

Department of Science and Technology
Science Education Institute
**Engineering Research and
Development for Technology**



EN FORUM



ANNUAL REPORT 2019

TABLE OF CONTENTS

OVERVIEW

A. Message from the Program Leader	1
B. The Program and its Objectives	2
C. ERDT at a Glance	3
D. Accredited Programs	4

PART I: Human Resource Development	11
A. Local Graduate Scholarship	12
B. Foreign Fellowship	14
C. Faculty Development Programs	15

PART II: Research and Development	17
-----------------------------------	----

PART III: Annual Events and Activities	20
A. Visiting Professors Lectures	22
B. Roadshows	22
C. Engineering Forum Series	23
D. Thesis/Dissertation Writing Seminar	24
E. 8th ERDT Congress	26
F. 17th ERDT Conference	28
G. Staff Learning and Development Program	30

ANNEXES	31
A. List of Local MS Graduates	32
B. List of Local PhD Graduates	43
C. List of Foreign PhD Graduates	46
D. Recipients of Research Dissemination Grant	47
E. Recipients of Faculty Research Dissemination Grant	62

Message from the Program Leader

Since its full implementation in 2008, the Engineering Research and Development for Technology (ERDT) and its eight consortium member universities have already produced 1,240 MS and 153 PhD graduates. In the coming years the ERDT is expected to graduate hundreds of scholars who are currently enjoying the benefits and privileges accorded to them under the scholarship programs of ERDT's *Human Resource Development* component.

These graduates contribute to the country's pool of researchers, scientists, and engineers (RSEs) --- the backbone to producing quantity and quality research. Admittedly, the country needs to increase its engineering research outputs. Thus, addressing this concern is one of ERDT's main goals by continuously providing opportunities for its scholars and faculty advisers to participate and work on projects that are aligned with the country's National Science and Technology Plan (NSTP) and in consonance with the country's medium-term development plan through its *Research and Development* thrust.

To complement the realization of this goal, the ERDT, through its *Infrastructure Development* component, has funded the construction of six buildings and the renovation of existing facilities in the Engineering Complex in UP Diliman. The complex, nearing its full completion, will house state-of-the-art laboratories and facilities that will provide students and researchers an environment conducive to learning and the conduct of research.

The ERDT will continue to advance Science and Technology by continuing to invest in the country's future RSEs and supporting their research initiatives. Ultimately, the program will seek to produce relevant and transferrable results for the benefit of the Filipino people towards nation-building.



PROF. FERDINAND G. MANEGDEG
Dean, UPD College of Engineering
Program Leader, ERDT

The ERDT

The ERDT is a consortium of eight-member universities in the Philippines that offers mature Master's and doctoral degrees in various engineering fields. Ateneo de Manila University (ADMU), Central Luzon State University (CLSU), De La Salle University (DLSU), Mapúa University (MU), Mindanao State University-Iligan Institute of Technology (MSU-IIT), University of the Philippines Diliman (UPD), University of the Philippines Los Baños (UPLB), and University of San Carlos (USC).

OBJECTIVES

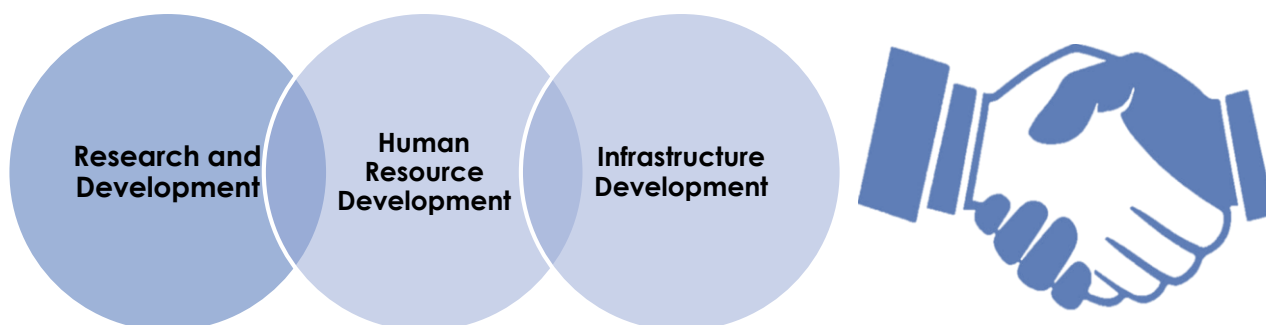
The ERDT program was created to:

