**BalikPhD Recruitment Program**
**as of November 29, 2018**

| # | Project Title | Name of Proponent | CU | Unit | Benefeciaries | Funding Source | Start | | | End | | | Status | Total Program Budget | Publications | Other Outputs |
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| | | | | | | | Year | Month | Day | Year | Month | Day | | | | |
| 1 | Catalytic valorization of lignin for the production of aromatic chemicals | Aguila, Mae Joanne Budol | UPLB | CAS | researchers, academe | Balik-PhD | 2016 | September | 13 | 2018<br>2019 | October<br>February<br>(Extension) | 13<br>12 | Ongoing | 2,500,000.00 | | KKP-St Annual Convention of the Kapisanang Kimika ng Pilipinas - Southern Tagalog, Inc. and a product demonstration about combined flash chromatography and preparative HPLC given by Dakila Trading Corporation.<br><br>Attended the 32nd Philippine Chemistry Congress wherein different breakthourghs in science and scientific papers were presented<br><br>Project Leader represented the Institue of Chemistry for the Youth Science Award Forum<br><br>Successfully performed bis(amino)pincer ligand synthesis from isophthalaldehyde and 2, 6-dimethylaniline via direct reductive amination.<br><br>An undergraduate thesis student supported by the project, presented a poster and won 2nd place for his research entitled "Cleavage of C-O bond in aromatic ethers as lignin model compound via transfer hydrogenation reaction using iron-pyridyldiimine complexes as catalysts" in the 10th Student Faculty Research Conference last November 20, 2017. |
| 2 | Utilization of sago flour to improve nutritional profile of selected food products | Alviola, Juma Novie Ayap | UPMin | CSM | Food technologists/ researchers, academe, food manufacturing industry | Balik-PhD | 2015 | May | 18 | 2017 | June | 17 | Ongoing | 2,500,000.00 | | Research output was presented on two occasions during the ICAEM 2016 Davao City (October 27, 2016) and the CSM Colloqium, UP Mindanao, Davao City (December 8, 2016).<br><br>Alviola, JNA and Mendoza, MB. Go Sago. Media Luncheon on Food Security for Sustainable Development. UP Mindanao, 6 July 2017.<br><br>Monterde VG (Thesis Advisee) and Alviola JNA. Comparison of Physicochemical and Functional Properties of Wheat and underutilized Local Flours. PAFT Convention Undergrad Paper Competition, The Blue Leaf Cosmopolitan, Quezon City, 28 July 2017. Paper won first place. |
| 3 | Identification and validation of non-coding RNAs induced by thyroid hormone and glucocorticoids in hippocampal neurons | Bagamasbad, Pia Dano | UPD | CS | Neural development researchers, endocrinologists, gene regulation studies | Balik-PhD | 2015 | July | 13 | 2017 | June<br>December<br>(Extension) | 12<br>31 | Ongoing | 2,500,000.00 | | Two (2) undergraduate thesis students have succesfully defended their theses and graduated magna cum laude. |
| | | | | | | | | | | | | | | | | A poster presentation entitled "Identification of a Hormone-responsive enhancer element in the cythochrome b561 gene in mouse hippocampal neurons" was presented by the project RA on April 2 under Gene Regulation and Development research category (Shortlisted as one of the five posters in the Presidential Poster Competition).<br><br>Project Leader has set up a start-up lab for next generation transcriptome analysis. |
| | | | | | | | | | | | | | | | | In total, 4 students have contributed to the generation of data for this project. The data generated will be included in their theses. Of those 4, 2 were trained and have graduated as undergraduate students, 1 as a current graduate student, and 1 has graduated from his undergraduate degree and is a current graduate student. The analysis of RNA sequencing results presented in this report was performed by one of the graduate students, Francisco Polotan, through coding/programming and the use of bioinformatics tools and pipelines in cooperation with the Bioinformatics Core Facility of the Philippine Genome Center. Data generated from his *in silico* analysis as well as the resulting validation of those results will be included in his MS Thesis. |

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| | | | | | | | | | | | | | | | | RNA sequencing by BGI was completed and delivered in April 2017. Core bioinformatic analysis and re-analysis of the sequencing results was done from April to December 2017. Following completion of the in silico analysis, results will be validated through quantitative real-time PCR. After validation, a paper will be submitted for publication using the data generated from the project. |
| | | | | | | | | | | | | | | | | The funding received from the Balik PhD grant has successfully allowed the purchase of equipment and next generation transcriptome analysis to generate a start-up lab. All of the equipment has been purchased following delivery and set-up of the biosafety cabinet. Data generated from the project was presented at the ENDO 2017, The Endocrine Society's 99th Annual Meeting in Orlando, Florida last April where one of the two abstracts was shortlisted for the best poster award for the Gene Regulation and Development research group. RNA-sequencing results have been delivered and preliminary analysis already done by the supplier. Core bioinformatics analysis and re-analysis of the results has been done, and validation of targets of interest can be initiated. |
