Balik PhD Grant

Data as of 05 June 2020

Project Title	Name of Proponent	CU	Unit	Beneficiaries	Funding Source	Duration (Years)	Start	End	Status	Total Program Budget	Publications	No. of Mentored / Graduated Students			Other Outputs
												BS/BA	MS/MA	PhD	
Development of a Convertible in Transmission-Reflection Mode Femtosecond Second Harmonic Generation Microscope/Spectroscope (TR-SHGM/TR-SHGS) for Surface Studies	Martinez, Imee Su	UPD	CS	Researchers, academe	Balik-PhD	2	2013	2015	Completed	2,500,000.00	Tiongson, J. A., Bruzon, D. V., Tapang, G. A., Martinez, I. S. 2018. Syntheses and Properties of Methoxy and Nitrile Functionalized Imidazolium Tris (pentafluoroethyl) trifluorophosphate Ionic Liquids. *Journal of Chemical & Engineering Data* 63(5), 1135-1145. doi: 10.1021/acs.jced.7b00281 Tiongson J.K.A., Aganda K.C.C., Bruzon D.A. V., Guevara A.P., Basilia B.A., Tapang G.A., Martinez I.S.2020. Exploring the corrosion inhibition capability of FAP-based ionic liquids on stainless steel: FAP-based ILs for Corrosion Inhibition. Royal Society Open Science. 10.1098/rsos.200580rsos200580	1			Poster presentation: "Task-Specific FAP Ioninc Liquids for Carbon Capture" , 2nd International Conference on the Science and Engineering of Materials, Kuala Lumpur, Malaysia, November 16-18, 2015 (Best Oral Presentation Award) Poster Presentation: "Synthesis and Characterization of FAP Ionic Liquids for Carbon Capture", 4th Material of Value and Essence Symposium, UP Diliman, July 29-30, 2015 Oral Presentation: "Demonstration of Second Harmonic Generation Microscopy ", 33rd Physics Congress of the Samahang Pisika ng Pilipinas, University of Northern Philippines, Vigan City , 3-6 June 2015 Poster Presentation: "Surface Tension Measurement of Task-Specific Ionic Liquids for Carbon Capture", 30th PCC Davao, April 14-20, 2015 Oral Presentation: "Surface Studies of Task-specific Ionic Liquids for Carbon Capture Using Sum Frequency Generation Spectroscopy", 8th Asian Conference on Ultrafast Phenomena, Kobe, Japan, January 20-22, 2014 Oral Presentation: "Chemistry in Action: A look at the Current Research Trends in the Institute of Chemistry, UP Diliman", 2013 CNU International Symposium Series on Natural Sciences , Daejon, Korea, May 22-24, 2013 Tiongson, J.K., Bruzon, D. A., Berenguel M., Tapang, G., Martinez, I. S., Functionalized Imidazolium-based FAP Ionic Liquids: Synthesis and Properties, Chemical and Engineering data Bruzon, D. A., Tiongson J. K., Tapang, G., Martinez, I. S., Catalytic CO2 Reduction in Cation and Anion-Functionalized Ionic Liquids, Journal of Electroanalytical Chemistry Martinez, I. S., A Closer Look at Interface Using Second-Harmonic Generation Spectroscopy, Journal of Spectroscopy Ugalino, R., Martinez, I. S., Phenomenological Treatment of SHG Using Counter-propagating Geometry, Journal of Molecular Spectroscopy
Spaces in Transition: Mapping Manila's Peri-Urban Fringe	Ortega, Arnisson Andre C.	UPD	CSSP	Researchers, academe	Balik-PhD	2	2013	2015 With Extension	Completed	2,500,000.00	Ortega A. A., Acielo, J. M., Hermida, M. C. 2015. Mega-regions in the Philippines: Accounting for special economic zones and global-local dynamics. *Cities 48*, 130. Ortega, A. A.2016. Manila's metropolitan landscape of gentrification: Global urban development, accumulation by dispossession & neoliberal warfare against informality. *Geoforum 70*, 35.		2		2014 Ugnayan Pang-Agham Tao Conference and the 2015 Philippine Population Association Conference. Ethnographies, an interactive map of the peri-urban fringe and information about the project were exhibited at the Vargas Museum on March 13, 2015 as part of the "Oikos (Ecology and Economy) Art Exhibit". The organizers of the same event also broadcasted the interviews of peri-urban residents and streamed a live and recorded interview with the central team on Radio Itim, an online radio platform. On June 27, 2015, the project was featured on the Philippine Daily Inquirer in an article entitled, "Peri-urban migration results in various forms of spatial mismatch". The project is currently featured on the Relational Poverty Network website and the UP Population Institute website.
Development of a Terahertz Time-Domain Spectroscopy (THz-TDS) to evaluate new THz emitters and detectors, and for THz spectroscopic analysis of semiconductor devices, pharmaceuticals testing, and other materials testing applications	Estacio, Elmer Surat	UP	CS	Researchers, academe	Balik-PhD	2	2014	2016	Completed	2,500,000.00	Balgos M. H., Afalla, J. P., Lumantas, S., Estacio, E., Salvador, A., & Somintac, A. (2015). Temperature behavior of unstrained (GaAs/AlGaAs) and strained (InGaAs/AlGaAs) quantum well bandgaps. *Optical and Quantum Electronics 47,* 3053-3063.		10	2	The two studies presented in international conferences were published in SCOPUS-indexed journals. Three students whose theses/dissertation topics were partially derived from work covered by this project successfully defended their theses last December 2015.