- Implement high impact research agenda that is aligned with the National Science and Technology Plan (NSTP) and Medium Term Philippine Development Plan (MTPDP);
- Attain a critical mass of graduates with Master's and PhD degrees;
- Upgrade the qualifications of practicing engineers;
- Upgrade the quality of engineering colleges and make engineering graduate education accessible; and
- Develop a culture of research and development (R&D).



ERDT AT A GLANCE

PROGRAM COMPONENTS



1,240	153
MS Graduates	PhD Graduates
data as of 31 December 2019	

Project Offices		
NCR	Ateneo de Manila University	School of Science and Engineering
	De La Salle University	Gokongwei College of Engineering
	Mapúa University	School of Graduate Studies
	University of the Philippines Diliman	College of Engineering
Region III	Central Luzon State University	College of Engineering
Region IV-A	University of the Philippines Los Baños	College of Engineering and Agro-Industrial Technology
Region VIII	University of San Carlos	School of Engineering
Region X	Mindanao State University – Iligan Institute of Technology	College of Engineering

ACCREDITED PROGRAMS

PROGRAM	ADMU	CLSU	DLSU	MU	MSU-IIT	UPD	UPLB	USC
Master of Science (MS) Program								
Agricultural Engineering								
Agrometeorology								
Biological Engineering								
Chemical Engineering								
Chemical Engineering by Research								
Civil Engineering								
Computer Application								
Computer Engineering						*		
Computer Science								
Data Science								
Electrical Engineering								
Electronics and Communications Engineering					*	*		
Energy Engineering								
Environmental Engineering								
Geomatics Engineering								
Industrial Engineering								
Mechanical Engineering								
Materials Science and Engineering								
Materials Science and Engineering by Research								
Metallurgical Engineering								
Manufacturing Engineering								
Doctoral (PhD) Program								
Agricultural Engineering								
Chemical Engineering								
Chemical Engineering by Research								
Civil Engineering								
Computer Science								
Electronics and Communications Engineering						*		
Electrical and Electronics Engineering								
Energy Engineering								
Environmental Engineering								
Food Engineering								
Industrial Engineering								
Mechanical Engineering								
Mechanical Engineering by Research								
Materials Science and Engineering								
Waste Engineering								
Water Engineering								
Master of Engineering (MEng) Program								
Electrical Engineering								
Industrial Engineering								
Straight PhD Program								
Chemical Engineering								
Electrical Engineering								
Environmental Engineering								
Materials Science and Engineering								
Mechanical Engineering								
BS/MS Program								
Chemical Engineering								
Civil Engineering								
Computer Engineering								
Computer Science								
Electrical Engineering								
Electronics and Communications Engineering								
Environmental Engineering								
Industrial Engineering								
Manufacturing Engineering and Management								
Mechanical Engineering								

Legend: ■ - Program is available and supported

* - Covered by the MS EE program (in UPD and MSU-IIT) and PhD EE program (in UPD) through the various specializations and internal tracks



"I thank the DOST-ERDT scholarship for not only giving financial assistance towards attaining my graduate degree in computer science--- but also for reinforcing my understanding of science for nation-building. Ultimately, I am extremely grateful that this scholarship exists as it motivated and pushed me to pursue further studies."

