Santander

2021

**Laureate Research Thesis Award** Industrial University of Santander

2021

**UNG Scholarship Recipient** The Una Nueva Generacion Project in Colombia

2019–2021

**Lumni GEN 50 Scholarship Recipient** Zigma-Bancolombia Foundation

2019–2021

**Dean's Academic Achievement Award** Industrial University of Santander

2019–2021

**Best GPA in College of Science** Pedagogical and Technological University of Colombia

2017

**GPA Honors Award** Pedagogical and Technological University of Colombia

2015–2017

## ⚙️ Service & Leadership

**Ad hoc Reviewer** Nature Chemistry, PeerJ, BMC Microbiology, Functional and Integrative Genomics, Bioinformatics, Journal of Open Source Software

2024–present

**Executive Board – Treasurer** GATOR Chapter of the American Society of Pharmacognosy (ASP)

2024–present

**Interest Group Coordinator** MIBiG - Supervision of Genomic Annotations for Natural Products, International

2024

**Gator Guide** Organizer and Volunteer for Microbiology and Cell Science Doctoral Student Recruitment Events, University of Florida

2024

**Mentee** Society for Industrial Microbiology and Biotechnology (SIMB)

2024

<b>Mentor</b> Científico Latino – Project Students for Higher-Ed Opportunities and Representation in Training (SHORT) Team, International	2023–present
<b>Organizer/Instructor</b> Annual Bioinformatics Summer Workshop	2023–present
<b>Volunteer</b> Education USA, Opportunity Funds Program	2023
<b>Mentor</b> Industrial University of Santander	2021
<b>Mentee</b> Científico Latino – Project Students for Higher-Ed Opportunities and Representation in Training (SHORT) Team, International	2021
<b>Volunteer</b> Student program in Bucaramanga's poorest neighborhoods	2021
<b>Mentee</b> The Una Nueva Generación (UNG) Project, Colombia	2020–2021
<b>Volunteer</b> Natural History Museum, Pedagogical and Technological University of Colombia	2015–2016

## Teaching & Mentoring

### Teaching Appointments & Experience

<b>Principles of Microbiology Laboratory, University of Florida</b> Instructor	Fa 2022–Sp 2023
<b>National Biology Standardized Tests, Formarte Colombian Group</b> Teacher	Sp 2021–Su 2022
<b>Microbiology Laboratory, Industrial University of Santander</b> Teaching Assistant	2019–2021
<b>Environmental Mutagenesis Laboratory, Industrial University of Santander</b> Teaching Assistant	2019–2021
<b>Biology Laboratory, Pedagogical and Technological University of Colombia</b> Teaching Assistant	2016–2017

### Undergraduate & Postbaccalaureate Mentees (*Total: 14; Current: 1*)

Vanessa Gonzales (Fa 2022)	Maria Cabrera (Fa 2022–Sp 2023)	Agnes Lee (Sp 2023)
Julia Charske (Fa 2022–)	Geam Gonzales (Fa 2022–Sp 2023)	Neha Kashyap (2023)
Melanie Trejo (Fa 2022–Sp 2023)	Erica Hengartner (Fa 2022–Sp 2023)	Ma Andrea Gatmaitan (2023–2024)
Allison Pardon (Fa 2022–Sp 2023)	Nadia Rodriguez (Sp 2023)	Jacob Rulison (2023–2025)
Caty Allen (Fa 2022–Sp 2023)	Jessie Wolfkill (Sp 2023)	Elizabeth Antwi (2023–2024)
Rasee Bhoola (Fa 2022–Sp 2025)	Karina Moncada (Sp 2023)	