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												BS/BA	MS/MA	PhD	
											Faustino, M. B., Lopez Jr, L. P., Afalla, J. P., Muldera, J., Felix, M. J., Salvador, A. A., Somintac, A. S., & Estacio, E. S. (2015). *I*ncreased terahertz emission from SI-GaAs desposited with sub-wavelength spacing metal line array. IRMMW-THz 2015 - 40th Internatinal Conference on *Infrared, Millimeter and Terahertz Waves*, Article number 7327918.				Prototype terahertz photoconductive antenna detector based on a low-temperature-grown gallium arsenide substrate, in proceedings to the 33rd Samahang Pisika ng Pilipinas Conference, 2015.
															Enhanced terahertz emission of semi-insulating gallium arsenide with metal grating structures, in proceedings to the 33rd Samahang Pisika ng Pilipinas Conference, 2015.
															Temperature-dependent photoluminescence studies of MBE-grown InAs/GaAs quantum dots, in proceedings to the 33rd Samahang Pisika ng Pilipinas Conference, 2015.
											Presto, J. M., Prieto, E. P., Omambac, K. M., Afalla, J. C., Lumantas, D. O., Salvador, A. A., Somintac, A. S., Estacio, E. S, Yamamoto, K., & Tani, M. (2015). Confined photocarrier transport in InAs pyramidal quantum dots via terahertz time-domain spectroscopy. *Optics Express 23*, 14532-14540. doi:10.1364/OE.				Externally applied magnetic field-effects on the terahertz emission from p-type and n-type InAs wafers, in proceedings to the 33rd Samahang Pisika ng Pilipinas Conference, 2015.
															Investigation of terahertz mechanism in GaAs-on-Si (100), in proceedings to the 33rd Samahang Pisika ng Pilipinas Conference, 2015.
											Faustino, M. B., Lopez Jr, L. P., Afalla, J. P., Muldera, J., Felix, M. J., Salvador, A. A., Somintac, A. S., & Estacio, E. S. (2016). Enhanced terahertz emission from SI-GaAs with a sub-wavelength 1D metal array. 2015 11th Conference on *Lasers and Electro-Optics Pacific Rim*, CLEO-PR 2015, Article number 7376387. De Los Reyes A., Bardolaza H., Vasquez J.D., Cabello N.I., Lopez L., Jr., Chang C.-Y., Somintac A., Salvador A., Jang D.-J., Estacio E. 2020.Temperature-dependent terahertz time-domain spectroscopy of 3D, 2D, and 0D semiconductor heterostructures. Journal of Materials Science: Materials in Electronics. 10.1007/s10854-020-03188-y				Enhanced terahertz emission from SI-GaAs with a sub-wavelength 1D metal array. Conference on Lasers and Electro-Optics/Pacific Rim. Optical Society of America, 2015. 10.1109/CLEOPR. 2015.7376387
															Increased terahertz emission from SI-GaAs deposited with sub-wavelength spacing metal line array. 2015 40th International Conference on Infrared, Millimeter, and Terahertz waves (IRMMW-THz). IEEE, 2015. 10.1109/IRMMW-THz. 2015.7327918
															Dynamics of Optically-Generated Carriers in Si (100) and Si (111) Substrate-Grown GaAs/AlGaAs Core-Shell Nanowires. Nanoscale research letters 10.1 (2015): 1. 10.1186/s11671-015-1050-9
															Confined photocarrier transport in InAs pyramidal quantum dots via terahertz time-domain spectroscopy. Optics Express 23.11 (2015): 14532-14540.10.1364/OE.23.014532
Exploring transcriptome dynamics in marine organisms in response to environmental challenges	Conaco, Cecilia Gastardo	UPD	CS	Researchers, academe	Balik-PhD	1	2013	2014	Completed	2,500,000.00	Conaco, C., Tsoulfas, P., Sakarya, O., Dolan, A., Werren, J., & Kosik, KS. (2016). Detection of prokaryotic genes in the Amphimedon queenslandica genome. *PLOS One*, 11eo151092.				Exploring Dynamic Gene Regulation in the Sponge. Presented at the 3rd Annual World Congress of Marine Biiotechnology in Hangzhou, China (2013)
											Guzman, C., & Conaco, C. (2016). Comparative transcriptome analysis reveals insights into the streamlined genomes of haplosclerid demosponges. *Scientific Reports 6*, 18774.				Exploring the Molecular Response to thermal stress in two haplosclerid sponges. Presented at 12th National Symposium on Marine Science of the Philippine Association for Marine Science in Tacloban, Leyte (2013)
											Guzman, C., & Conaco, C. 2016. Gene expression dynamics accompanying the sponge thermal stress response. *PLOS One 11* (10), e0165368. doi10.1371/journal.pone 0165368.				De nove assembly and characterization of the transcriptome of the two thermally stressed marine sponges. Presented at the IOC /WESTPAC 9th International Scientific Symposium in Nha Trang, Vietnam (2014).
															Evolutionary relationships of Hsp70 genes in marine sponges and their differential expression during thermal stress. Presented at the IOC/WESTPAC 9th International Scientific Symposium in Nha Trang, Vietnam (2014).
Quantum entanglement in low-dimensional systems: quantum spin chains and continuum systems	Paraan, Francis Norman Claridades	UPD	CS	Researchers, academe	Balik-PhD	2	2013	2015	Completed	1,914,000.00	Puspus, X. M., Villegas, K. H., & Paraan, F. N. C. (2014). Entanglement spectrum and number fluctuations in the spin-partitioned BCS ground state. *Physical Review B 90,* 55123.	7	5		Two (2) MS Graduates presented the result of their research quantum quenches at Physics conference in Vigan, Tokyo, and Stellenbosch.
											Seroje, K. K. R., dela Rosa, R. S., Paraan, F. N. C. (2015). Effective thermodynamics of isolated entangled squeezed and coherent states. *European Journal of Physics 36*, 55051.				The research of the three (3) BS Graduates has been presented in National Physics conferences held in Cebu, Diliman, and Vigan.

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												BS/BA	MS/MA	PhD	
											Bayocboc Jr., F. A., Paraan, F. N. C. (2015). Exact work statistics of quantum quenches in the anisotropic XY model. *Physical Review E 92*, 32142.				The research of One (1) BS Graduate on quantum entanglement in superconductors has been cited in the 2015 BPI-DOST Science Awards as one of the eight (8) top projects in the National Finals. His work has been published in Physical Review B. The research of One (1) BS Graduate on the analogies between concepts in statistical mechanics and quantum information theory has been published in the European Journal of Physics. Plenary talks: Semiconductor laser based Doppler lidar for wind energy applications; Search for drifting constants and fifth forces from precision measurements on molecules; Entangled statistical mechanics and Parallel computing; Measuring the physics that drives DNA-protein interactions; Pinpoint X-ray cancer therapy system and DNA damage/repair analysis system; Seeing the invisible with gravitational lensing; Super-Bodies Impacts in Jupiter Oral Presentations: Photonics, Terahertz, and Nanotechnology Tacbad, R. C., Paraan, F. N.C., Parallel Speed-up and Efficiency in Single Loop Sums and Matrix Multiplication Suico, J., Banzon, R., Villagonzalo, C., Characteristics of non-spanning clusters in a percolating two-dimensional square lattice. Seroje, K. R., Paraan, F., N.C., Entanglement spectrum and entropy of two-mode squeezed vacuum states. Puspus, X. M., Paraan, F. N.C., Entanglement entropy of impenetrable bosons in 1D: Effects of block length and boundaries Tabernilla, R.C. M., Sanchez, J.K. R., Dizon, J.G. A., Paraan, F. N.C., Speed-up and Efficiency of Parallelized Monte Carlo Integration on Homogeneous and Heterogeneous Clusters Tacbad, R. C., Dizon, J.G. ALateral Motion of a Suspended Spherical Particle between Two Parallel Moving Walls Workshop on theories in quantum phenomena and condensed matter physics, UP Los Baños, April 22, 2015
Fabrication and testing of new advanced nanoceramics synthetic apparatus for energy storage and alternative energy applications	Cervera, Rinlee Butch M.	UPD	COE	Researchers, academe	Balik-PhD	2	2013	2015	Completed	2,500,000.00	Cervera, R. B., Oyama, Y., Miyoshi, S., Oikawa, I., Takamura, H., & Yamaguchi, S. (2014). Nanograined Sc-doped BaZrO3 as a proton conducting solid electrolyte for intermediate temperature solid oxide fuel cells (IT-SOFCs). *Solid State Ionics 264*, 1-6.	9	12		Synthesis and Characterization of Fe-doped SiOz Anode Nanomaterial for Lithium Batteries (IMEP20 l 4, Richmonde Hotel, Manila)
											Mirasol, R., & Cervera, R. B. (2015). Production of amorphous and crystalline silica from Philippine waste rice hull. *Advanced Materials Research 1098*, 80-85.				Facile Synthesis of Hydroxyapatite via Modified Sol-gel Method (IMEP2O14 Richmonde Hotel, Manila)
											Balanay, J., & Cervera, R. B. (2015). Preparation of Yttrium-doped barium zirconate/barium cerate (BZY20/BCY20) core-shell structured proton-conducting solid electrolyte via Modified Pechini Method. *Advanced Materials Research Journal 1098*, 38-42.				Production of Amorphous and Crystalline Silica from Philippine Waste Rice Hull (IMEP2014, Richmonde Hotel, Manila) -Best Poster Award
											Nunez, G., Balanay, J., & Cervera, R. B. (2015). Preparation of Y-doped BaZrO3 proton conducting solid electrolyte via modified low temperature Pechini method. *Advanced Materials Research 1098*, 86-91.				Low temperature synthesis of Yttrium doped BaZrotproton-conducting solid electrolyte (ERDT20I4 Conference, SMX, Manila)
											Garrido, C. P., & Cervera, R. B. (2015). Synthesis of amorphous Fe-doped SiO2 anode nanomaterial via sol-gel method. *Advanced Materials Research 1119*, 38-42.				Yttrium-Doped Barium Zirconate/Barium Cerate Core-Shell Nanostructure as Solid Electrolyte for IT-SOFCs, Materials Science and Engineering Congress (MSE 2014), September 23 -25, 201 4, Darmstadt, Germany