ANA FELICIA T. CRUZ
MS Computer Science
Ateneo de Manila University



"My family and I are truly grateful to ERDT for the unending support and guidance in my academic pursuit. I thank God and always pray that this scholarship program will continue to prosper [in order] to help other students who want to pursue higher degree of learning. Maraming maraming salamat po DOST-ERDT."

EDISON ROXAS
PhD Electronics and Communications
Engineering
De La Salle University



"ERDT opened many doors of opportunities during my graduate studies. With the support it gives, I was able to represent our university and our country at various conferences here and abroad. I was also able to work with foreign researchers during my thesis"

DIANA ROSE T. RIVERA
MS Mechanical Engineering
(Sandwich Program)
De La Salle University



"Thank you very much ERDT for giving me a chance to study at Liverpool Hope University. This is a great opportunity for me to learn many things about haptics, telerobotics, and virtual reality from different experts abroad."

ALEXANDER C. ABAD
Foreign PhD Scholar
Liverpool Hope University



"ERDT provided me the means to further my passion for learning by exploring means to make civil engineering a more sustainable practice. Through my research, I fulfill my duty to be a responsible scholar and engineer for our country."

JOMARI F. TAN
BS-MS Civil Engineering
De La Salle University

"Thanks to the financial support of ERDT, I was able to seize opportunities presented to me."

DELFIN ENRIQUE G. LINDO
MS Manufacturing Engineering and Management
De La Salle University





"I would like to express my sincere gratitude to the Engineering Research and Development for Technology (ERDT) Local Graduate Scholarship through the support of the Department of Science and Technology (DOST), for the extensive assistance provided by this institution. My dream of having an MS Degree would not have been possible without the guidance and help of this institution who contributed and extended their valuable assistance in the completion of my study. I will always be grateful and proud to be a DOST-ERDT scholar."

VILMARK M. VIRAY

MS in Electronics Engineering
Mapúa University



"I am truly thankful for being a recipient of DOST-ERDT scholarship. This blessing makes higher education possible for so many students, especially for engineers like me. It gave me opportunity to grow in learning, and to discover my specialty in my chosen field. Without this opportunity, I may never build interest in indulging myself in Research and Development. I may be settled in my comfort zone and not be inspired to contribute solutions in the problems of [our] society. Thus, thank you for investing in my future and may you continue to foster successful students like what you did to me."

MAY ANNE C. VALENCIA

MS Electronics Engineering
Mapúa University



"It is my great desire to continue learning about my chosen professional field. But, since I bear the responsibility to sustain my family's needs, I am incapable of doing so. My most heartfelt gratitude to DOST-ERDT Scholarship as it has paved way for me to accomplish my Master's Degree. This success is not mine nor my family's, but of this country. I shall promise to reciprocate the blessing by paying forward with bettering my craft as a Civil Engineer in any industry I find myself with as my desire for learning grows further."

RODERICK MACARIOLA

MS Civil Engineering
Mapúa University



"ERDT-DOST Scholarship has given me the encouragement and opportunity to pursue my Master's Degree in Chemical Engineering. Through this program, I was able to upgrade my qualification as a practicing engineer and explore the field of research and development. It also enabled me to present my research study in international conferences and have my first international publication. I will be forever grateful for all the support from DOST-ERDT Scholarship and Mapúa University."

ROSE ANN LOMEDA – DE MESA

MS Chemical Engineering
Mapúa University



"I am truly grateful for the gift given to me to study Master of Science in Civil Engineering at Mapua University. As someone who came from poverty, [I thought] it is impossible to obtain a higher degree of education. Through the support of the scholarship, I have accomplished much of what is imaginable for me. I am now a full-time faculty of Western Philippines University-Palawan, sharing the knowledge I have acquired from my learning experience. This first step towards my dreams would not be possible without the generosity of the Department of Science and Technology - Engineering Research Development and Technology (DOST-ERDT) Scholarship Program."