## Publications

*Google Scholar:* 243 citations, H-index 5

### Peer-reviewed Publications – Original Research

- JDD Cediél-Becerra, A Cumsille, S Guerra, Y Ding, Vd Crecy-Lagard, MG Chevrette. "Targeted genome mining with GATOR-GC maps the evolutionary landscape of biosynthetic diversity." 2025. *Nucleic Acids Research*. [10.1093/nar/gkaf606](https://doi.org/10.1093/nar/gkaf606)
- K Blin, S Shaw, L Vader, J Szenei, ZL Reitz, HE Augustijn, JDD Cediél-Becerra, Vd Crecy-Lagard, RA Koetsier, SE Williams, P Cruz-Morales, S Wongwas, AES Luchsinger, F Biermann, A Korenskaia, MM Zdouc, D Meijer, BR Terlouw, JJJ van der Hooft, N Ziemert, EJN Helfrich, J Masschelein, C Corre, MG Chevrette, GP van Wezel, MH Medema, T Weber. "antiSMASH 8.0: extended gene cluster detection capabilities and analyses of chemistry, enzymology, and regulation." 2025. *Nucleic Acids Research*. [10.1093/nar/gkaf334](https://doi.org/10.1093/nar/gkaf334)
- MM Zdouc, et al. [398 authors including JDD Cediél-Becerra]. "MIBiG 4.0: advancing biosynthetic gene cluster curation through global collaboration." 2024. *Nucleic Acids Research*. [10.1093/nar/gkae1115](https://doi.org/10.1093/nar/gkae1115)
- JDD Cediél-Becerra, JA Suescun Sepulveda, JL Fuentes. "Prodigiosin Production and Photoprotective/Antigenotoxic Properties in *Serratia marcescens* Indigenous Strains from Eastern Cordillera of Colombia." 2022. *Photochemistry and Photobiology*. [10.1111/php.13507](https://doi.org/10.1111/php.13507)

### Peer-reviewed Publications – Review Articles

- Vd Crecy-Lagard, G Hutinet, JDD Cediél-Becerra, Y Yuan, R Zallot, MG Chevrette, RMMN Ratnayake, M Jaroch, S Quaiyum, S Bruner. "Biosynthesis and function of 7-deazaguanine derivatives in bacteria and phages." 2024. *Microbiology and Molecular Biology Reviews*. [10.1128/mmb.00199-23](https://doi.org/10.1128/mmb.00199-23)

### Peer-reviewed Publications – Book Chapters

- JDD Cediél-Becerra, MG Chevrette. "Targeted genome mining for natural product discovery." 2025. *Methods in Enzymology*. [10.1016/bs.mie.2025.03.005](https://doi.org/10.1016/bs.mie.2025.03.005)

### Preprints

BR Terlouw, C Huang, D Meijer, **JDD Cediél-Becerra**, ML Rothe, M Jenner, S Zhou, Y Zhang, CD Fage, Y Tsunematsu, GP van Wezel, SL Robinson, F Alberti, LM Alkhalaf, MG Chevrette, GL Challis, MH Medema. "PARAS: high-accuracy machine-learning of substrate specificities in nonribosomal peptide synthetases." *bioRxiv*. [Preprint available](#)

## Talks & Abstracts

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### Invited Talks

- 1 "GATOR-GC: Genomic Assessment Tool for Orthologous Regions and Gene Clusters." 10th in the series of John Innes – Rudjer Bošković Summer Schools on Applied Molecular Microbiology. Dubrovnik, Croatia; Sep 12, 2024

### Internal Seminars

- 1 "Targeted genome mining with GATOR-GC reveals the evolutionary landscape of biosynthetic diversity." Microbiology Seminars, Gainesville, FL. Jan 30, 2025
- 2 "PreQ0 gene clusters in *Streptomyces* reveal an unexplored biosynthetic reservoir for drug discovery." Microbiology Seminars, Gainesville, FL. Feb 02, 2024

