Juan Camilo Barbosa-Caro

Biologist
PhD candidate
Institute for Molecular Physiology
Heinrich Heine University

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Results-driven researcher and leader with strong background in plant physiology, computational tools, and science communication.
Passionate about food production sustainability through effective knowledge transfer and interdisciplinary collaboration.

Core competencies

- Data-driven and result oriented thinking
- Project management
- Team work capacity
- Creative & multidisciplinary problem solving
- Scientific communication skills

Language proficienty

Spanish
English
German
Italian
Russian

Computational skills

- FAIR-focused data management
- scalable pipeline construction and automation
- signal processing
- imaging data analysis

Publications

Research
0000-0002-4101-6450

3D designs

Professional experience

Research Scientist - Physiology of plant stress-response signaling
Heinrich Heine Universität, Düsseldorf - Germany
Since September 2021

Group coordinator - virtual learning material generation for Taiz & Zeiger 7th ed. Plant Physiology text book.
Remote, Maryland - USA
January 2022 - June 2022

Teaching assistant - Lab coordination and guidance of university students.
University of Maryland, College Park - USA
August 2018 - August 2021

Science trainer - Colombian science olympic team
Antonio Nariño University, Bogotá - Colombia
January 2016 - September 2018

Education

PhD. in Plant Biology
Heinrich Heine University, Düsseldorf - Germany
since September 2021

MSc. in Plant Biology
University of Maryland, College Park, USA
August 2018 - August 2021

Bsc. in biology
Colombia National University, Bogota - Colombia
September 2017

References

Dr. Michael Wudick
wudick@hhu.de
Heinrich Heine Universität
Düsseldorf - Germany

Prof. Jose Feijo
jfeijo@umd.edu
University of Maryland
College Park - USA

Laboratory skills

Plant in vitro culture

- protoplasting and regeneration of plant tissue
- maintenance of cell suspension cultures

Animal cell in vitro culture

- maintenance of cultured mammalian cells

Fungus cultivation

- mycelium maintenance in solid and liquid media
- scalable inoculus production
- sevelopment of novel spawn mix
- growth conditions automation - green house automation

Molecular biology

- DNA extraction for genotyping, sequencing, and cloning
- genotyping using known molecular markers
- molecular cloning
- RNA in vitro synthesis

Electrophysiology

- patch-clamp in mammalian and protoplasted plant cells
- patch clamp in living brain slices
- plant cell impalement - current clamp
- Two-Electrode Voltage Clamp in *Xenopus laevis* oocytes
- Multi-Electrode Array recording of surface potential plant tissues

Workshops & Courses

Statistics and Modelling for Biology
Prof. Phillip Johnson
University of Maryland, USA
2020

Probability theory, statistical inference, and hypothesis testing with likelihood , Bayesian methods and other statistical test. Hands on course usign the software R.

Programming for Biology
Prof. Steve Mount, Prof. Najib El-Sayed
University of Maryland, USA
2020

Manipulation and analysis of large data files in a unix environment using awk, python and R

Biology of lichens and fungi
National University of Colombia
2014

University course on general biology of fungi and lichens, with emphasis on industrial usage and a practical training on *P. ostreatus* culture.

Identification of Basidiomycota fungi
VII Latinamerican mycology congress
November 2014

Macro- and microscopic technics for identification of basidiomicetes families.

Bioprospection of colombian macromycetes
National University of Colombia
April 2018

Identification and characterization of fungi, aiming to determine possible use in pharmacological, cometic, or food industries.