JAYSOON DENSULA MACMAC

MS Civil Engineering
Mapua University



"As a student living in Manila, away from my hometown province, I could not be thankful enough for all the help that DOST-ERDT has offered me. ERDT provided me with financial support which was very helpful to me and to my family. It helped me realize my dream of becoming a Master's degree holder and be part of Mapua University, which is my dream school. Aside from that, it led me to various opportunities. I was able to present my research in local and international conferences in which I bagged the "Best Paper Award". Most importantly, ERDT gave me the chance to interact and build friendship with other professionals."

JAY T. CABUÑAS

MS Civil Engineering
Mapua University

"I am sincerely honored to have been selected as a recipient of the DOST ERDT Scholarship. Your generosity has brought me one step closer to achieving my goal. My education has always been of utmost importance to me, and to be rewarded in this way is very humbling. You have given me the financial freedom not only to focus on my passion in science and engineering at Mapua University but also to become a more qualified educator, an opportunity that I have always dreamed of but wouldn't have been feasible without this assistance."



ERIC HALABASO

MS Chemical Engineering
Mapua University



"Being a DOST-ERDT graduate scholar is indeed a great blessing! I am truly grateful to DOST for my PhD journey experience which honed me to become the best of me. The perks of my graduate studies journey include the receipt of best presentation, best paper award in international conferences and excellent paper award published in SER in 2018. As a PhD graduate in Environmental Engineering, it opens avenue to some consultancy works in various environmental projects all over the country. To mention a few like environmental impact assessment, water quality assessment of different water sources for drinking water and irrigation water supply."

DONAMEL SAIYARI

PhD Environmental Engineering
Mapua University



"[The] DOST-ERDT scholarship provided not only the financial support but above all, it helped me reach the path of success by achieving one of my goals, [which is] having an MS degree."

CARLO N. CABACCAN
MS Electronics Engineering
Mapua University

"I am very grateful to the DOST-ERDT for giving me an opportunity to pursue my master's degree in electrical engineering. Through this program, I was able to advance my professional growth, attend various conferences, conduct and present research, and finally, be able to graduate in my childhood dream school, Mapua University. Being a scholar made me realize that I can also help others in my own little ways. Obtaining a MSEE degree can land me a job, and become a mentor as well to future engineers. I do hope that more students will be able to fulfill and realize their dreams by being a DOST Scholar."

ALFRED REY G. VASQUEZ
MS Electrical Engineering
Mapua University



"My scholarship at Mapua University is a portal that has opened unimaginable opportunities in my professional and personal growth. I was able to finish my PhD in 2017 specializing in Environmental Engineering in a breeze and at young age. Hence, being awarded said scholarship tremendously changed my life overnight. With Mapua's reputation as an Engineering school and my [ERDT] scholarship, together attached to my name, I was offered management positions that one can only get after 20 years of working. Now I am the Director for the Quality Assurance Department and OIC of the Civil Engineering Department of FEU TECH. This is a resonance of what I have become because I am a Mapua University scholar."

ARMI CUNANAN
PhD Environmental Engineering
Mapua University



"My education has always been of utmost importance to me so I started pursuing my Master's degree in Chemical Engineering in the last quarter of 2015, at Mapúa University (formerly Mapúa Institute of Technology), and to have been chosen as a DOST-ERDT scholar is very humbling, words cannot express how grateful I am. The DOST-ERDT scholarship has not only provided a strong platform of network of scholars to become key players in the country's development but also supported my aspirations."

ADONIS P. ADORNADO
MS Chemical Engineering
Mapua University



"Engineering Research and Development for Technology gave me another chance in life. The scholarship served as the catalyst of self-discovery that harnessed my full potential as an agricultural engineer. Not only did I gain essential knowledge but I also gained a family, with other ERDT scholars, along the way. The whole journey of completing my master's degree led to my passion of serving the nation—serving the Filipino people."