| 4 | Transcriptome-based genetic resources for an armoured scale insect species, Aspidiotus rigidus and its susceptible and tolerant host coconut, Cocos nucifera. | Bautista, Anita Mascareñas | UPD | CS | Molecular biologists, insect pest management operators, coconut industry, coconut farmers | Balik-PhD | 2015 | July | 1 | 2017 | June | 30 | Ongoing | 2,495,000.00 | | Successful validation of sequences for an enzyme (Cytochrome P450s) and molecular markers (SSRs) mined from the Aspidiotus transcriptome.<br><br>Transcriptome sequencing of Aspidiotus destructor won the Best Poster Award during the Philippine Association of Entomologists Scientific Session of the 49th Pest Management Science Council of the Philippines Conference and Annual Scientific meeting held last May 10-12, 2017. |
| 5 | Ecological processes on reefs exposed to different environmental conditions: influence on coral community structure | Cabaitan, Patrick | UPD | MSI | researchers, students, academe | Balik-PhD | 2018 | January | 8 | 2020 | January | 7 | Ongoing | 2,500,000.00 | | |
| 6 | Synthesis of Inhibitors of Mycobacterial Cell Wall Galactan Biosynthesis | Completo, Gladys Cherisse Jaucian | UPD | CS | researchers, students, academe | Balik-PhD | 2016 | September | 13 | 2018 | October | 18 | Ongoing | 2,484,999.60 | | Oral Presentations:<br>1. Allas, M. J. DG .; Sumalde, J. M. C.; Angkico, RCB.; Espejo, JW;Zheng,R; Lowary,TL; Completo, G. C. "Synthesis and Biological Studies of Substrate-based Probes of Galactofuranosyltransferase 1 (GlfT1) Towards Understanding Mycobacterium tuberculosis" Oral presentation at the 17th Conference of the Science Council of Asia, Philippine International Convention Center (PICC). June 14-16, 2017.<br>2. Ortiz, C.L.D.; Completo, G.C.J.; Nacario, R.C.; Nellas, R.B." Virtual Binding Analysis and Synthesis of Functionalized Sugar-Furanosides as Galactosfuranosyltransferase 2 (GlfT2) Inhibitor" Oral presentation at the 32nd Philippine Chemistry Congress, Puerto Princesa, Palawan, May 31-June 2, 2017.<br><br>Flores, M.S.C.; Completo, G.C.J.; Nacario, R.C.; Nellas, R.B. "Computational Design of Donor Inhibitors of Galactofuranosyltransferase 2 (GlfT2)" Poster presentation at the 45th KKP-ST Convention, and awarded as Best Poster, Los Baños, Laguna, October 27-28, 2016.<br><br>GC Completo, RG Sangalang, BMI Pique, RC Nacario. 2016. Simple and efficient method for the synthesis of galactofuranosides. Kimika 27(2), 39-50. |
| 7 | Archaeological human remains from Island Southeast Asia; A taphonnomic approach | Crozier, Catherine Rebecca C. | UPD | ASP | Archaeologists, students, researchers | Balik-PhD | 2014 | August | 1 | 2016<br>2017 | August<br>February<br>(Extension) | 30<br>28 | Ongoing | 2,500,000.00 | Pawlik A, Crozier R, Fuentes R, Wood R, Piper P. Early to Mid-Holocene Burial Traditons of Island Southeast Asia and a5th millennium B( flexed inhumation from Bubo-1, Illin Island, Mindoro Occidental (Submitted to Antiquity) | The project team was able to travel to Barangay Kawit, Medellin, north of Cebu. This is supported by a MOA between ASP and USC.<br><br>Dr. Eileen Murphy of Queen's University Belfast delivered lectures and a workshop on non-adult human remains. This was attended by ASP students and visiting students from Australia National University. Dr Murphy's involvement in our project is of further success because we are now in discussions between our two departments to develop a Memorandum of Understanding, which will lead to further collaborations and possible opportunities for our students beyond the scope of this initial project.<br><br>One of the Project Research Assistants successfully defended her Master's Thesis proposal entitled "A Study of the Taphonomy of Non-Adult Human Remains from Ille Cave and Rockshelter, Palawan, Philippines". |
| | | | | | | | | | | | | | | | | Hosted an international conference from January 8-9, 2016. Over 60 delegates were in attendance coming from all over SE Asia and nearby regions. It was the first time a conference dedicated to human osteoarchaeology has been hosted in the Philippines. |

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| | | | | | | | | | | | | | | | | Two papers generated by this project were presented last January at the international conference held at ASP, "For the Love of Death: Human Osteoarchaeology in Southeast Asia and the Pacific." |
| | | | | | | | | | | | | | | | | Ms. Villaluz was integral part of the project and as such, will be a collaborator in relevant future publications. Ms. Pena is now working as a lecturer at the UP-ASP and is applying for PhD positions abroad. |
| 8 | Prevalence of mental health problems among Filipino university students: Multi-site, mixed-method research | Del Castillo, Ronald Tolentino | UPMan | | researchers, students, academe | Balik-PhD | 2017 | | | 2019 | | | Ongoing | 2,490,257.60 | | The Project Leader was interviewed by CNN Life Philippines ("Are Philippine universities taking care of their students' mental health?", Anna Bueno. 11 April 2018). The article featured college mental health and made mention of the Diwa project, including a link to the Facebook page. Ms. Anna Bueno first made contact with Dr. Del Castillo through Messenger after seeing the project's Facebook page. This publicity was shared by the UP System Facebook on April 12th and shared by the UP Manila Facebook site on the same day. |
| 9 | Host rock control on epithermal gold mineralization: clues from the Sangilo epithermal vein system and vicinity, Baguio Mineral District, Philippines | Gabo-Ratio, Jillian Aira Sibal | UPD | CS | researchers, students, academe | Balik-PhD | 2017 | January | 16 | 2019 | February | 15 | Ongoing | 2,489,772.00 | | Research collaboration with the Department of Earth Resources Engineering, Kyushu University in Fukuoka, Japan. |
| | | | | | | | | | | | | | | | | The project assistant who is currently enrolled in the MS Geology Program was able to use the Electron Probe Microanalyzer fro the first time in his studey of the host rocks in Sangilo. |