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												BS/BA	MS/MA	PhD	
											Cervera, R. B., & Yamaguchi, S. (2015). On the formation of nanograined LiCo2O3(OH) spinel-type material synthesized via modified low-temperature sol-gel approach. *Key Engineering Materials V, Advanced Materials Research 1119*, 106-111.				Bulk-nanograined Fe-doped SiOz as Anode Material for Lithium-ion Batteries (MS&T2014, USA)
											Gimpaya, R. L., & Cervera, R. B. (2016). Solid-state synthesis and characterization of Li7-3xGaxLa3Zr2O12 solid electrolyte for Li-ion battery application. *Key Engineering Materials Journal 705*, 145-149.				Synthesis ofYttrium-doped Barium ZirconatelBarium Cerate (BZY20|BCY20) Core-Shell structured proton conducting solid electrolyte via modified Pechini method (ICMMR20l4 Bangkok, Thailand)
											Cervera, R. B., & Mirasol, E. S. (2016). Preparation of amorphous nanosilica from Philippine waste rice hull via acid precipitation method. *Materials Science Forum 864*, 112-116.				Preparation of Y-doped BaZrO3 Proton Conducting Solid Electrolyte via Modifred low temperature Pechini Method (ICMMR2O 1 4, Bangkok, Thailand)
															Production of Amorphous and Crystalline Silica from Philippine Waste Rice Hull (ICMMR2014, Bangkok, Thailand)
															Low Temperature Synthesis of Y-doped BaZrOtProton-conducting Solid Electrolye for IT-Solid Oxide Fuel Cells (IMEP2014 Richmonde Hotel, Manila)
															Nanograined LiCozO:(OH) Spinel-type Material Synthesized via Modified Lowtemperature Sol-gel Approach (RCME2014, Kuala Lumpur, Malaysia)
															Synthesis of Amorphous Fe-doped SiO2 Anode Nanomateial via Sol-gel Method (ICKEM 201 5, Singapore)
															On the formation of nanograined LiCo2O3(OH) Spinel-type Material Synthesized via Modified Low-temperature Sol-gel Approach (ICKEM 2015, Singapore)
Archeological human remains from Island Southeast Asia; a taphonnomic approach	Crozier, Catherine Rebecca C.	UPD	ASP	Researchers, academe	Balik-PhD	2	2014	2016 With extension	Ended	2,500,000.00	Pawlik, A., Crozier, R., Fuentes, R., Wood, R., & Piper, P. (2019). Burial traditions in early Mid-Holocene Island Southeast Asia: new evidence from Bubog-1, Ilin Island, Mindoro Occidental. *Antiquity, 93*(370), 901-918. https://doi.org/10.15184/aqy.2018.190		1		The project was able to travel to Barangay Kawit, Medellin in the North of Cebu. This is further supported by a MOA between ASP and USC.
															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.
															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.
															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."
Development of a Plasma Device and an Ion Source System for the Modification of Surfaces	Vasquez, Magdaleno Jr. R.	UPD		Researchers, academe	Balik-PhD	2	2014	2016 With extension	Completed	2,500,000.00	Vasquez, Jr., M. R., & Wada, M. 2016. Extraction characteristics of a low-energy ion beam system with a remote plasma chamber. *Review of Scientific Instruments 87*, 02B924.	41	16	6	The grant was able to restore a dilapidated vacuum thermal evaporator.

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												BS/BA	MS/MA	PhD	
											Vasquez Jr., M. R., & Cagomoc, C. M. D. (2016). 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.
											Vasquez Jr., M. R., Taaca, T. L. M. (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.
															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.
											Dela Vega, M. S. D. C., & Vasquez Jr., M. R. (2019). Plasma-functionalized exfoliated multilayered graphene as cement reinforcement. *Composites Part B: Engineering 160*, pp. 573-585. Lao T.L.B., Cordura S.L.A., Diaz L.J.L., Vasquez M.R., Jr.2020. Influence of plasma treatment on the dissolution of cellulose in lithium chloride–dimethylacetamide. Cellulose. 10.1007/s10570-020-03454-6 Montallana A.D.S., Lai B.-Z., Chu J.P., Vasquez M.R., Jr.2020.Enhancement of photodegradation efficiency of PVA/TiO2 nanofiber composites via plasma treatment. Materials Today Communications. 10.1016/j.mtcomm.2020.101183 Taaca K.L.M., Nakajima H., Thumanu K., Janphuang P., Chanlek N., Vasquez M.R., Jr. 2020.Spectroscopic studies of plasma-modified silver-exchanged zeolite and chitosan composites.Materials Chemistry and Physics. 10.1016/j.matchemphys.2020.122980				Manuscripts under review: C. Cagomoc and M. Vasquez Jr., Enhanced Chromium Adsorption Capacity via Plasma Modification of Natural Zeolites (submitted to Japanese Journal of Applied Physics). K. Taaca and M. Vasquez Jr., Fabrication of Ag-exchanged zeolite/chitosan composites and effect of plasma treatment (submitted to Microporous Mesoporous Materials). J. Chan, J. Diaz, E. Enriquez, M. Wada, and M. Vasquez Jr., Doping of Spray-pyrolized Graphene Films using Ar/N2 Gas Discharge (submitted to IEEE Proceedings). Madera R.G.B., Martinez M.M., Vasquez Jr. M.R. 2019. Fabrication of oxidized CuO and spray-pyrolyzed TiO 2 heterojunction thin film. Results in Physics. 10.1016/j.rinp.2019.102269
															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.

