

DEPARTMENT OF BIOCHEMISTRY

The graduate program in Biochemistry began in 1960 offering Masters in Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in Biochemistry and Nutrition. The name of the department was changed in 1992 to Department of Biochemistry. The graduates of our program can be found working throughout the industrial, academic and government environment in Puerto Rico, the U.S. mainland, and Latin America. The department faculty actively seeks external funding to support their research, our graduate students, and improve our research facilities with state of the art instrumentation.

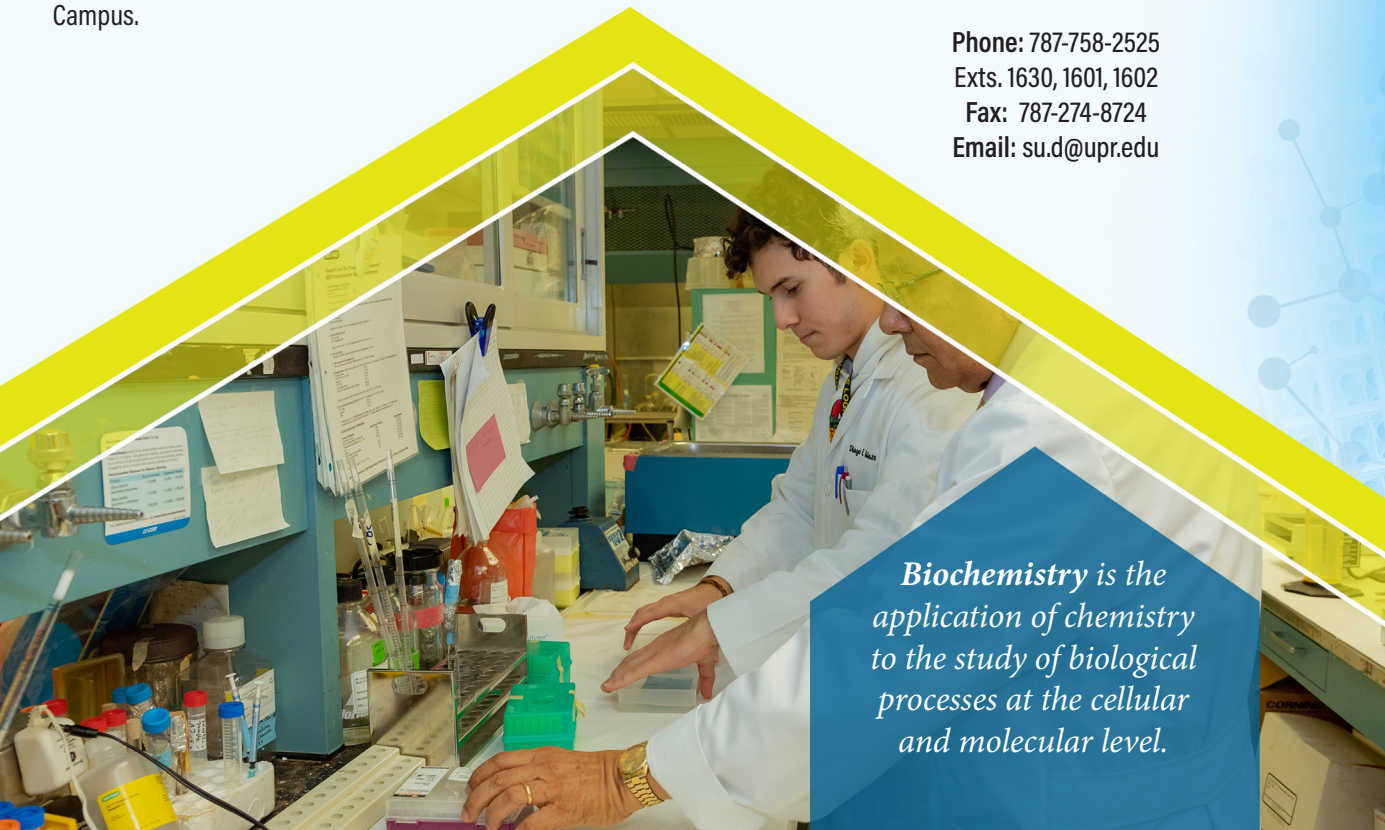
The Department of Biochemistry is conducting basic and translational research in areas pertaining to the molecular basis of diseases that affect persons in Puerto Rico and nationally. At the heart of our graduate program is a strong commitment to graduate student training. Individual faculty members of our department also participate as mentors in the Intercampus Ph.D. program in Biology at the UPR Río Piedras Campus.