| | | | | | | | | | | | | | | | | JAS Gabo-Ratio, P Aguilera, MAK Yonezu, T Tindell, ES Andal. 2017. Geology and mineralization fo the Sangilo epithermal gold deposit, Baguio Mineral District, Philippines. Presented at the 2017 Goldschmidt Conference, Paris, France. |
| 10 | Molecular-based detection of tick-borne pathogens through PCR and survey of acaricide resistance in cattle ticks in Region IV-A (CALABARZON) Philippines | Galay, Remil Linggatong | UPLB | College of Vet | researchers, students, academe | Balik-PhD | 2016 | August | 15 | 2018 | August | 15 | Ongoing | 2,500,000.00 | | The project leader and project research associate/ research team have attended workshops and seminars related to the project such as the "Installation of T-optical RT-PCR Thermalcycler" last February 7, 2017 at the VMBL, CVM and "Animal Welfare Act and DA-AO 40" held last March 21, 2017 at the Veterinary Teaching Hospital, Maahas Station,UPLB. |
| | | | | | | | | | | | | | | | | The first batch of undergraduate students, Bea Ambita-Salem, Larry Xerxes Capuno Jr., Dawn Maureen Chu, Sidney Lyndon Dolores, Carina Llaneta, Anna Angelica Manalo, and Maria Karla Faye Monreal, who worked on detection of tick-borne pathogens in large ruminants graduated last June 24, 2017. |
| | | | | | | | | | | | | | | | | Two (2) of the students received an award for their undergraduate thesis namely, Larry Xerxes Capuno who got the "Best Undergraduate Thesis Award in Ruminants", and Dawn Maureen Chu who got the "Best Undergraduate Thesis Award in Public Health". |
| | | | | | | | | | | | | | | | | Eight undergraduate DVM students are currently working on detection of tick-borne pathogens in cattle and water buffaloes from Quezon Province (five students), and goats and sheep from Batangas and Laguna provinces (three students) for their thesis, with the project leader as their adviser. Two undergraduate thesis students who were currently recruited and involved in the Phase 2 of the project has started their study working on acaricide resistance. Additional undergraduate students are being recruited to work on other subtopics. |
| 11 | Establishment of a Structured Light Laboratory within the Photonics Research Laboratory of the National Institute of Physics | Hermosa, Nathaniel II Placido | UPD | CS | researchers, students, academe | Balik-PhD | 2015 | July | 27 | 2017 | June | 26 | Ongoing | 2,500,000.00 | ND Bareza Jr., N Hermosa. 2015. Propagation dynamics of vortices in helicon-conical optical beams. Optics Communications 356, 236. | Attended the International Conference on Applied Optics and Photonics, Honver, Germany, with two (2) contributions 2.1. Beam deflection sensitivity of quadrant detector using Bessel Beams (oral) 2.2. Limits of Brewster Imaging (poster). |
| | | | | | | | | | | | | | | | F Steinlechner, N Hermosa, V Pruneri, JP Torres. 2016. Frequency conversion of structured light. Scientific Reports 6, 21390. | Two of research were also presented in the International Conference on Applied Optics and Photonics held in Hanover, Germany. These are titled, "Limits of Brewster Imaging" and "Beam deflection sensitivity of quadrant detector using Bessel beam." The first research is a poster presentation while the second is an oral presentation. Showed a generalized analytical equation for different thin film and substrate index of refraction in the first presentation. This is important for applications in thin film metrology. |
| | | | | | | | | | | | | | | | ND Bareza, N Hermosa. 2016. Subliminal group velocity and dispersion of Laguerre Gauss beams in free space. Scientific Reports 6, 26842. | Second conference presentation is about using a Bessel beam, a structured light to increase the sensitivity of a quadrant detector. Quadrant detectors are used in a wide range of applications from Atomic Force microscopy to beam alignment in industry. |

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| | | | | | | | | | | | | | | | J Narag, N Hermosa. 2017. Response of quadrant detectors to structured beams via convolution integrals. Journal of the Optical Society of America A-Optics Image Science and Vision 34(7), 1212-1216.<br><br>NAF Zambale, GJH Doblado, N Hermosa. 2017. OAM beams from incomplete computer generated holograms projected onto a DMD. Journal of the Optical Society of America B-Optical Physics 34(9), 1905-1911.<br><br>RAP Aguilar, N Hermosa. 2017. Quadrant detector sensitivity and linearity index measurement with Laguerre-Gaussian beams, Physics and Simulation of Optoelectronics Devices XXV, 10098, UNSP 100980V.<br><br>TJT Abregana, NP Hermosa, PF Almoro. 2017. Modeling Aspects in Optical Metrology VI, 10330, UNSP 103300G. | |
| 12 | | Ibana, Joyce Altamarino | UPD | CS | health/medical practitioners, researchers, academe | Balik-PhD | 2015 | February | 1 | 2016<br>2017 | February<br>January<br>(Extension) | 29<br>31 | Completed | 2,500,000.00 | ICVJ Imperial, JA Ibana. 2016. Addressing the antibiotic resistance problem with probiotics: Reducing the risk of its double-edged sword effect. Frontiers in Microbiology 7, 1983.<br><br>J Ibana, M Romero, MN Nicdao. 2017. Therapeutic effects of 1-Methyl Tryptophan and Lactobacillus spp. on AOM/DSS-induced Institute of Cancer Research (ICR) Mouse Model. Inflammatory Bowel Diseases 23, S104-S105. | Two (2) oral Presentations in National Conferences presented with one (1) PhD Biology Student entitled "The antibiotic resistance of Lactobacillus spp. from Philippine food products is due to mutations in parC and gryA genes" and "Finding solutions to the global antibiotic resistance problem by exploiting microbial interactions in different microenvironments".