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												BS/BA	MS/MA	PhD	
											Garcia J.J.M., Nuñez J.A.P., Salapare H.S., III, Vasquez M.R., Jr.2019. Adsorption of diclofenac sodium in aqueous solution using plasma-activated natural zeolites. Results in Physics. 10.1016/j.rinp.2019.102629 Taaca K.L.M., Olegario E.M., Vasquez M.R., Jr.. 2017. Antibacterial properties of Ag-exchanged Philippine natural zeolite-chitosan composites. AIP Conference Proceedings. 10.1063/1.5010480				An approximately 100 m2 area was renovated to house different plasma equipment. Osonio A.P., Vasquez M.R., Jr.2018. Plasma-assisted reduction of silver ions impregnated into a natural zeolite framework. Applied Surface Science. 10.1016/j.apsusc.2017.09.076 Montallana A.D.S., Cruz C.E.V., Vasquez M.R., Jr. 2018. Antibacterial activity of copper-loaded plasma-treated natural zeolites. Plasma Medicine. 10.1615/plasmamed.2018023987 Chiong M.R., III, Angub M.C.M., Vasquez M.R., Jr. 2018. Antifouling properties of glass substrates irradiated with acetylene plasma. Plasma Medicine. 10.1615/plasmamed.2018023527 Taaca K.L.M., Vasquez M.R., Jr.2017. Fabrication of Ag-exchanged zeolite/chitosan composites and effects of plasma treatment. Microporous and Mesoporous Materials. 10.1016/j.micromeso.2017.01.002
Identification and validation of non-coding RNAs induced by thyroid hormone and glucocorticoids in hippocampal neurons	Bagamasbad, Pia Dano	UPD	CS	Researchers, academe	Balik-PhD	2	2015	2017	Ended	2,500,000.00	Bagamasbad, P., Espina J., Knoedler, J., Subramani A., Harden, A., Denver, R. (2019). Coordinated transcriptional regulation by thyroid hormone and glucocorticoid interaction in adult mouse hippocampus-derived neuronal cells. *PLOS One*. https://doi.org/10.1371/journal.pone.0220378	2	2		Two (2) undergraduate thesis students have succesfully defended their theses and graduated magna cum laude. Data generated from this project was submitted and accepted for two (2) poster presentations to the Endocrine Society Meeting 2017 in Orlando, Florida. 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). 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. Establishing mouse neuronal hippocampal cell line, Hormone treatment of mouse hippocampal cell line and RNA isolation from hormone-treated cells, RNA-sequencing was completed
Tapping into novel fungal endophytes for enzymes with biotechnology applications	Yu, Eizadora Torres	UPD	CS	Researchers, academe	Balik-PhD	2	2015	2017	Ended	2,500,000.00	Bacal, C. J. O., & Yu, E. T. 2017. Cellulolytic Activities of a Novel Fomitopsis sp. and Aspergillus tubingensis isolated from Philippine Mangroves. *Philippine Journal of Science 146* (4), 403-410.	9	3		Malto Z.B.L., Bacal C.J.O., Diaz M.J.S., Yu E.T. 2019. Local fungal endophytes as rich sources of chitinase genes. Philippine Journal of Science 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. Manuscript: Microbial Ecology Rapid decolorization of synthetic dyes by Lasiodiplodia theobromae endophytes Manuscript: Rapid decolorization of synthetic dyes by Lasiodiplodia theobromae endophytes
Discovery of selective antimicrobial agents and probiotic interventions against gut-associated	Ibana, Joyce Altamarino	UPD	CS	Researchers, academe	Balik-PhD	1	2015	2016 With extension	Completed	2,500,000.00	Imperial, I. C. V. J., & Ibana, J. A. (2016). Addressing the antibiotic resistance problem	2	3	2	Scientific Reports. He is 2016 Most Outstanding MS graduate of the College of Science.

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												BS/BA	MS/MA	PhD	
diseases											with probiotics: Reducing the risk of its double-edged sword effect. *Frontiers in Microbiology 7,* 1983.				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".
											Ibana, J. A., Romero, M., Nicdao, M. N. (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.				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".
															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."
															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)
															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."
															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
															Novel methodologies, exciting data and new research directions have emerged from the implementation of this Balik-PhD start-up grant.
															This Balik-PhD grant is also a major contributor in the establishment of a well-equipped laboratory at the Institute of Biology – 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).
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	Researchers, academe	Balik-PhD	2	2015	2017 With extension	Ended	2,499,636.00	Valera, G. T., Payot, B. D., Arai, S., Takeuchi, M., Ishimaru S., Tamura, A. (2019). Petrologic nature of the active subarc crust-mantle boundary: Mixed magmatic-metasomatic processes recorded in xenoliths from Sabtang island, Luzon arc. *Sience Direct Journal.* https://doi.org/10.1016/j.jvolgeores.2019.02.010	4	3		Valera, G.T., Payot, B.D., Arai, S., Ishimaru, S., and Takeuchi, M. (2016) Delineating metasomatic processes beneath an active island arc: Insights from the Sabtang xenoliths. Presented at the Hunt for Ore Deposits 2016: Emerging Trends, Grand Regal Hotel, Davao City.
															Valera, G.T., Payot, B.D., Arai, S., Ishimaru, S., and Takeuchi, M. (2015) Xenoliths from Sabtang Island, Batanes (Philippines): Insights to the crust-mantle composition beneath an active arc. Presented at the 12thAnnual Meeting of the Asia Oceania Geoscience Society, Suntec City, Singapore.
															Valera, G.T., Payot, B.D., Arai, S., Ishimaru, S., and Takeuchi, M. (2015) Petrologic and geochemical characterization of the Sabtang xenoliths. Presented at the Asia Africa Mineral Resources Conference, University of the Philippines Diliman, Quezon City.
															Gadot, E.G., Morishita, T., Arai, S., Payot, B.D. and Mizukami, T. (2015) Petrology of dunite xenoliths from Mt. Pinatubo, Philippines. Presented at the Geocon 2015: Opportunities in Challenging Times, Intercontinental Hotel, Makati City.

