

Melissa C. Ortiz Rosario

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Employment history

Biochemistry research trainee (August 2014-August 2018)

Employer: Research education award appointment from the Research Initiative for Scientific Enhancement (RISE) at University of Puerto Rico Medical Sciences campus

Duties:

- Communicate research outline, goals and results to scientific audiences
 - Attend at least one professional society national meeting per year to present research findings in poster format
 - Prepare and present a 20-minute lecture on thesis project research and findings to peers at least once a year
- Keep written record of experimental procedures and results
- Design and perform experiments regarding omega-3 fatty acid production in bacteria
 - Isolation of genomic and plasmid DNA
 - Preparation of bacterial lysates
 - Agarose gel electrophoresis and SDS-PAGE
 - Preparation of competent cells and glycerol stocks
 - Bacterial cell transformation (electroporation and heat-shock)
 - TOPO-cloning
 - Confirmation of cloning by PCR and sequencing
 - Primer design (Software: NCBI Primer-BLAST)
 - Multiple sequence alignment analysis and generation of phylogenetic trees (Software: NCBI-BLAST, GALAXY, MEME Suite, and FigTree)
 - Protein expression and purification (T7-LacO 6xHis vector, inclusion bodies isolation, and affinity purification)
 - Protein quantitation by BCA assay and by spectroscopic analysis A_{280}
 - Western blot analysis
 - Circular dichroism of protein samples
 - Fatty acid extraction by Bligh-Dyer method, and esterification by acid catalyzed methanolysis
- Perform analysis of the data, and summarization in tables and graphs
- Train and supervise undergraduate students performing lab procedures
- Attend career development activities such as seminars, workshops and lectures
- Develop and maintain my individual development plan

Associate Scientist-Process Development (March 2011-July 2012)

Employer: Kelly services contractor for Amgen Manufacturing Ltd.

Duties:

- Oversee the compliance with 6S culture of safety and organization in the lab
- Support downstream process development applications

- Perform manufacturing operations at the bench scale
- Perform verification of technical reports and experimental documentation
- Follow good manufacturing practices
- Follow and monitor experimental design and protocols of experiments to obtain reproducible results in the purification processes of mammalian derived protein products.
- Analyze and record experiments. Communicate data to the work group.
- Purify antibodies and proteins produced with CHO cells through FPLC.
- Knowledge of small scale models for harvest and purification processes.
- Conduct pH, conductivity, turbidity, and absorbance tests in order to monitor operational and performance parameters.
- Perform and document equipment calibration and maintenance activities.
- Perform quarterly laboratory inventory.

Education

Biochemistry PhD candidate (August 2012-Present)

University: University of Puerto Rico Medical Sciences Campus

Thesis project: Production and regulation of omega-3 fatty acids in bacteria

Principal investigator: Abel Baerga-Ortiz

Student representation:

- President of the graduate student association (2015-2016)
- Senator ex-officio in the academic senate representing the biomedical sciences students (2015-2016)
- Secretary of the graduate student association (2013-2014)
- Student representative to the university board representing the students of the UPR-Medical Sciences Campus (2013-2014)
- Senator ex-officio in the academic senate in virtue of occupying the post of student representative to the university board (2013-2014)

Poster presentations:

- American Society for Microbiology (ASM) Annual Meeting 2015
- American Chemical Society Fall Meeting (ACS) 2017
- American Society for Biochemistry and Molecular Biology Annual Meeting (ASBMB) 2018

Research experience abroad

- Special research student at Hokkaido University, Sapporo, Japan (2015)
 - Training in fatty acid extraction methods

Industrial microbiology BS (August 2005-September 2010)

University: University of Puerto Rico Mayaguez Campus

- Undergraduate research experience under the mentorship of doctor Belinda Pastrana-Rios
 - Transformation of bacterial cells

- Expression and purification of proteins
- Pre-screen assays on protein crystallography

Other professional qualifications

American Society for Biochemistry and Molecular Biology Advocacy Delegate (2018)

The ASBMB ATP is a six-month externship that provides hands-on science policy and advocacy training and experience. ATP delegates first complete a digital advocacy training course to introduce them to science policy and advocacy, learning about how federal laws and budgets are passed. With support from ASBMB public affairs staff, delegates develop activities focused on policies facing their regions.

University of Vermont I-TERP program alumni (Summer 2017)

The I-Trep program provides education and skill development in entrepreneurship in order to facilitate the generation and competitiveness of biomedical businesses and to foster economic growth in IDEA states.

Yale-CienciaPR alumni (2016)

Year-long (January - December) program to provide graduate students with opportunities for mentoring, peer support and networking; to develop skills important for career advancement; and to contribute to their communities through science outreach.

Computer skills

- Microsoft Office (Word, Excel, and Power Point)
- R for statistical analysis
- GraphPad Prism