<br><br>Oral presentation in an International Conference entitled "Harnessing beneficial microbes in poultry farming: An alternative approach to reduce the indiscriminate use of antibiotics in the agricultural industry".<br><br>Poster presentation in an International Conference presented by one (1) MS Biology Student entitled "Therapeutic effects of 1-methyl tryptophan and Lactobacillus spp. on AOM/DSS induced Institute of Cancer Research (ICR) Mouse Model."<br><br>Participation of Mr. Michael Angelo Nicdao to the 2015 Philippine Society for Biochemistry and Molecular Biology Convention (3rd Place winner of the best research poster competition)<br><br>Successful completion of the undergraduate thesis of Mr. Michael Jonathan Palad, entitled: "Antimicrobial activity of Lactobacillus isolates against various enteropathogenic bacteria, and the assessment of the mode of inhibition against Shigella sp."<br><br>Participation in the prestigious international conference: 2016 Advances in Inflammatory Bowel Disease (AIBD) conference held in Orlando, Florida last December 8-10, 2016 by Ms. Maevel Romero, MS Microbiology student of the Institute of Biology<br><br>The Project Leader has set up the Immunopharmacology Research Laboratory (IRL), which houses top-of-the line equipment for Cell Biology and Immunology (from USAID-STRIDE) and Microbiology (from OVPAA – UP System). |
| 13 | Organic Components of Submarine Groundwater Discharge in Lingayen Gulf | Jaraula, Caroline Marie B. | UPD | CS | researchers, students, academe, LGUs, community | Balik-PhD | 2016 | September | 13 | 2018 | October | 13 | Ongoing | 2,499,108.00 | | Organized SGD Workshop regarding the use of Durridge RAD7 for Radon-222 monitoring<br><br>Hosted On-the-job-trainees from Adamson University<br><br>Workshop on "Gadgets we can build: water level meter" with Dr. John Burtkenly Ong<br><br>Hosted On-the-job-trainees from UP Integrated School |

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| 14 | Taklong Island Marine Biodiversity Assessments (TIMBA): Integrating biodiversity knowledge at the molecular, organismal, and bioinformatic levels | Malay, Maria Celia Defrance | UPV | CS | researchers, students, academe | Balik-PhD | 2017 | March | 1 | 2019 | March | 31 | Ongoing | 2,500,000.00 | | The project leader presented the research proposal of the the TINMR Protected Area Management Board (PAMB) last February 2017, and also worked to coordinate with various agencies that need to give approval of the research plans.<br><br>More specimens of the semi-terrestrial shrimp Merguia oligodon have been collected. |
| 15 | Materials for Solar Fuels | Mercado, Candy | UPD | COE | researchers, students, academe | Balik-PhD | 2016 | December | 1 | 2018 | January | 9 | Ongoing | 2,500,000.00 | | A graduate researcher has been identified for this project and he will be directly working in the COMSOL simulations.<br><br>A group of six high school students from Quezon City Science High School have been collaborating on the extraction and purification of anthocyanin dye from Komote leaves. |
| 16 | Molecular Biology of Porcine Rotaviruses and Drivers of Infection: Empowering the Animal Health System in Local Backyard farm | Murao, Lyre Annie Espada | UPMin | CSM | researchers, students, academe | Balik-PhD | 2016 | April | 28 | 2018 | April | 28 | Ongoing | 2,500,000.00 | | Hands-on training on statistical analysis, 6 and 24 April 2017. Hands-on training on molecular phylogenetics, 25 and 27 April 2017 (This was attended by 19 undergrad students, five faculty, one RA and the Project Leader).<br><br>Burgos M, Ibañez J, Ates-Camino F, Responte M and Murao LAE. "Non-invasive molecular profiling in bats using mitochondrial cytochrome oxidase I gente." (partially funded by BPhD)<br>*Best Paper, Biodiversity and Environment Category, 2018 Regional Research Congress, University of Mindanao, Davao City, March 14, 2018.<br><br>The Project Leader was invited to speak on her work with viruses in the TEDx Roxas St. at Marco Polo Hotel, Davao City on June 5, 2018. The findings of this research will be the highlights of the presentation entitled "If Poop Could Talk".<br><br>Bacus M, Otero MCB, Alviola P IV, Murao LAE. "Molecular surveillance of Rotavirus A in Backyard Pig Farms in Davao City" (fully funded by BPhD)<br>* Poster presetnation, 2017 OVPAA Research Symposium, UP Diliman, Quezon City November 20-21, 2017.<br>*2nd Place, Research Poster Competition, 22nd Mindanao Annual Meeting and Scientific Cinvetion of the Philippine Society for Microbiology Mindanao Chapter, Davao City, November 17-18, 2017.<br>*3rd Place, Research Poster Competition, PSBMB Mindanao Scientific Conference, General Santos City, October 26-27, 2017.<br><br>The project has supported the thesis work of nine (9) undergraduates of Biology and one (1) from Applied Mathematics, nine (9) of which are graduated in the commencement exercises in June 2018. |
| 17 | In-depth systematic study of fermented foods in the Philippines | Navarro, Richard Ragudo | UPLB | CA | food technologists/ researchers, academe, food manufacturing industry | Balik-PhD | 2016 | September | 14 | 2018 | October | 14 | Ongoing | 2,500,000.00 | | Successful collection of the following samples for the isolation of LAB and AAB from different provinces in Central and Northern Luzon. |