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Project Title	Name of Proponent	CU	Unit	Beneficiaries	Funding Source	Duration (Years)	Start	End	Status	Total Program Budget	Publications	No. of Mentored / Graduated Students			Other Outputs
												BS/BA	MS/MA	PhD	
															Collection of xenoliths from target localities, laboratory analyses of selected xenolith samples from the different localities
															The reslults of the work on the xenoliths from Mt. Pinatubo, Sabtang and Mt. Cagua have also been presented in several national (e.g. Geocon 2015: Opportunities in Challenging Times in Manila, Hunt for ORe Deposits 2016: Emerging Trends in Davao City) and international conferences (e.g. Goldschmidt Conference 2016 in Yokohama, Japan, 3rd Geo-Resources World Forum in Jogjakarta, Indonesia).
Understanding cell physiology through characterization of the physical properties of cells: an atomic force microscopy perspective.	Prieto, Eloise Infante	UPD	CS	Researchers, academe	Balik-PhD	2	2015	2017 With extension	Ended	2,500,000.00	Vasquez Jr., M. R., Prieto, E., Wada, M. (2018). Radio-Frequency Plasma-Induced Biocompatibility of Polyimide Substrates. *Plasma medicine 8*(1):35-44). doi: 10.1615 /PlasmaMed.2018023951	4	3		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.
															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.
															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
Utilization of sago flour to improve nutritional profile of selected food products	Alviola, Juma Novie Ayap	UPMin	CSM	Researchers, academe	Balik-PhD	2	2015	2017	Ended	2,500,000.00		1			A Research Assistant BSFT student attended the learning session titled "START Writing a Great Paper and Getting it Published in a Research Journal" in Cagayan de Oro, which was oganized by USAID-STRIVE and Elsevier.
															Research output was presented on two occasions during the: a. ICAEM 2016 Davao City; b. CSM Collogium, UP Mindanao, Davao City.
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	Researchers, academe	Balik-PhD	2	2015	2017	Ended	2,495,000.00					Successful validation of sequences for an enzyme (Cytochrome P450s) and molecular markers (SSRs) mined from the Aspidiotus transcriptome.
															Transcriptome sequencing of Aspidiotus destructor was presented and won as best poster in 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.
Establishment of a Structured Light Laboratory within the Photonics Research Laboratory of the National Institute of Physics	Hermosa, Nathaniel II Placido	UPD	CS	Researchers, academe	Balik-PhD	27	2015	2017	Completed	2,500,000.00	Bareza Jr., N. D., & Hermosa, N. (2015). Propagation dynamics of vortices in helicon-conical optical beams. *Optics Communications 356*, 236.		1		Attended the International Conference on Applied Optics and Photonics, Honver, Germany, with two (2) contibustions 2.1. Beam deflection sensitivity of quadrant detector using Bessel Beams (oral) 2.2. Limits of Brewster Imaging (poster).
											Bareza Jr., N. D., & Hermosa, N. (2016). Subliminal group velocity and dispersion of Laguerre Gauss beams in free space. *Scientific Reports 6*, 26842. Narag J.P.C., Zambale N.A.F., Hermosa N. 2020. Scale distortion correction of a digital micromirror device using diffraction caustics. Optics and Lasers in Engineering. 10.1016/j. optlaseng.2020.106122				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.
											Steinlechner F., Hermosa N., Pruneri, V., & Torres, J. P. (2016). Frequency conversion of structured light. *Scientific Reports 6*, 21390.				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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												BS/BA	MS/MA	PhD	
											Hermosa, N. (2016). Reflection beamshifts of visible light due to graphene. *Journal of Optics 18*, 025612. Simon R.C., Sagisi J.L.B., Zambale N.A.F., Hermosa N.2020.Is a single layer graphene a slab or a perfect sheet?.Carbon. 10.1016/j.carbon.2019.10.044 Narag J.P.C., Hermosa N.2019. Probing Higher Orbital Angular Momentum of Laguerre-Gaussian Beams via Diffraction through a Translated Single Slit. Physical Review Applied. 10.1103/PhysRevApplied.11.054025 Abregana T.J.T., Hermosa N.P., Almoro P.F. 2017. Digital micromirror device as amplitude diffuser for multiple-plane phase retrieval. Proceedings of SPIE - The International Society for Optical Engineering. 10.1117/12.2270182 Steinlechner F., Hermosa N., Pruneri V., Torres J.P.2016. Frequency conversion of structured light. Scientific Reports. 10.1038/srep21390				Nestor Bareza Jr. obtained his MS Physics degree. His thesis topic has been published in Scientific Reports. He is 2016 Most Outstanding MS graduate of the College of Science. Revilla M., Lorenzo J.C., Hermosa N.2019. A paraxial cloak with four lenses of different focal lengths. European Journal of Physics. 10.1088/1361-6404/ab0e52 Zambale N.A.F., Sagisi J.L.B., Hermosa N.P.2019. Goos-Hänchen shifts due to graphene when intraband conductivity dominates. Optics Communications. 10.1016/j.optcom.2018.09.058 Olaya C.M., Garcia W.O., Hermosa N.2018. Goos-Hänchen effect on Si thin films with spherical and cylindrical pores. Proceedings of SPIE - The International Society for Optical Engineering. 10.1117/12.2291484 Banguilan D.G., Bareza N., Jr., Escoto E., Hermosa N. 2018. Measuring the orbital angular momentum of light by dynamic polygon apertures. Proceedings of SPIE - The International Society for Optical Engineering. 10.1117/12.2500986 Zambale N.A.F., Doblado G.J.H., Hermosa N..2017. OAM beams from incomplete computer generated holograms projected onto a DMD. Journal of the Optical Society of America B: Optical Physics. 10.1364/JOSAB.34.001905
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	IMSP	Researchers, academe	Balik-PhD	2	2015	2017	Completed	2,484,172.00	Padama, A. A. B., Nakanishi, H., & Kasai, H. (2015). Quantum states of hydrogen atom on Pd(1 1 0) surface. *Applied Surface Science 359*, 687-691. Arevalo, R. L., Escaño, M. C. S., Padama, A. A. B., & Kasai, H. (2016). Adsorbate-induced demagnetization: borohydride on magnetic substrates. International Journal of Philippine Science and Technology 9, 10–14. Padama, A. A. B., Villaos,R. A B., Albia, J. R., Diño, W.A., Kasai, H., & Nakanishi, H.2017. CO-induced Pd segregation and the effect of	3	4		Kick-off meeting was held in Osaka University. Research collaboration with other research groups was established. The results of the project are presented in national and international conferences. 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.

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												BS/BA	MS/MA	PhD	
											subsurface Pd on CO adsorption on CuPd surfaces. Journal of Physics: Condensed Matter, 29(2). Albao, M. A., & Padama, A. A. B. (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., Cristobal, A. P. S., Ocon, J. D., Diño, W. A., & Kasai, H.. (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.				Peer Reviewed Proceeding Articles INTERACTION OF CO, CO2, COH, AND HCO ON METAL SURFACES 1. Cristobal, A.P.S. and Padama, A.A.B. (2017) Influence of Pd on the adsorption of CO, COH, and HCO on Cu(111) surface. Proceedings of the 35th Samahang Pisika ng Pilipinas Physics Conference, Samahang Pisika ng Pilipinas. 2. Villaos, R.A.B., Albia, J.R., and Padama, A.A.B. (2017) Adsorption of CO on CuPd surfaces: a DFT study using vdW-DF2 functional. Proceedings of the 35th Samahang Pisika ng Pilipinas Physics Conference, Samahang Pisika ng Pilipinas. 3. Estolloso, K.C. and Padama, A.A.B. (2017) The effect of O vacancy on the adsorption of CO2 on Cu2O(111). Proceedings of the 35th Samahang Pisika ng Pilipinas Physics Conference, Samahang Pisika ng Pilipinas. 4. Fontanilla, J.F., Albia, J.R., and Padama, A.A.B. (2017) A density functional theory study on the adsorption of CO on W (110). Proceedings of the 35th Samahang Pisika ng Pilipinas Physics Conference, Samahang Pisika ng Pilipinas. PALLADIUM / NOBLE METAL INTERACTION 5. Buenaluz, T.N.A. and Padama, A.A.B. (2017) A density functional theory study on adsorption of Pd on Au(111) surface. Proceedings of the 35th Samahang Pisika ng Pilipinas Physics Conference, Samahang Pisika ng Pilipinas.
															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.
															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.
															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.
															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.

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												BS/BA	MS/MA	PhD	
															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.
															Villaos, R.A.B., Padama, A.A.B., Albia, J.R., Diño, W.A., Nakanishi, H., Kasai, H. (2017). CO-induced Pd segregation and the effect of subsurface Pd on CO adsorption on CuPdsurfaces. Presented at the Annual Meeting of the Physical Society of the Republic of China (Taiwan) of the Physical Society of the Republic of China (Taiwan), Tamkang University (TKU), Tamsui, Taiwan.

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												BS/BA	MS/MA	PhD	
															Padama, A.A.B., Cristobal, A.P.S., Ocon, J.D., Diño, W. A., Nakanishi, H., Kasai, H. (2017). Factors affecting and processes related to adsorption of CO, COH and HCO on CuPd surfaces: A density functional theory investigation. Presented at the 72nd Annual Meeting of the Physical Society of Japan of the Physical Society of Japan, Osaka University, Osaka, Japan. Geronia R.M., II, Padama A.A.B., Chuang P.-Y.A., Chong M.N., Ocon J.D.2018. Monatomic oxygen adsorption on halogen-substituted monovacant graphene. International Journal of Hydrogen Energy. 10.1016/j.ijhydene.2018.07.185 Chantaramolee B., Padama A.A.B., Nakanishi H., Kasai H., Ogura S., Fukutani K.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. 10.7566/JPSJ.86.044712 Padama A.A.B., Villaos R.A.B., Albia J.R., Diño W.A., Nakanishi H., Kasai H.2017. CO-induced Pd segregation and the effect of subsurface Pd on CO adsorption on CuPd surfaces. Journal of Physics Condensed Matter. 10.1088/0953-8984/29/2/025005 Scrraon A.C.F., Padama A.A.B., Dcl Rosario J.A.D., Ocon J.D.2017. Quantum chemical predictions on alkaline-earth doped graphcne: A density functional theory (DFT) based investigation for a novel class of carbon-based two-dimensional nanomatcrials toward electrochemical, catalytic and electronic applications. ECS Transactions. 10.1149/07711.0629ecst Futalan W.J.C., Serraon A.C., Padama A.A.B., Ocon J.D.2017. S-doped graphitic carbon nitride as potential catalyst towards oxygen reduction reaction. ECS Transactions. 10.1149/07711.0621ecst Geronia R.M., II, Serraon A.C., Padama A.A.B., Ocon J.D.2017. A first-principles study on the electronic and structural properties of halogen-substituted graphene. ECS Transactions. 10.1149/07711.0607ecst
Coping Strategies to Natural Disasters: Micro-Meso-Macro interactions and consequences	Ravago, Majah-Leah Villar	UPD	SE	Researchers, academe	Balik-PhD	2	2015	2017	Ended	2,499,894.00	Ravago, M. R., Mapa, D., Sungalo, J. C., & Roumasset, J. (2019).Coping with Disasters Due to Natural Hazards: Evidence from the Philippines. *Philippine Statistician* Ravago, M. R., Mapa, C. D., Aycardo, A. G., Abrigo, R. M. 2020. Localized disaster risk management index for the Philippines: Is your municipality ready for the next disaster? International Journal of Disaster Risk Reduction, 51. https://doi.org/10.1016/j.ijdrr.2020.101913 Ravago M.-L.V., Mapa C.D.S., Sunglao J.C., Aycardo A.G.2020. Data from a survey of the Philippines' local governments on their risk management strategies to natural disasters. Data in Brief. 10.1016/j.dib.2020.106548	2			Developed and programmed the survey software, based on Microsoft Access. As of July 31, fieldwork has been completed in 37 out of 43 provinces, corresponding to 165 interviews.