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*Biochemistry is the
application of chemistry
to the study of biological
processes at the cellular
and molecular level.*

UNIVERSITY OF PUERTO RICO SCHOOL OF MEDICINE



Graduate Studies in BIOCHEMISTRY



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PROGRAM DESCRIPTION AND ADMISSION REQUIREMENTS:

The Department of Biochemistry is located in the sixth and second floor of the University of Puerto Rico, Medical Sciences Dr. Guillermo Arbona Irizarry Building at the Río Piedras Medical Center. Available Research Facilities include the Metabolomics Research Core, the Genomics Translational Research Unit, Molecular Biology Core and the facilities of the Center for Environmental and Toxicological Research. Also available are the Translational Proteomics Center, Flow Cytometry and Electron Microscopy Units, the campus Computer Center and the Animal Laboratory Resources Center, and the Animal Resource Center and the infrastructure resources of the Molecular Sciences Research Center located off-campus in Río Piedras, PR. These resources complement the facilities offered by the individual investigators in their respective laboratories.

Candidates for an M.S. degree are required to complete a minimum of 27 credits in addition to 6 thesis credits. Ph.D. candidates must complete a minimum of 48 course credits in addition to 15 dissertation credits. Ph.D. candidates must pass a qualifying exam that is taken after the second year of course work.

THE REQUIREMENTS FOR ADMISSION ARE AS FOLLOWS:

1. All applicants must fulfill the general requirements of the Graduate Division of the School of Medicine. The applicant must submit scores on the GRE General Test. Please, contact de Deanship for Biomedical Sciences regarding the deadline to apply for admission.
2. It is desirable that applicants have a B.S. degree in Chemistry or Biology, however, applicants with majors in other areas are strongly encouraged to apply.
3. Applicants must have a minimum G.P.A. of 3.0.
4. Required undergraduate courses are: General Biology (2 semesters), General Chemistry (2 semesters), Analytical Chemistry (1 semester), Organic Chemistry (2 semesters), Physics, and Calculus-I. Recommended courses include Cell Biology, Biochemistry, and Genetics.

FINANCIAL AID:

Teaching and Research Assistantships are available through the Dean of Academic Affairs. Financial aid through special programs such as NIGMS-RISE and other federal grants may also be available. Information on other financial aid is available through the Office of Financial Aid.

RESEARCH INTEREST

- Molecular and Genetic Alterations in Disease
- Biochemistry of Proteins
- Protein Structure/Function Relationships
- Glycobiology
- Genomics
- Clinical Biochemistry
- Analytical Biochemistry
- Biochemical Toxicology
- Biochemical Pharmacology
- Molecular and Cell Biology
- Proteomics
- Cancer Metastasis
- Metabolomics

THE BIOCHEMISTRY FACULTY AND THEIR RESEARCH INTERESTS:

Baerga, Abel J., Ph.D., Associate Professor
Biosynthesis of natural products; Enzyme Structure, Function and Mechanisms; Gut microbiome interactions in cancer

Banerjee, Dipak, Ph.D., Professor
Glycobiology of breast cancer

Cadilla, Carmen L., Ph.D., Professor
Human Genetics and Genomics; Rare Genetic Disorders that affect the PR population; Regulation of gene expression

Chorna, Nataliya, Ph.D., Adjunct Professor
Neuropsychiatric Disorders and Metabolism

Dharmawardhane, Suranganie, Ph.D., Professor
Signal transduction in breast cancer metastasis; Experimental Therapeutics for breast cancer

Jiménez, Braulio D., Ph.D., Professor
Molecular Toxicology; Effects of environmental pollutants on gene expression and asthma

León Vázquez, Ruth G., Ph.D., Assistant Professor
Defining the molecular mechanisms of CtHrC1, Twist 1 and Twist 2 in adipocyte differentiation and senescence; Innovations in Medical Education

Rodríguez Medina, José R., Ph.D., Professor and Chair
Stress signaling mechanisms in yeast; Protein-protein interactions of stress receptors

Rodríguez Orengo, José F., Ph.D., Professor
Health and Nutrition; Biochemical pharmacology; Analytical biochemistry

Vivas Mejía, Pablo E., Ph.D., Assistant Professor
Non-coding RNAs in ovarian and brain tumors; Nanoliposomal formulations for drug delivery; Role of oncogenes in drug resistance