| 18 | Detection of foodborne pathogens along the supply chain of fresh oysters and mussels and its culture environment | Nuñal, Sharon Nonato | UPV | College of Fisheries and Ocean Sciences | food technologists, seafood canning industry, researchers | Balik-PhD | 2016 | May | 5 | 2018 | May | 5 | Ongoing | 2,500,000.00 | | The project currently has one full-time research assistant for Year 1. The three undergraduate students (AY 2016-2017) supported by the project have already finished their individual studies with hard-bound thesis<br><br>The DA-Biotech scholars assigned to the Project Leader (SNNUÑAL) has worked on experiments involving DNA extraction from bacterial isolates and tissue samples, PCR amplification, gel electrophoresis and processing<br>of results (DNA sequences).<br><br>The study was one of the three studies featured in<br>the Media Brunch Reception for Science Journalists with the theme "Blue Economy for Sustainable<br>Seas" organized by the Communicating Science and Technology Research and Development at UP<br>(CoST UP) Program last December 6, 2017. |

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| 19 | Investigation of the Redox Potentials of Fe-Humic Acid Complexes as a Potential Additive to Increase Bio availability of Iron in Biofloc Systems | Ortillo, Danilo Octaviano | UPV | CAS | researchers, students, academe | Balik-PhD | 2017 | August | 2 | 2019 | August | 1 | Ongoing | 2,500,000.00 | | A journal article is currently in the works to be written and submitted before the end of the year to a peer-reviewed journal for publication. |
| 20 | Atomic-scale understanding of the interaction of hydrogen (H) atom and carbon monoxide (CO) molecule on copper-palladium (CuPd) surface: An application to biomass-based renewable energy source | Padama, Allan Abraham B. | UPLB | Institute of Mathematical Sciences and Physics | alternative energy research, advanced materials research, students, academe | Balik-PhD | 2015 | August | 10 | 2017 | July | 19 | Completed | 2,484,172.00 | AAB Padama, H Nakanishi, H Kasai. 2015. Quantum states of hydrogen atom on Pd(1 1 0) surface. Applied Surface Science 359, 687-691. | Research collaboration with other research groups was established. |
| | | | | | | | | | | | | | | | RL Arevalo, MCS Escaño, AAB Padama, H Kasai. 2016. Adsorbate-induced demagnetization: borohydride on magnetic substrates. International Journal of Philippine Science and Technology 9, 10–14. | The results of the project are presented in national and international conferences. |
| | | | | | | | | | | | | | | | AAB Padama, APS Cristobal, JD Ocon, WA Diño, H Kasai. 2017. Effects of Adsorbates (CO, COH, and HCO) on the Arrangement of Pd Atoms in PdCu(111). The Journal of Physical Chemistry 121 (33), 17818–17826. | Three undergraduate students under the supervision of the principal investigator of this project successfully defended their undergraduate thesis. Their works and the results of this project are presented at the 35 th Samahang Pisika ng Pilipinas Physics Conference held in Bayfront Hotel Cebu, Cebu City, on 7-10 June 2017. |
| | | | | | | | | | | | | | | | AAB Padama, RAB Villaos, JR Albia, WA Diño, H Kasai, H Nakanishi. 2017. CO-induced Pd segregation and the effect of subsurface Pd on CO adsorption on CuPd surfaces. Journal of Physics: Condensed Matter 29, 025005. | Padama, A.A.B., Albao, M.A., Villaos, R.A.B., Albia, J.R., Diño, W.A., Nakanishi, H., Kasai, H. (2016). Interaction of CO molecule with metal surfaces. Presented at the 8th Asian Computational Materials Design® Workshop in De La Salle University - Science and Technology Complex, Canlubang, Laguna. |
| | | | | | | | | | | | | | | | B Chantarmolee, AAB Padama, H Nakanishi, H Kasai, S Ogura, K Fukutani. 2017. CO adsorption on (110)-(1 × 2) missing-row reconstructed surfaces of Pd, Au, and Pd3Au: Electronic structures and vibrational frequencies. Journal of the Physical Society of Japan 86(4), 044712. | Villaos, R.A.B., Padama, A.A.B., Albia, J.R. (2016). Adsorption of CO on CuPd surfaces: A DFT – based study. Presented at the 2nd Workshop on Theories in Quantum Phenomena and Condensed Matter Physics in University of the Philippines Los Baños, Los Baños, Laguna. |
| | | | | | | | | | | | | | | | MA Albao, AAB Padama. 2017. CO absorption on W(100) during temperature-programmed desorption: A combined density functional theory and kinetic Monte Carlo study. Applied Surface Science 396, 1282–1288. | Padama, A.A.B., Villaos, R.A.B., Albia, J.R., Diño, W.A., Nakanishi, H., Kasai, H. (2016) Converting agricultural waste to fuel: An atomic scale perspective (The interaction of hydrogen atom and carbon monoxide molecule on copper-palladium surface). Presented at the UP Knowledge Festival: "Utak at Puso para sa Bayan" in Tagaytay City. |
| | | | | | | | | | | | | | | | | Padama, A.A.B. (2016) Interaction of CO on CuPd Surfaces: A DFT-based Investigation. Presented at the International Workshop on Quantum Engineering Design: Materials Design and Realization in Osaka University, Osaka, Japan. |
| | | | | | | | | | | | | | | | | Villaos, R.A.B., Padama, A.A.B., Albia, J.R. (2016) Atomic scale understanding of interaction of H atom and CO molecule on CuPd Surface: An Application to Biomass- based Renewable Energy. Presented at the International Workshop on QuantumMaterials Science and Design for Innovative Nano- and Green Energy Devices and Life Sciences of the Osaka University, Osaka, Japan. |
| | | | | | | | | | | | | | | | | Padama, A.A.B., Nakanishi, H., Kasai, H. (2015) Hydrogen atom quantum diffusion on Pd(110) surface. Presented at the 17 th Samahang Pisika ng Visayas at Mindanao National Physics Conference (17 th SPVM) / 2015 International Meeting for Optical Manipulations in Complex Systems / 2015 International Conference on Applied Materials and Optical Systems of the Samahang Pisika ng Visayas at Mindanao, Cavite State University, Indang, Cavite, Philippines |