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												BS/BA	MS/MA	PhD	
Discovery of small molecule therapeutics from cyanobacteria	Salvador-Reyes, Lilibeth Apo	UPD	CS	Researchers, academe	Balik-PhD	2	2015	2017 With extension	Completed	2,500,000.00	Salvador-Reyes, L. A., Sneed, J., Paul, V. J., & Luesch, H. (2015). Amantelides A and B, polyhydroxylated macrolides with differential broad-spectrum cytotoxicity from a Guamanian marine cyanobacterium. *Journal of Natural Products 78*, 1957-1962.		1		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.
											Salvador-Reyes, L. A., & Luesch, H. (2015). Biological targets and mechanisms of action of natural products from marine cyanobacteria. *Natural Products Reports 32*, 478-503.				Presentation: J.D. Batucan was accepted for poster presentation on the 32nd Philippine Chemistry Congress.
											Patent Application filed in IPOPhil on 27 Aug 2020: Metal Binding Compounds from a Cyanobacterium for Biosorption and Bioremediation				Patent Application in TTBDO: Metal Binding Compounds from a Cyanobacterium for Biosorption and Bioremediation (Update: filed in IPOPhil 27 Aug 2020)
Subsistence Strategies and Prey Spectra of First Humans in the Philippines	Volmer, Rebekka	UPD	ASP	Researchers, academe	Balik-PhD	2	2017	November	26	2,499,744.00	Volmer, R., & Hertler, C. (2016). The effect of competition on shared food resources in carnivore guilds. *Quaternary International 413 B*, 32 - 43. doi: 10.1016/j.quaint.2015.11.054.		2		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.
											Volmer, R., Hölzchen, E., Wurster, A., Ferreras, M. R., & Hertler, C. (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
															The second manuscript is submitted to the ISI-listed journal "Palaeogeography, Palaeoclimatology, Palaeoecology"
															The results on prey spectra of Callao Man are submitted to one on the highest ranking scientific journals Nature having an impact factor of 43.769 on December 22, 2017 and is currently under review: * 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.
Prevalence of mental health problems among Filipino university students: Multi-site, mixed-method research	Del Castillo, Ronald Tolentino	UPM	CPH	Researchers, academe, students	Balik-PhD	2	2017	2019 With extension	Ongoing	2,490,257.60					
In-depth systematic study of fermented foods in the Philippines	Navarro, Richard Ragudo	UPLB	CA	Researchers, academe, students	Balik-PhD	2	2016	2018	Ended	2,500,000.00		1	1		Successful collection of the following samples for the isolation of LAB and AAB from different provinces in Central and Northern Luzon.
Detection of foodborne pathogens along the supply chain of fresh oysters and mussels and its culture environment	Nuñal, Sharon Nonato	UPV	CFOS	Researchers, academe, students	Balik-PhD	2	2016	2018	Ended	2,500,000.00		3	1		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

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Microbial community shifts and enzymatic degradation rates in sediments influenced by plant-based fish feeds	Santander-de Leon, Sheila Salarda	UPV	CFOS	Researchers, academe	Balik-PhD	2	2016	2018	Ended	2,500,000.00		3	2		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. Quantitative-PCR training in Kagoshima University Molecular analyses of samples and a number of donated supplies form Dr. Maeda
A cross-country reserach on natural disaster and risk management	Pajaron, Marjorie C.	UPD	SE	Researchers, academe	Balik-PhD	2	2016	2018	Ended	2,492,000.00	Pajaron, M. C. (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. Pajaron, M. C., & Vasquez, G. N. (2020). Weathering the storm: Weather shocks and international migration. Philippine Journal of Population Economics			4	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). 1. Presentation in London 2. Presentation in Hongkong 3. Presentation in Peking University 4. Meeting and conference at Hitotsubashi University, Tokyo, Japan
Catalytic valorization of lignin for the production of aromatic chemicals	Aguila, Mae Joanne Budol	UPLB	CAS	Researchers, academe	Balik-PhD	2	2016	2018	Ended	2,500,000.00		7		10	Attended the 32nd Philippine Chemistry Congress wherein different breakthourghs in science and scientific papers were presented Project Leader represented the Institue of Chemistry for the Youth Science Award Forum Able to prepare a set of bis(imino)-pincer ligands form the condsation of carbonyl compund with anilines. Successfully perforemed bis(amino)pincer ligand synthesis from isophthalaldehyde and 2,6-dimethylaninline via direct reductive amination.
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, academe, students	Balik-PhD	2	2016	2018	Ended	2,500,000.00	Tampon, N. T., Rabaya, Y. C., Malbog, K. A., Burgos, S. C., Michael G. Bacus, M. G., Libre , K. Jr., Valila, A. D., Achondo, M. M., Onggo, L. S., & Murao, L.E. (2020). First Molecular Evidence for Bat Betacoronavirus in Mindanao. *Philippine Journal of Science* Murao, L. A.E., Bacus, M. G, Junsay, N. X. T., Albarillo, D. L.D., Otero, M.C.B., Buenaventura, S.G.C., Ligue, K.D.B., & Alviola, P.A. (2019). Spatiotemporal dynamics and risk factors of rotavirus A circulation in backyard pig farms in a Philippine setting. Springer Murao L.A.E., Bacus M.G., Junsay N.X.T., Albarillo D.L.D., Otero M.C.B., Buenaventura S.G.C., Ligue K.D.B., Alviola P.A., IV. 2019 Spatiotemporal dynamics and risk factors of rotavirus A circulation in backyard pig farms in a Philippine setting. Tropical Animal Health and Production. 10.1007/s11250-018-1776-3	21	5		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) Bacus, M.G., Burgos, S.C., Elizagaque, H.G., (...), Achondo, M.J.M.M., Murao, L.A.E.2021.Pilot fecal dna barcoding on selected fruit bats in davao city, philippines. Philippine Journal of Science, 150(2), pp. 545-555.
Synthesis of Inhibitors of Mycobacterial Cell Wall Galactan Biosynthesis	Completo, Gladys Cherisse Jaucian	UPLB	CAS	Researchers, academe, students	Balik-PhD	2	2016	2018	Ended	2,484,999.60					Ortiz C.L.D., Completo G.C., Nacario R.C., Nellas R.B. 2019. .Potential Inhibitors of Galactofuranosyltransferase 2 (GlfT2): Molecular Docking, 3D-QSAR, and In Silico ADMETox Studies. Scientific Reports. 10.1038/s41598-019-52764-8
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, academe, students	Balik-PhD	2	2017	2019	Ended	2,489,772.00	Jabagat, K. D., Gabo-Ratio, J. A., Queaño, K. L., Yonezu, K., Dimalanta, C. B., Lee, Y. H., Yumul, G. P., Jr. (2020). Petrogenetic constraints on magma fertility in the Baguio Mineral District, Philippines: Probing the mineralization potential of the igneous host rocks in the Sangilo epithermal deposit. Ore Geology https://doi.org/10.1016/j.oregeorev.		1		Research collaboration with the Department of Earth Resources Engineering, Kyushu University in Fukuoka, Japan. JAS Gabo-Ration, 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.
Phytosterols on cellular senescence and senescence-associated inflammation	Velarde, Michael C.	UPD	CS	Researchers, academe, students	Balik-PhD	2	2016	2018	Completed	2,500,000.00	Marquez, C. M. D., Ibana, J. A., & Velarde M. C. (2017). The female reproduction and senescence nexus. A*merican J Reprod Immunol.* 77(5): e12646. PMID: 28185345 - https://onlinelibrary.wiley.com/doi/full/10.1111/aji.12646	3	3		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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Project Title	Name of Proponent	CU	Unit	Beneficiaries	Funding Source	Duration (Years)	Start	End	Status	Total Program Budget	Publications	No. of Mentored / Graduated Students			Other Outputs
												BS/BA	MS/MA	PhD	
											Marquez, C. M. D., & Velarde, M. C. (2018). Chapter 16 Senescent Cells as Drivers of Age-Related Diseases. In Ahmad SI (Ed.), Aging: Exploring A Complex Phenomenon. Boca Raton: Taylor & Francis CRC Press, pp. 305-334. - https://www.taylorfrancis.com/books/9781315283890/chapters/10.1201/b21905-16				Marquez CMD, Ibana JA, Velarde MC. Meta-analysis of senescence-associated secretory phenotype in various cell types and its potential role during gestation. 8th Philippine Society for Developmental Biology Annual National Convention. October 22, 2015. University Theater, Adamson University, Manila, Philippines
															Marquez, C. M. D., Ibana, J. A., & Velarde, M. C., 2017. The female reproduction and senescence nexus. American Journal of Reproductive Immunology. 77(5):e12646. DOI: 10.1111/aji.12646.
															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.
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	CVM	Researchers, academe, students	Balik-PhD	2	2016	2018	Ended	2,500,000.00	Galay, R. L., Manalo, A. A. L., Dolores, S. L. D. et. al. (2018). Molecular detection of tick-borne pathogens in canine population and Rhipicephalus sanguineus (sensu lato) ticks from southern Metro Manila and Laguna, Philippines. *Parasites Vectors, 11:* 643. https://doi.org/10.1186/s13071-018-3192-y	13			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.
											Galay, R. L., Talactac, M. R., et. al. (2020). Molecular Detection of Rickettsia spp. and Coxiella burnetii in Cattle, Water Buffalo, and Rhipicephalus (Boophilus) microplus Ticks in Luzon Island of the Philippines. *Tropical medicine and Infectious Diseases*				"Developments in Veterinary Diagnostics Laboratories" held last May 24, 2017 at SEARCA, UPLB, and lastly, "Demonstration of the Pocket Expression System" by the Biokits, Philippines held last May 30, 2017 at the Lecture Rm. 3, IAS Communal Bldg., UPLB and VMBL, CVM.

