



Job Vacancy: Graduate/Research Assistant



Laboratory for
Genomic Effects on Nature by Environmental Stressors

BACKGROUND

The Laboratory of Genomic Effects on Nature by Environmental Stressors (GENES) studies molecular changes in organisms in response to pollution by profiling genomic, metagenomic, transcriptomic, proteomic, and metabolomic changes. In order to maximize relevance to the real world, we use a translational research approach by integrating molecular data from the laboratory with molecular data from the field. Field studies involve geospatially mapping environmental and molecular parameters by underwater GPS, sonar mapping, satellite imagery, and computational analysis of geospatial maps. Data from the field and laboratory are bioinformatically-integrated to identify field-validated, stress-specific molecular biomarkers. These will be used to develop molecular diagnostics that act as early warning systems to alert ecosystem managers to point-sources of anthropogenic pollution before rather than after irreversible ecological damage occurs. The laboratory combines deep science in the laboratory with extreme field studies to elucidate cellular pathways.

JOB DESCRIPTION AND BACKGROUND

Dr. Alexander Young is an American citizen that came to the Philippines because the Philippines is the number one place in the world to study marine biodiversity. Dr. Young was originally trained in the biomedical sciences at Harvard and Cornell universities with experience in the Human Genome Project, the biotechnology industry, and biotechnology venture capital. Dr. Young now wants to use his experience in the study of human diseases (to help save people) towards the study of marine diseases caused by environmental pollutants (to help save the planet).

The Graduate/Research Assistant will join a new funded project entitled “Establishing a laboratory animal model system for coral bleaching based upon sea anemones to study and develop molecular diagnostics that protect Philippine coral reefs from environmental pollutants”. The small sea anemone *Exaiptasia* has become a powerful model organism for studying coral bleaching (they are the laboratory mice for coral bleaching). However, no *Exaiptasia* system exists in the Philippines. We will establish the first *Exaiptasia* model organism system in the Philippines by creating clonal lines of both normal and bleached organisms. Changes in gene activity in response to different environmental stressors will be measured (for example, petroleum hydrocarbon pollution that we previously associated with bleaching in the field, pollution from microplastics, sedimentation, the Taal volcanic ash, fertilizers and pesticides from farming).

The part time graduate/research assistant will join an exciting team of other graduate students and research assistants in Dr. Young’s laboratory and intellectually participate in other ongoing projects beyond the model organism project. In order to initiate the new project, the part time graduate or

research assistant will first assist in procurements for equipment and supplies (canvassing and obtaining quotes from vendors, processing procurements). Depending upon the position (Graduate Assistant or Research Assistant) and depending upon when UP restrictions on laboratory work during the coronavirus COVID-19 pandemic is lifted, the assistant will then assist in establishing clonal lines of Exaiptasia in aquariums. Operations include optimizing conditions for growth of Exaiptasia, maintaining aquariums, and maintaining Exaiptasia and serial cloning. Once established, the assistant will help conduct aquarium experiments to measure changes in gene activity and changes in other parameters (behavioral, morphological, cellular) in response to various environmental stressors. Dr. Young is looking for a highly motivated Assistant with fluency in biochemistry, molecular, or cell biology and experience or willingness to be trained in any combination of the following: 1) laboratory skills in biochemistry, molecular or cell biology; 2) bioinformatics and command line programming; 3) maintenance of aquariums. The Graduate/Research Assistant should have high organizational skills and in the writing of written reports. The Research Assistant is expected to work part time only and commit for the first year of the project. The duration of the project is two years. However, the position is for one year, renewable every six months. Depending upon the performance of the RA, the Research Assistant will have the opportunity to continue in the laboratory as the laboratory manager, Research Associate, or graduate student. The position is available immediately. This is an excellent way for graduate students to make part time money through work-from-home during the pandemic and one to twice weekly laboratory work.

TERMS OF REFERENCE

The University Research Associate is expected to:

- Work collaboratively in a team, respecting professional norms, under the supervision of the Principal Investigator and directly reporting to Principal Investigator.
- Initially gather quotations for the procurement of relevant equipment and supplies in close coordination with the Principal Investigator and the accounting offices of IESM and OVPAA.
- Process procurement of relevant equipment and supplies in a speedy manner for signature by the Principal Investigator in close coordination with the Principal Investigator and the accounting offices of IESM and OVPAA.
- When COVID-19 restriction on laboratory work is lifted, optimize and maintain Exaiptasia in aquariums, including weekly changes of synthetic sea water and feeding of Exaiptasia
- Help design and perform experiments on Exaiptasia including monitoring of morphological changes, behavior, and gene activity in Exaiptasia in response to environmental stressors (e.g., microscopic examination, counting of zooxanthellae density, DNA and RNA purifications).
- Actively participate in research team meetings to discuss data collection activities, transcribed data, and proposed implementation strategies.
- Communicate effectively, in verbal, written, and email form, with the team; inform the Principal Investigator in a timely manner about any issues that may compromise the study, participants, or research team members.
- Contribute to the dissemination of research findings in schools/universities and via conferences, journal articles, and social media.
- Other tasks that may be assigned by the Principal Investigator.
- Be currently enrolled in one of the institutes of the College of Science.
- Graduate Assistant effective until end July 15, 2022.
- Salary: Total annual compensation package of PHP 144,000.00 for 120 hours per month. Base salary is PHP 12,000 / month or PHP 100/hour to work part time for a maximum of 120 hours per month.

ELIGIBILITY

Applicants with Bachelor's or Master's Degree with fluency in biochemistry, molecular, or cell biology and experience or willingness to be trained in any combination of the following fields or skills: 1) laboratory skills in biochemistry, molecular or cell biology; 2) bioinformatics and command line programming; 3) maintenance of aquariums. Candidates with a natural ability and fluency in the biological sciences and a deep love of cellular pathways are preferred but not required. Candidates should have the ability to think both globally and in details. Preferably proficient in writing, editing of academic and technical reports. Prior experience in molecular biology, bioinformatics, or chemical analysis is also highly appreciated. Highly motivated, team player with good moral character.

TO APPLY

Please apply via email to Dr. Alexander T. Young at ayoung@iesm.upd.edu.ph. Use the subject : "Application: Graduate Research Assistant" when replying. Please include the following in your application:

1. Curriculum vitae (CV)
2. Transcript of records from undergraduate and graduate schools
3. Two (2) professional or academic references (not from a family member).
4. Motivation statement describing why you want to be hired, why you are an ideal candidate, and how you think this experience will benefit your future career.

Only complete applications will be considered. The deadline is August 1, 2021 11:59PM Manila time, or as long as the position is vacant.

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Kind regards,

Alex

Alexander Young PhD

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