ROMEL A. ARROBANG

MS Agricultural Engineering (Valedictorian)
UP Los Baños



"I am Joemer A. Adorna Jr, an MS in Chemical Engineering student at the University of the Philippines Los Baños (UPLB). For my thesis, I have taken the opportunity to do my experiments in the Biomedical Engineering and Environmental Sciences Department (BMES) at National Tsing Hua University (NTHU), Taiwan. I am very grateful for the DOST - ERDT sandwich program for supporting the completion of my study. My sincere gratitude goes to them, for the opportunity and experience of letting me do my graduate studies in NTHU, Taiwan."

JOEMER A. ADORNA

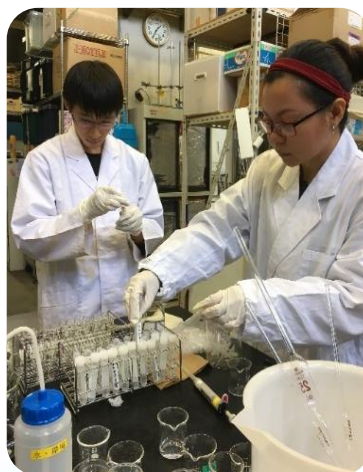
MS Chemical Engineering
UP Los Baños



"The journey I had in the most prestigious institution of the country, the University of the Philippines Los Baños, was really a great opportunity. Yes, all the people in the academe were so influential in making my PhD journey a success. Aside from the knowledge imparted on me by my brilliant professors, UPLB thought me how to be creative, patient, persistent, diligent, flexible, and strong to face the challenges of university life. It had also provided me with an excellent foundation to build a rewarding career and a happy life. Lastly, I am indeed so blessed to be given the opportunity to be one of the only few ERDT scholars because without this scholarship, I may not be able to push through with this study. I will always be thankful for everything that I gained during my PhD journey at UPLB."

REYNOLD M. CAOILI

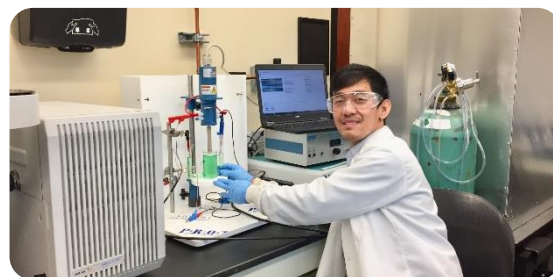
PhD in Agricultural Engineering (Valedictorian)
UP Los Baños



"My study in Japan was made possible through the Engineering Research and Development for Technology (ERDT) Faculty Development Program Foreign Scholarship. I would like to thank Dr. Arnold Elepaño and the ERDT staff for assisting me for three years. I was able to join conferences where I met researchers all over the world. I gained skills particularly in field works, laboratory analysis and journal paper writing throughout the course of three years. I was also lucky since my professor, Dr. Katsuhide Yokoyama, instilled in me excellence and perseverance. There were many challenges so I believe one must be mentally, emotionally, financially and physically strong in taking a PhD degree. I wish to impart to my students the knowledge that I gained and create future collaborative projects with other researchers."

JOAN CECILIA C. CASILA

PhD in Engineering major in Civil and Environmental Engineering
Tokyo Metropolitan University



"Graduate education has opened opportunities that I never thought would be possible. I was exposed to international researchers, specialists and even Nobel Laureates. International conferences and trainings have expanded my horizon, equipped me with the necessary technical and research skills, learned the state-of-the-art tools/scientific instruments and broaden my network of contacts. Surely, it's a platform to pursue personal & professional growth and be the best version of yourself at the end of the program. These were all possible through the generous support of ERDT-DOST. ERDT, continue providing grants and scholarships to our young and deserving Filipino students because one scholarship awarded to a Filipino student uplifts the whole family from the vicious cycle of poverty and provides inspiration to his/her community."