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												BS/BA	MS/MA	PhD	
											Alota S.L., Edquiban T.R.J., Galay R.L., Bernardo J.M. G., Sandalo K.A.C., Divina B.P., Tanaka T.2021. Determination of resistance status to amitraz in the cattle tick Rhipicephalus (Boophilus) microplus from Luzon, Philippines, through bioassay and molecular analysis. Experimental and Applied Acarology. 10.1007/s10493-021-00593-8 Galay R.L., Talactac M.R., Ambita-Salem B.V., Chu D.M.M., dela Costa L.M.O., Salangsang C.M.A., Caracas D.K.B., Generoso F.H., Babelonia J.A., Vergano J.L., Berana L.C., Sandalo K.A.C., Divina B. P., Alvarez C.R., Mago E.R., Andoh M., Tanaka T. 2020.Molecular detection of Rickettsia spp. And Coxiella burnetii in cattle, water buffalo, and Rhipicephalus (Boophilus) microplus ticks in Luzon Island of the Philippines. Tropical Medicine and Infectious Disease. 10.3390/tropicalmed5020054 Chua A.P.B., Galay R.L., Tanaka T., Yamazaki W. 2020.Development of a loop-mediated isothermal amplification (Lamp) assay targeting the citrate synthase gene for detection of ehrlichia canis in dogs.Veterinary Sciences. 10.3390/vetsci7040156				Last April 10, 2017, Dr. Tetsuya Tanaka of the Laboratory of Infectious Diseases, Kagoshima University Japan visited the College of Veterinary Medicine, UPLB and delivered a special lecture on the "Studies of Ticks and Tick-borne Diseases", organized by the project leader. 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 and 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".
Organic Components of Submarine Groundwater Discharge in Lingayen Gulf	Jaraula, Caroline Marie B.	UPD	CS	Researchers, academe, students	Balik-PhD	2	2016	2018	Ended	2,499,108.00		4			Organized SGD Workshop regarding the use of Durridge RAD7 for Radon-222 monitoring Hosted On-the-job-trainees from Adamson University Workshop on "Gadgets we can build: water level meter" with Dr. John Burtkenly Ong
Self-force and radiation-reaction in novel settings	Vega, Michael Francis Ian II G.	UPD	CS	Researchers, academe, students	Balik-PhD	2	2017	2019	Ended	2,500,000.00	Bernardo, R. C., & Vega, I. (2019). Hair-dressing Horndeski: An approach for obtaining hairy solutions in cubic Horndeski gravity. *Physical Review D. 99*(12),124049 De Leon, K., & Vega, I. (2019). Weak gravitational deflection by two-power-law densities using the Gauss-Bonnet theorem. Physical Review D. 99(12),124007 Jezreel Castillo, Ian Vega, and Barry Wardell. 2018. Self-force on a scalar charge in a circular orbit about a Reissner-Nordström black hole. Physical Review. Karl Simon Revelar and Ian Vega. 2017. Overcharging higher-dimensional black holes with point particles. Physical Review.	3	2		The editor for the Taylor and Francis Group has finished reviewing the book chapter they have written. Have recently submitted the revised manuscript and are now waiting for its publication.
Marine biodiversity of Taklong Island: Integrating biodiversity knowledge at the molecular, organismal and bioformatic levels	Malay, Maria Celia Defrance	UPV	CS	Researchers, academe, students	Balik-PhD	2	2017	2019	Ended	2,500,000.00	Malay, M. C. M. D., & Rañises, D. M. L. (2019). Observations on the habitat, color polymorphism, and sexual system of the semi-terrestrial shrimp Merguia oligodon (De Man, 1888). *Journal of Crustacean Biology (Decapoda: Caridea: Merguiidae) 39*(6), pp. 764-769		6		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.
Materials for Solar Fuels	Mercado, Candy	UPD	COE	Researchers, academe, students	Balik-PhD	2	2016	2018	Ended	2,500,000.00	Mabuti, L. A., Manding, I. K., & Mercado, C. C. (2018). Photovoltaic and photocatalytic properties of bismuth oxyiodide–graphene nanocomposites. *RSC Advances* Mercado, C. C., Lubrin, M. E., Hernandez, H. A., & Carubio, R.A. (2019). Comparison of Photoelectrochemical Current in Amorphous and Crystalline Anodized TiO2 Nanotube Electrodes. International Journal of Photoenergy		2		A graduate researcher has been identified for this project and he will be directly working in the COMSOL simulations.