| | | | | | | | | | | | | | | | | Cristobal, A.P.S., Padama, A.A.B. (2017). Adsorption of CO, COH and HCO on CuPd Surfaces: A DFT study. Presented at the 8th Jagna International Workshop: Structure, Function and Dynamics from nm to Gm of Central Visayan Institute Foundation, Inc., Jagna, Bohol, Philippines. |
| 21 | A cross-country reserach on natural disaster and risk management | Pajaron, Marjorie C. | UPD | School of Economics | risk and disaster management, disaster mitigation programs, local household, policy-makers | Balik-PhD | 2016 | September | 13 | 2018 | October | 13 | Ongoing | 2,492,000.00 | Pajaron MC . 2016. The role of remittances as a risk-coping mechanism: Evidence from agricultural households in rural Philippines. Asian and Pacific Migration Journal 26, 3-30. doi:10.1177/0117196816680625 | Traveled and met with experts in the field of natural disaster, risk-coping, poverty, and applied economics (including previous colleagues and mentor at Stanford University).<br>1. Presentation in London<br>2. Presentation in Hongkong<br>3. Presentation in Peking University<br>4. Meeting and conference at Hitotsubashi University, Tokyo, Japan |

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| 22 | Petrology and geochemistry of mantle xenoliths: Implications on the evolution of the mantle wedge beneath the Philippine island arc system | Payot , Betchaida D. | UPD | CS | Geologists, resource potential and geohazards studies, researchers | Balik-PhD | 2015 | March | 1 | 2017 | March<br>September<br>(Extension) | 31<br>30 | Ongoing | 2,499,636.00 | GTV Valera, BD Payot, S Arai, M Takeuchi, S Ishimaru, A Tamura. Petrological records of subarc processes and buoyant plateau subduction in the xenoliths from Sabtang island of the Babuyan segment, Luzon arc. Manuscript submitted to Lithos journal. | Graduate students presented papers in national and international conferences.<br><br>EG Gadot Jr., BD Payot, T Morishita, S Arai, T Mizukami. Origin of dunite xenoliths from Mount Pinatubo, Philippines: An insight into upper mantle processes beneath a volcanic front (manuscript in preparation). |
| 23 | Understanding cell physiology through characterization of the physical properties of cells: an atomic force microscopy perspective. | Prieto, Eloise Infante | UPD | CS | Pathologists, oncologists, medical researchers | Balik-PhD | 2015 | March | 1 | 2017<br>2018 | March<br>January | 31<br>31 | Ongoing | 2,500,000.00 | M Vasquez Jr., E Prieto, M Wada, Motoi. 2018. Radio-Frequency plasma induced biocompatibility of polyimide substrates. Plasma Medicine, 8(1):35-44 | The Nanobiotechnology Laboratory has two research assistants capable of performing AFM imaging and analysis using the XE-Bio AFM. They were able to provide AFM service through the Multi-Dimensional Imaging Center of the Technology Incubation Core Facility of the College of Science.<br><br>Project Collaboration: Visiting Researcher, Approval of Hitachi Global Research Fellowship, Kenichi Yoshikawa Lab through the Faculty of Life and Medical Sciences, Doshisha University, Kyoto, Japan.<br><br>Project Collaboration: Visiting Professor, Talks have been initiated for a collaborative project, Dr. Mel Bacabac of the Physics Department of University of San Carlos, Talamban, Cebu City<br><br>The Balik-PHD program was instrumental in the establishment and expansion of the Nanobilogy Laboratory (NBL) at the NIMBB. This has contriburted greatly to an in-house research project aiming to understand the nuclear compation of Archaea.<br><br>The NBL has mentored five undergrad students, and is currently mentoring three undergraduate and two graduate students. |
| 24 | Coping Strategies to Natural Disasters: Micro-Meso-Macro interactions and consequences | Ravago, Majah-Leah Villar | UPD | School of Economics | local government units, disaster management agencies, general public | Balik-PhD | 2015 | September | 15 | 2017<br>2018 | September<br>February | 14<br>28 | Ongoing | 2,499,894.00 | | Developed and programmed the survey software, based on Microsoft Access.<br><br>As of July 31, fieldwork has been completed in 37 out of 43 provinces, corresponding to 165 interviews. |
| 25 | Discovery of small molecule therapeutics from cyanobacteria | Salvador-Reyes, Lilibeth Apo | UPD | CS | Biomedical reseachers, students, academe | Balik-PhD | 2014 | August | 28 | 2017<br>2018 | August<br>February<br>(Extension) | 27<br>28 | Ongoing | 2,500,000.00 | | Prior Informed Consent (PIC) from Alaminos, Bani, and Bolinao - Pangasinan, and Tanza, Cavite were endorsed to Department of Agriculture – Bureau of Fisheries and Aquatic Resources (DA-BFAR). The Memorandum of Agreement (MOA) from DA-BFAR was obtained, submitted for legal review and is currently being signed by the UP Diliman Chancellor and Secretary of DA. Once the MOA is finalized, Gratuitous Permit (GP) will also be released by DA-BFAR.<br><br>Presentation: J.D. Batucan was accepted for poster presentation on the 32nd Philippine Chemistry Congress. |
| 26 | Microbial community shifts and enzymatic degradation rates in sediments influenced by plant-based fish feeds | Santander-de Leon, Sheila Salarda | UPV | College of Fisheries and Ocean Sciences | marine scientists, environmental scientists researchers | Balik-PhD | 2016 | February | 23 | 2018 | February | 22 | Ongoing | 2,500,000.00 | | Collaboration with the grantee's previous professor in Japan (Dr Hiroto Maeda) in terms of provision of materials, technical advice and future training and some sample analyses in Kagoshima University.<br><br>The project leader currently mentors 3 undergraduate thesis students and 2 MSc thesis students who are supported by the project's newly acquired supplies and equipment. A number of biotech scholars (~5) have also been trained in the lab. |