JOSEPH R. ORTENERO

PhD in Chemical Engineering (Sandwich Program)
UP Diliman

"In 2017, I wanted to get promoted soon in any government agency. For me to be promoted, I should have a master's degree. I know that taking up a master's degree in IE, specifically the Production Systems track, will help me properly solve the problems in the service/production industry. I applied for ERDT scholarship. It gave me a higher stipend than my net pay, and gave me more time with my family while taking up masters. It also enabled me to finish my master's degree in 2 years. Now, there are a lot of opportunities for research dissemination and promotion. I am also teaching the next generation how to apply IE in the different industries, and especially in their lives."

REGINE A. TEJADA
MS Industrial Engineering
UP Diliman



"ERDT scholarship is an amazing program especially for young Filipino engineers like me who are interested in pursuing graduate studies. With the great help of this scholarship, I was able finish my MS thesis in less than a year, and my degree in three semesters. This scholarship also gave me the opportunity to present my research work in an international conference in Sweden."

JOHN NIKKO V. SALVILLA
MS Energy Engineering
UP Diliman

"The completion, successful defense and presentation of my dissertation entitled 'Iodine-129 as an Environmental Tracer for Groundwater and Hydrological Processes', an assessment of groundwater vulnerability to salinity contamination using a radioisotope of iodine, Iodine-129, was through the help of the Engineering Research and Development for Technology (ERDT) of the Department of Science and Technology (DOST). The program funded my Sandwich Program in MALT, University of Tokyo that helped me gain access to conduct experiments using the Accelerator Mass Spectrometry (AMS), Inductively Coupled Plasma Mass Spectrometry (ICP-MS) and Ion Chromatography (IC)."

SUNSHINE PETAL V. TAN
PhD in Environmental Engineering (Sandwich Program)
UP Diliman



"Through the ERDT scholarship program, I finished my master's degree in Energy Engineering in one of the country's top schools. In my whole two years of graduate studies, DOST-ERDT provided everything I needed that all I have to do was show up and deliver. The work I also poured over my thesis eventually paid for itself after making most of the scholarship's thesis grant, research grant, and dissemination grant. I am so grateful for all the privileges I enjoyed, one is being paid to learn. Truly, there's no scholarship as good as ERDT."

JESSA A. IBAÑEZ
MS Energy Engineering
UP Diliman



PART I:

HUMAN RESOURCE DEVELOPMENT

I. Human Resource Development

A. Local Graduate Scholarship

The ERDT Local Graduate Scholarship is the flagship scholarship program of the ERDT that helps engineering graduate students in pursuing and attaining MS and PhD degrees in any ERDT consortium member university.

This scholarship further aims to improve the quantity and quality of engineering professionals in the country. The adequate number of engineers with advanced degrees is believed to produce compounding effect on the value chain in the industry for economic growth as well as in improving the quality of education in engineering departments of both private and public higher academic institutions.

1. Local MS Scholarship

University	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total Intake
ADMU	0	16	16	20	16	11	14	18	8	13	19	17	13	181
CLSU	0	15	9	13	8	29	27	13	16	25	23	52	40	270
DLSU	0	11	22	34	32	38	18	29	38	39	45	52	35	393
MU	0	8	32	14	16	27	46	37	43	36	41	53	58	411
MSU-IIT	0	10	8	15	21	16	29	26	10	18	29	41	38	261
UPD	55	34	88	85	66	88	89	56	72	84	111	124	92	1044
UPLB	0	0	8	13	4	10	12	18	16	11	17	29	30	168
USC	0	13	15	10	11	2	14	16	29	30	47	43	28	258
Total	55	107	198	204	174	221	249	213	232	256	332	411	334	
Target	106	133	171	208	233	260	233	233	252	263	316	417	358	
Hit Rate (%)	52	80	116	98	75	85	107	91	92	97	105	99	93	