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												BS/BA	MS/MA	PhD	
Ridge-to-reef Disaster Risk Assessment and Climate Change Impact Assessment of Water-related Disasters in the Philippines	Jaranilla-Sanchez, Patricia Ann Asico	UPLB	SESAM	Researchers, academe, students	Balik-PhD	2	2018	2020	Ongoing	2,500,000.00					
Ecological processes on reefs exposed to different environmental conditions: influence on coral community structure	Cabaitan, Patrick Caranzo	UPD	CS	Researchers, academe, students	Balik-PhD	2	2018	2020	Ended	2,500,000.00	Quimpo, T. J. R., Cabaitan, P. C., & Hoey, A. S. (2019). Differential consumption of scleractinian and non-scleractinian coral larvae by planktivorous damselfishes. *Coral Reefs 38*, 1293–1301. https://doi.org/10.1007/s00338-019-01859-9 Quimpo, T. J. R., Cabaitan, P. C., & Hoey, A. S. (2019). Detachment of Porites cylindrica nubbins by herbivorous fishes. The Journal of the Society for Ecologica Restoration. doi: 10.1111/rec.13091 Robles L.E., Cabaitan P.C., Aurellado M.E.B.. 2018. Effects of competition on the territorial behaviour of a farmer damselfish, Plectroglyphidodon lacrymatus (Perciformes: Pomacentridae). Journal of Fish Biology. 10.1111/jfb.13841		4		Manaid et al. (2018) Influence of substrate type and predator presence on the movement of Drupella rugosa. Presented at the 3rd Asia-Pacific Coral Reef Symposium, Cebu Philippines. Restan et al. (2018) Effect of temperatures on coral susceptibility to Drupella rugosa (Gastropoda: Muricidae) predation. Presented at the 3rd Asia-Pacific Coral Reef Symposium, Cebu Philippines. Quimpo T.J.R., Ligson C.A., Manogan D.P., Requilme J.N.C., Albelda R.L., Conaco C., Cabaitan P.C.2020. Fish farm effluents alter reef benthic assemblages and reduce coral settlement.Marine Pollution Bulletin.10.1016/j.marpolbul.2020.111025
Integrated Geomorphologic, Geochemical and Geophysical Studies on Hydrothermally rocks and their influence on Landslide susceptibility in Benguet Province, Philippines	Padrones, Jenielyn Tuando	UPLB	CFNR	Researchers, academe, students	Balik-PhD	2	2018	2020	Ongoing	2,499,945.60					
Graphene and related two-dimensional materials for future nonelectronic device applications	Colambo, Ivy	UPLB	CAS	Researchers, academe, students	Balik-PhD	2	2018	2020	Ongoing	2,500,000.00		1			
Geophysical potential field investigation of the Macolod Corridor and adjacent regions: Crustal structure, heat flow, and deformation near the terminus of the Manila subduction zone	Armada, Leo Tajapal	UPD	CS	Researchers, academe, students	Balik-PhD	2	2018	2020	Ongoing	2,499,704.00					
Low Molecular Urea-Based Molecules as Structurants for Hydrophobic and Hydriphilic Systems	Paderes, Monissa Cuebillas	UPD	CS	Researchers, academe, students	Balik-PhD	2	2019	2021	Ongoing	2,885,024.39					
Co-occurrence and association of parasitic Amoebophyra (Syndiniales) with toxic dinoflagellates (Dinophyceae) in Philippine waters	Onda, Deo Florence	UPD	CS	Researchers, academe, students	Balik-PhD	2	2019	2021	Ongoing	2,500,000.00					Dela Peña L.B.R.O., Tejada A.J.P., Quijano J.B., Alonzo K.H., Gernato E.G., Caril A., Cruz M.A.M.D., Onda D.F.L.2021. Diversity of marine eukaryotic picophytoplankton communities with emphasis on mamiellophyceae in northwestern Philippines. Philippine Journal of Science Onda D.F.L., Gomez N.C.F., Purganan D.J.E., Tolentino M.P.S., Bitalac J.M.S., Calpito J.V.M., Perez J.N.O., Viernes A.C.A.2020.Marine microbes and plastic debris: Research status and opportunities in the Philippines.Philippine Journal of Science
Impacts of multiple stressors on hard and soft corals	Rodriguez, Maria Vanessa B.	UPD	CS	Researchers, academe, students	Balik-PhD	2	2019	2021	Ongoing	2,499,974.40	Baran C.C., Baria-Rodriguez M.V 2021. .Sexual reproduction in the soft coral Lobophytum schoedei in Bolinao-Anda Reef Complex, Pangasinan, northwestern Philippines. Invertebrate Biology. 10.1111/ivb.12316 Lalas J.A.A., Benayahu Y., Baria-Rodriguez M.V. 2021. Community structure and size-frequency distribution of soft corals in a heavily disturbed reef system in northwestern Philippines. Marine Pollution Bulletin. 10.1016/j.marpolbul. 2020.111871 Bonilla KG, Guest JR, dela Cruz DW and Baria-Rodriguez MVB. 2021. Onset of sexual maturity of sexually propagated and wild colonies of the massive coral Favites abdita in northwestern Philippines. Invertebrate Reproduction and Development. doi.org/10.1080/07924259. 2021.1935334				

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												BS/BA	MS/MA	PhD	
Tracking agricultural lifestyles and ecosystem change in the Philippines during the Holocene using rodent communities	Herrera, Michael	UPD	ASP	Researchers, academe, students	Balik-PhD	2	2019	2021	Ongoing	2,500,000.00		1			
Diversity, systematics, and molecular phylogeny of Philippine Dyctyotales (Phaeophyceae, Ochrophyta)	Santiañez, Wilfred John	UPD	CS	Researchers, academe, students	Balik-PhD	2	2019	2021	Ongoing	2,500,000.00					Santiañez W.J.E., Wynne M.J.2020. .Establishment of Mimica gen. nov. To accommodate the anaxiferous species of the economically important red seaweed Eucheuma (Solieriaceae, Rhodophyta). Phytotaxa.10.11646/PHYTOTAXA.439.2.8 Santiañez W.J.E., West J.A.2019. New records of rosenvingea (Scytosiphonaceae, phaeophyceae) from the Philippines. Philippine Journal of Systematic Biology. 10.26757/pjsb2019a13001
Establishment of animal developmental biology laboratory for the assessment of the teratogenic and identification of teratogenic mechanism of different plant-derived products using histomolecular approach	Ipulan-Colet, Lerrie	UPD	CS	Researchers, academe, students	Balik-PhD	2	2019	2021	Ongoing	2,499,999.80			1		
Guns for hire: functions of a minimal CRISPR-Cas variant in the mobility of a Tn7-like transposon in Vibrio	Dy, Ron Leonard V.	UPD	CS	Researchers, academe, students	Balik-PhD	2	2019	2021	Ongoing	2,500,000.00		2	1		
Photothermally active Copper Sulfide-Based Nanomaterials for Solar-Driven Water Treatment	Regulacio, Michelle	UPD	CS	Researchers, cademe, student	Balik-PhD	2	2020	2022	Ongoing	2,500,000.00	Regulacio M.D., Nguyen D.-T., Horia R., Seh Z. W.2021. Designing Nanostructured Metal Chalcogenides as Cathode Materials for Rechargeable Magnesium. Philippine Journal of Science Copper Sulfide-Based Nanomaterials for Photothermal Applications				