| 27 | Development of a Plasma Device and an Ion Source System for the Modification of Surfaces | Vasquez, Magdaleno Jr. R. | UPD | COE | Materials researchers, students, academe | Balik-PhD | 2014 | October | 1 | 2016<br>2017 | September<br>March<br>(Extension) | 30<br>31 | Completed | 2,500,000.00 | MR Vasquez Jr, M Wada. 2016. Extraction characteristics of a low-energy ion beam system with a remote plasma chamber. Review of Scientific Instruments 87, 02B924. | The grant was able to restore a dilapidated vacuum thermal evaporator. |

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| | | | | | | | | | | | | | | | | CMD Cagomoc, MR Vasquez Jr. 2017. Enhanced Chromium Adsorption Capacity via Plasma Modification of Natural Zeolites. Japanese Journal of Applied Physics 56, 01AF02. | The laboratory also hosts graduate and undergraduate courses on vacuum technology, thin films, and electronic materials. MSE 214 (LaboratoryModule in Vacuum Technologies and Thin Film Deposition) courses were held at PMIL for the past 2 years. In the laboratory, students can conduct their course- related activities such as running their experiments. To date, around 40 student sunder the MS MSE program used the facility. Also, undergraduate courses such as MatE 121.1 (Electronic Materials Laboratory) used the facility for instructional laboratory work. Last semester, 38 undergraduate students conducted their experiments in the laboratory. |
| | | | | | | | | | | | | | | | | KLM Taaca, MR Vasquez Jr. 2017. Fabrication of Ag-exchanged zeolite/chitosan composites and effect of plasma treatment. Microporous and Mesoporous Materials 241, 383-391. | Collaboration with Plasma Science Laboratory of Doshisha University and with Plasma Physics Laboratory of the National Institute of Physics (NIP) is being undertaken. Joint research such as in plasma physics and plasma-material interactions has commenced. |
| | | | | | | | | | | | | | | | | KLM Taaca, EM Olegario, MR Vasquez, Jr. 2017. Antibacterial Properties of Ag-exchanged Philippine Natural Zeolite-Chitosan Composites. Advance Materials for Sustainability and Growth 1901, UNSP 030015-1 | Exploring Philippine Biodiversity for Anti-senescent Interventions. 2nd Annual Balik Scientist Program (BSP) Convention. "Strengthening Science, Technology and Innovation Capacity for Sustainable Countryside Development". November 18, 2016. Embassy Ballroom, Hotel Jen, Roxas Blvd., Pasay City, Philippines. |
| | | | | | | | | | | | | | | | | KLM Taaca and M. Vasquez Jr. 2017. Fabrication of Ag-exchanged zeolite/chitosan composites and effect of plasma treatment, Microporous and Mesoporous Materials 241, 383. | "An approximately 100 m2 area was renovated to house different plasma equipment." |
| | | | | | | | | | | | | | | | | AP Osonio, MR Vasquez Jr. 2018. Plasma-assisted reduction of silver ions impregnated into a natural zeolite framework. Applied Surface Science 432, 156-162. | An experimental system with parts fabricated in Japan was brought and assembled. The laboratory also refurbished and restored a radio-frequency plasma etcher, a vacuum evaporator and several rotary pumps that can be used for different experiments. |
| | | | | | | | | | | | | | | | | FAD Hubilla, GR Panghulan, J Pechardo, MR Vasquez Jr. 2018. Mechanical properties of epoxy composites with plasma-modified rice-husk-derived nanosilica, Japanese Journal of Applied Physics 57(1), 01AG07. | The Balik-PhD grant was used to prepare a research facility that houses the experimental system. An approximately 100 m2 area was renovated to house different plasma equipment. |
| | | | | | | | | | | | | | | | | MGC Sales, MSDC Dela Vega, MR Vasquez, Jr. 2018. Properties of spray-deposited liquid-phase exfoliated graphene films. Japanese Journal of Applied Physics 57(1), 01AF06 | INVENTION DISCLOSURES<br>K. Taaca and M. Vasquez Jr., Chitosan/silver-exchanged zeolite composite films<br>and a process of producing and modifying the same (under evaluation by OVCRD).<br>M. Vasquez Jr. and C. Cagomoc, Surface Activation of Zeolitic Materials via Plasma<br>Irradiation and its Application thereof (under evaluation by OVCRD). |
| | | | | | | | | | | | | | | | | RGB Madera, MM Martinez, MR Vasquez Jr. 2018. Effects of RF plasma treatment on spray-pyrolyzed copper oxide films on silicon substrates. Japanese Journal of Applied Physics 57(1) 01AB05. | |
| 28 | Self-force and radiation-reaction in novel settings | Vega, Michael Francis Ian II G. | UPD | CS | researchers, students, academe | Balik-PhD | 2017 | March | 6 | 2018 | April | 5 | Ongoing | 2,500,000.00 | KS Revealar and I Vega. 2017. Overcharging higher-dimensional black holes with point particles. Physical Review D 96(6), 064010. | Four Master's theses in Physics have been successfully defended by members of the group in the past 10 months. Apart from the Project Leader, the current group is now composed of 5 PhD students, 4 MS students, and 7 BS students. There are 9 BS students at the "apprenticeship" stage of their membership application. |
| | | | | | | | | | | | | | | | | | Four Master's theses in Physics have been successfully defended by members of the group since the<br>beginning of the Project. |
| | | | | | | | | | | | | | | | | | 5 PhD students, 4 MS students, and 7 BS students and 9 BS students are currently mentored. |