### Abstracts

- 1 **JDD Cediél-Becerra**, MG Chevrette, Vd Crecy-Lagard, R Dias. "Mining 7-Deazapurine Gene Clusters for Novel Secondary Metabolites." Presented at: The American Society of Pharmacognosy (ASP) Annual Meeting. ; Grand Rapids, MI; Aug 05, 2025.
- 2 **JDD Cediél-Becerra**, MG Chevrette. "GATOR-GC Identifies a Rich Landscape of Overlooked Biosynthetic Gene Clusters (BGCs)." Presented at: 10th in the series of John Innes – Rudjer Bošković Summer Schools on Applied Molecular Microbiology. ; Dubrovnik, Croatia; Sep 12, 2024.
- 3 M Saldanha, **JDD Cediél-Becerra**, S Manning, F Barona-Gomez, MG Chevrette. "A global analysis of Bacterial Genomes Links Secondary Metabolism and Antibiotic Resistance." Presented at: Society for Industrial Microbiology and Biotechnology (SIMB) Annual Meeting; Minneapolis, MN; Aug 02, 2024.
- 4 **JDD Cediél-Becerra**, A Cumsille, Vd Crecy-Lagard, MG Chevrette. "Targeted Genomic Searches to Mine Gene Cluster Evolution in Host-Associated Microbes." Presented at: 9th Conference on Beneficial Microbes; Madison, WI; July 21, 2024.
- 5 **JDD Cediél-Becerra**, Vd Crecy-Lagard, MG Chevrette. "GATOR-GC: Genomic Assessment Tool for Orthologous Regions and Gene Clusters." Presented at: UF Drug Discovery Symposium; Gainesville, FL; April 15, 2024.
- 6 M Saldanha, **JDD Cediél-Becerra**, S Manning, MG Chevrette. "A global analysis of Bacterial Genomes Links Secondary Metabolism and Antibiotic Resistance." Presented at: EPI Research Day; Gainesville, FL; Feb 26, 2024
- 7 **JDD Cediél-Becerra**, Vd Crecy-Lagard, MG Chevrette. "7-Deazapurine-derived natural products: An Incredible Potential Source for Drug Discovery." Presented at: Genetics and Genomics Annual Symposium; Gainesville, FL; Nov 16, 2023.
- 8 **JDD Cediél-Becerra**, Vd Crecy-Lagard, MG Chevrette. "Genome Mining Strategies for Non-Canonical Biosynthetic Gene Clusters." Presented at: Microbiology and Cell Science Annual Symposium; Gainesville, FL; Aug 16, 2023.
- 9 MA Gatmaitan, **JDD Cediél-Becerra**, Julia Charske, Mark Ou, Marc G. Chevrette. "Cockroach-associated Bacteria and Their Antimicrobial Activity." Presented at: American Society of Pharmacognosy (ASP) Annual Meeting; Rockville, MD; Jul 26, 2023
- 10 **JDD Cediél-Becerra**, Vd Crecy-Lagard, MG Chevrette. "Deazaguanine Gene Clusters in *Streptomyces* Reveal Putative Nucleoside-Like Natural Products." Presented at: Society for Industrial Microbiology and Biotechnology (SIMB) Annual Meeting; Minneapolis, MN; Aug 02, 2023.
- 11 **JDD Cediél-Becerra**, Vd Crecy-Lagard, MG Chevrette. "PreQ0 Gene Clusters in *Streptomyces* Reveal an Unexplored Biosynthetic Reservoir." Presented at: American Society of Pharmacognosy (ASP) Annual Meeting; Rockville, MD; Jul 26, 2023.
- 12 **JDD Cediél-Becerra**, JA Suescun Sepulveda, JL Fuentes. "Photoprotective and Antigenotoxic Properties of *Serratia marcescens* Indigenous Strains from Eastern Cordillera of Colombia." Presented at: 19th Congress of the European Society for Photobiology (ESP); WWW and Salzburg, Austria; Aug 30, 2021.

## Professional Societies & Groups

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National Institute of Antimicrobial Resistance Research and Education (NIAMRRE)	2024–present
Society for Industrial Microbiology and Biotechnology (SIMB)	2023–present
American Society of Pharmacognosy (ASP)	2022–present

<b>Introduction to Molecular Spectroscopy (4 weeks)</b>	University of Manchester	2021
<b>Drug commercialization (4 weeks)</b>	University of California San Diego	2021
<b>Drug development (3 weeks)</b>	University of California San Diego	2021
<b>Drug discovery (3 weeks)</b>	University of California San Diego	2021
<b>Writing in the sciences (8 weeks)</b>	Stanford University	2020
<b>Introduction to genetics and evolution (11 weeks)</b>	Duke University	2020
<b>Whole-genome sequencing of bacterial genomes (4 weeks)</b>	Technical University of Denmark	2020