

Ana Giraldo-Silva, M.S.

Ph.D. candidate

Arizona State University - School of Life Science - LSE 422
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EDUCATION

- 2013 - Present** Ph.D. Student - Environmental Life Sciences. Arizona State University, USA
Advisor: Dr. Ferran Garcia-Pichel
- 2012** M.S. Marine Ecology. University of Las Palmas de Gran Canaria, Spain
Advisor: Dr. Antera Martel
- 2008** Bachelor of Sciences (Hons) in Marine Biology. Universidad of Bogotá Jorge Tadeo Lozano, Colombia
Advisor: Dr. Elvira Alvarado Chacon

ACADEMIC RESEARCH EXPERIENCE

- 2013 - Present** Research Assistant at Arizona State University
Advisor: Dr. Ferran Garcia-Pichel
- 2009 - 2010** Researcher at the Spanish Bank of Algae, University of Las Palmas de Gran Canaria. Canary Islands, Spain.
- 2008 - 2009** Researcher at the Control Contamination Center of the Pacific (CCCP). General Maritime Direction. Tumaco, Colombia.
- 2007 - 2008** Research undergraduate student - National Oceanographic and Atmospheric Administration (NOOA), Collaboration project with the Institute of Marine and Coastal Research "José Benito Vives de Andrés" INVEMAR, University of Bogotá Jorge Tadeo Lozano and Special Administrative Unit of National Parks-UAESPNN.
- 2006 - 2007** Research undergraduate student - Colciencias (Administrative Department of Science, Technology and Innovation, Colombia). Tropical Marine Ecosystems Group. University of Bogotá Jorge Tadeo Lozano.
- 2005 - 2006** Research undergraduate student Universidad of Bogotá Jorge Tadeo Lozano and Special Administrative Unit of National Parks-UAESPNN.

TEACHING ASSISTANTSHIP INSTRUCTION EXPERIENCE

- 2018 Spring** General Biology – BIO 181. Arizona State University.
- 2017 Spring** General Biology (Honors) – BIO 181. Arizona State University
- 2016 Spring** General Biology – BIO 181. Arizona State University.
- 2014 Spring** Microbiology – MIC 206. Arizona State University

PEER REVIEWED PUBLICATIONS

Sergio Velasco Ayuso, **Ana Giraldo Silva**, Corey Nelson, Nichole Barger, Ferran Garcia-Pichel (2017). Microbial Nursery Production of High-Quality Biological Soil Crust Biomass for Restoration of Degraded Drylands Soils. *Appl Environ Microbiol* 83:302179-16. <https://doi.org/10.1128/AEM.02179-16>.

Zhou X, Smith H, **Giraldo Silva A**, Belnap J, Garcia-Pichel F (2017). Differential responses of dinitrogen fixation, diazotrophic cyanobacteria and ammonia oxidation reveal a potential warming-induced imbalance of the N-cycle in Biological soil crusts. PLoS ONE 11(10): e0164932.doi:10.1371/journal.pone.0164932

Giraldo Silva A, Salazar D, Rodríguez D, Alvarado E, Sánchez J (2007). Estado actual de las poblaciones de *Acropora cervicornis*, *Acropora palmata*, *Diploria labyrinthiformis* y *Siderastrea siderea* en el área marina protegida Corales del Rosario y Bernardo. Uso como Indicadores biofísicos de efectividad de manejo. Informe del Estado de los Ambientes Marinos y Costeros en Colombia. Serie de Publicaciones Periódicas, Invenmar ISBN: 1692-5025 ed: Instituto de investigaciones Marinas y Costeras Invenmar v.8 fasc 1 p. 84-87.