| 29 | Phytosterols on cellular senescence and senescence-associated inflammation | Velarde, Michael C. | UPD | CS | materials researchers, students, academe | Balik-PhD | 2016 | July | July | 2018 | July | 27 | Ongoing | 2,500,000.00 | CMD Marquez, JA Ibana, MC Velarde. 2017. The female reproduction and senescence nexus, American Journal of Reproductive Immunology 77(5), e12646. | Murine Model of Aging: Mitochondrial oxidative damage in mice as a model of skin aging. 29th Annual Scientific Conference of the Philippine Association For Laboratory Animal Science (PALAS). May 18-19, 2017. Crowne Plaza Hotel, Quezon City, Manila. [Plenary Speaker] |

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| | | | | | | | | | | | | | | | CMD Marquez and MC Velarde. 2017. Senescent Cells as Drivers of Age-Related Diseases, chapter 16, pp 305-335 of the book, "Aging: Exploring a Complex Phenomenon". | Murine Model of Aging: Mitochondrial oxidative damage in mice as a model of skin aging. 29th Annual Scientific Conference of the Philippine Association for Laboratory Animal Science (PALAS). May 18-19, 2017. Crowne Plaza Hotel, Quezon City, Manila. [Plenary Speaker] |
| | | | | | | | | | | | | | | | | Cellular Aging and Its Contribution to Global Burden of Disease. 52nd Biology Teachers Association of the Philippines (BIOTA) Annual National Convention and Scientific Sessions. April 8, 2017. Philippine Normal University, Ermita, Manila [Plenary Speaker] |
| | | | | | | | | | | | | | | | | Modulating the Senescence-associated Secretory Phenotype. The first bilateral symposium between Academia Sinica and University of the Philippines Diliman. December 13-15, 2016. Academia Sinica, Taipei, Taiwan. |
| | | | | | | | | | | | | | | | | Impact of Environmental Stress on Cellular Aging. 36th Annual Convention of the Philippine Environmental Mutagen Society (PEMS). November 24-25, 2016. University of Northern Philippines, Vigan City, Philippines. |
| | | | | | | | | | | | | | | | | Exploring Philippine Biodiversity for Anti-senescent Interventions. 2nd Annual Balik Scientist Program (BSP) Convention. "Strengthening Science, Technology and Innovation Capacity for Sustainable Countryside Development". November 18, 2016. Embassy Ballroom, Hotel Jen, Roxas Blvd., Pasay City, Philippines. |
| | | | | | | | | | | | | | | | | Mitochondrial Dysfunction-Associated Senescence and the Secretory Phenotype.1st International and 7th Annual Convention and Scientific Meeting of the Philippine Society for Cell Biology. October 20-21, 2016. De La Salle University, Manila, Philippines. |
| | | | | | | | | | | | | | | | | CO2 incubator along with N2 and CO2 tanks have been installed in the lab. |
| | | | | | | | | | | | | | | | | CMD Marquez and MC Velarde. 2017. Senescent Cells as Drivers of Age-Related Diseases, chapter 16, pp 305-335 of the book, "Aging: Exploring a Complex Phenomenon". |
| 30 | Subsistence Strategies and Prey Spectra of First Humans in the Philippines | Volmer, Rebekka | UPD | ASP | archaeologists, paleontologists, researchers | Balik-PhD | 2015 | November | 27 | 2017<br>2018 | November<br>May<br>(Extension) | 26<br>31 | Ongoing | 2,499,744.00 | R Volmer, C Hertler. 2016. The effect of competition on shared food resources in carnivore guilds. Quaternary International 413 B, 32 - 43. | The theoretical research on competition relations was done by the project leader, with consultancy of Dr. Christine Hertler from the Research Senckenberg Institute in Frankfurt Germany. |
| | | | | | | | | | | | | | | | R Volmer, E Hölzchen, A Wurster, MR Ferreras, C Hertler. 2017. Did Panthera pardus (Linnaeus, 1758) become extinct in Sumatra because of competition for prey? Modeling interspecific competition within the Late Pleistocene carnivore guild of the Padang Highlands, Sumatra. Palaeogeography, Palaeoclimatology, Palaeoecology 487, 175-186. | The project leader was invited to present her research entitled "Subsistence Strategies and Prey Spectra of First Humans in the Philippines" and give a lecture during the symposium and international School of Quaternary History in Nanjing, China, held during 22-30th of April 2016. |
| | | | | | | | | | | | | | | | | The symposium and course was developed from the European "Erasmus Mundus program Quaternary and Prehistory", and was the first time to be held outside of Europe. |
| | | | | | | | | | | | | | | | | First research outputs were presented in 2nd international conference SEAMEO SPAFA, Regional Centre for Archaeology and Fine Arts, Bangok, Thailand |
| | | | | | | | | | | | | | | | | The project leader was the only participant from UP Diliman and presented outputs of the project in frame of the presentation "Did saber-tooth cats become extinct because of early Homo?" |
| | | | | | | | | | | | | | | | | First research results are published in an ISI-journal with an impact factor of 2.942 |
| | | | | | | | | | | | | | | | | AS Mijares, F Détroit, R Grün, R Volmer, R Rabett, R Dizon, T Clark, L Kinsley, E Robles, A Tiauzon, M Lara, K Manalo, D Satumbaga, PJ Piper. Homo luzonensis and the Archaeological Record of Callao Cave, Northeastern Luzon Philippines. Nature. (currently under review) |

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| 31 | Tapping into novel fungal endophytes for enzymes with biotechnology applications | Yu, Eizadora Torres | UPD | CS | Biotechnology and biotechnological applications, researchers, academe | Balik-PhD | 2015 | February | 1 | 2017 | February<br>December<br>(Extension) | 28<br>31 | Completed | 2,500,000.00 | CJO Bacal, ET Yu. 2017. Cellulolytic Activities of a Novel Fomitopsis sp. And Aspergillus tubingensis isolated from Philippine Mangroves. Philippine Journal of Science 146 (4), 403-410. | Key project personnel (i.e., RA and graduate student) attended a three day workshop (July 25 – 27, 2015) on DNA Barcoding held at the Institute of Biology, UPD.<br><br>One of the students mentored was awarded Best BS Chemistry Thesis in 20169. |