COMMUNICATIONS

- 2018** Recent advances in biological soil crust restoration: Inoculum production, conditioning, and biocrust microbiomics. Society for Ecological Restoration. September 12th-14th 2018. **Oral**
- 2017** *Microcoleus vaginatus* carries a nitrogen-fixing microbiome that can help it colonize nutrient-deficient arid substrates. 11th International Phycological Congress. August 13th-19th 2017. **Oral**
- 2017** Ecological dermatology: products to restore the soil skin of arid lands to its natural state and beauty. American Society for Microbiology meeting ASM-Microbe 2017. June 1st-5th 2017. **Poster**
- 2017** The cyanosphere: the portable microbiome of *Microcoleus vaginatus*. Abscon. April 24th to 28th, 2017. **Oral**
- 2016** *Microcoleus vaginatus* carries a nitrogen-fixing microbiome that can help it colonize nutrient-deficient arid substrates. BIOCRUST 3. September 26th -30th 2016. **Oral**
- 2016** Nursing the biological soil crust restoration: cyanobacteria isolation, lab cultivation, scaling up and inoculum conditioning. 12th Workshop on Cyanobacteria. May 19th-22nd 2016. **Oral**
- 2016** Recovering arid lands: cyanobacteria conditioning for biological soil crust restoration. 55th Annual Meeting for the American Society of Microbiology Arizona/Southwestern Chapter. April 16th 2016. **Poster**
- 2015** Nursing the biological soil crust restoration: cyanobacteria isolation, lab cultivation, scaling up and inoculum conditioning. 13th Biennial Conference of Science and Management on the Colorado Plateau & Southwest Region. October 7th 2015. **Oral**.
- 2010** Characterization of the Microalgal Crust Co-cultivated from Marine Agronomy of Halophytes in Hydroponic System. International Symposium Macaronesian Botany. Ponta Delgada, Azores (Portugal). September 23th to 25th. **Poster**.
- 2010** Fluorescence Activated Cell Sorting (FACS) as a tool for Rapid Establishment of Clonal Microalgal Cultures at the National Bank of Algae. World federation for Culture Collections. Florianopolis, Santa Catarina. (Brazil). September 26th to October 1st. **Poster**.
- 2008** Abundancia y estructura de tallas de las especies *Acropora cervicornis*, *Acropora palmata* y *Diploria labyrinthiformis* en el Parque Corales del Rosario y San Bernardo, Colombia. XIII Seminario Nacional de Ciencia y Tecnología del Mar “La Ciencia y la Tecnología al servicio del país. Libro de Resúmenes. ISBN: 978-958-98634-0-4. p. 37. **Oral**.

SESSION ORGANIZATION

- 2015** Biological Soil Crust session of the 13th Biennial Conference of Science and Management on the Colorado Plateau & Southwest Region, primary convener

ADVANCE RESEARCH TRAINING COURSES AND WORKSHOPS

- 2016** Strategies and Techniques for Analyzing Microbial Population Structures (STAMPS). Marine biological Laboratory. The University of Chicago - Woods Hole, MA. August 3rd-13th 2016.
- 2010 - 2011** Formation in Flow Cytometry Applied to Microalgae. Theoretical and practical training on Flow cytometer analysis of microalgal cell based in natural pigments and fluorochromes, in combination with cell sorting. From September 2010 to September 2011 by Dr. Paulo S. Salomon.
- 2011** Marine and Continental Cyanobacteria: taxonomy, sampling techniques, isolation and culturing techniques. Spanish Bank of Algae, Marine Biotechnology Center, University of Las Palmas, Canary Islands, Spain. June 27th - 30th 2011. Teacher and assistant.
- 2010** International Training Course on Taxonomy and Conservation of Tropical and Subtropical Cyanobacteria. Taught by Dr. Jiri Komárek and Dr Jara Kómarková. Marine Biotechnology Center, Spanish Bank of Algae, Canary Islands, Spain. March 12th to 19th March 2010.
- 2007** International Course of Multivariant Analysis. University of Vigo (Spain). May 28th to June 1st
- 2001** Advanced Diving Course. Caribbean Divers Diving School, Santa Marta, Colombia.

AWARDS

- 2018** School of Life Sciences Completion award – - Arizona State University (\$11498)
- 2017** School of Life Sciences Travel Award - Arizona State University (\$800)
- 2017** Graduate College Student Travel Award – Arizona State University (\$500)
- 2017** Lisa Dent Memorial Ecology Award (\$4686)
- 2016** Fellowship for graduate training – SOLS RTI (\$1500)
- 2016** Best poster – American Society for Microbiology meeting ASM-2016 (\$50)

PATENTS

Garcia-Blairsy Reina G., Salomon, P. S., **Giraldo Silva, A.** and Cancelo, E. 2011. Method for Select and Isolate Hyperlipidic Strains of the Microalgae *Tetraselmis suecica* using Flow Cytometry and the Fluorochrome Nile Red. Spanish Office of Patents and Trademarks, OEPM.

SERVICE

- 2017-2018** International student's representative. Graduate Students E-board. School of Life Sciences – Arizona State University
- 2015-present** Ask a biologist program. Biology learning resource tool for students, teachers, parents, and life-long learners. Arizona State University.

TECHNICAL SKILLS

Microbiology: strain isolation, culture enrichments, optical and fluorescent microscopy, use of various dyes.

Molecular biology: DNA extraction, PCR, real-time PCR.

Environmental skills: Biological soil crust identification, classification and sampling, cyanobacterial cultures identification

Biochemical skills: pigments extraction.

Data processing: treatment of 16S library data (Qiime pipeline), sequence management and molecular phylogeny, treatment of images.