Table 1. Actual intake of MS scholars from 2007 to 2019

Year	Qualifiers	Graduated		On Extension	Ongoing	Non-Availing	Deferred	Non-Complying	Terminated	Withdrew	Deceased
		On Time	With Extension								
2007	55	7	31						12	5	
2008	107	29	54	5		1		1	14	3	
2009	198	31	96	22		3		1	44	1	
2010	204	27	89	19		15		4	46	4	
2011	174	34	76	17	1	9		3	27	7	
2012	221	53	75	27	3	9		6	41	6	1
2013	249	47	97	35	1	3		11	47	7	1
2014	213	53	87	28	11	2		5	24	3	
2015	232	49	96	57	3	3		4	18	2	
2016	256	64	49	98	7	7	1	1	26	3	
2017	332	54	30	167	54	8		2	13	4	
2018	411	10	2	22	353	7	2	1	8	6	
2019	334				293	21	16		2	2	
Total	2986	458	782	497	726	88	19	39	322	53	2

Table 2. Status of MS Scholars

2. Local PhD Scholarship

University	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total Intake
ADMU	0	0	0	2	1	1	2	3	3	4	2	2	0	20
CLSU	0	2	3	1	4	1	2	5	6	3	3	3	4	37
DLSU	0	2	1	2	5	8	6	4	4	5	6	5	8	56
MU	0	1	2	1	7	4	14	5	5	6	7	5	2	59
MSU-IIT	0	2	2	3	3	4	6	8	2	3	4	6	2	45
UPD	18	15	15	13	6	17	8	11	14	17	17	16	13	180
UPLB	0	0	4	3	1	2	4	0	2	2	3	7	1	29
USC	0	0	0	0	0	0	0	3	7	6	7	9	5	37
Total	18	22	27	25	27	37	42	39	43	46	49	53	35	
Target	23	20	32	44	50	55	50	50	56	59	59	57	84	
Hit Rate (%)	78	110	84	57	54	67	84	78	77	78	83	93	42	

Table 3. Actual intake of PhD scholars from 2007 to 2019

Year	Qualifiers	Graduated		On Extension	On Going	Non-Availing	Deferred	Non-Complying	Terminated	Withdrew	Deceased
		On Time	With Extension								
2007	18		11						7		
2008	22		10	2					8	2	
2009	27	3	17	3				1	3		
2010	25	2	13	1		2			6	1	
2011	27	1	12	4		3		1	4	2	
2012	37	4	15	7	6	2		1	2		
2013	42	4	14	17		1		3	2		1
2014	39	7	13	13	2			2	2		
2015	43	7	10	22	1	1			2		
2016	46	4	3	34	2	1			2		
2017	49	2	1	3	37	4		1	1		
2018	53				46	2	4		1		
2019	35				31	1	2			1	
Total	463	34	119	106	125	17	6	9	40	6	1

Table 4. Status of PhD Scholars

3. Research Dissemination Grant

The Research Dissemination Grant (RDG) is provided to ERDT Local Graduate Scholars as a support for when he/she decides to present or publish his/her research works to local and international conferences, fora, scientific meetings, and referred journals.

University	No. of RDG Recipients for 2019	Total Amount Dispersed
ADMU	11	741,366.20
CLSU	4	201,772.30
DLSU	17	1,012,809.16
MU	19	1,160,304.99
MSU-IIT	3	224,830.34
UPD	37	2,114,296.99
UPLB	8	576,831.41
USC	24	622,773.70
Total	123	6,654,985.09

Table 5. Distribution of Approved RDG Applications across Consortium Member Universities

Continent	Country	No. of Presentations
Africa	Tunisia	1
	China	8
Asia	Hong Kong	3
	India	2
	Indonesia	5
	Japan	11
	Lao PDR	1
	Malaysia	8
	Myanmar	1
	Philippines	28
	Singapore	3
	South Korea	10
	Sri Lanka	2
	Taiwan	3
	Thailand	19
	Vietnam	1
Europe	Greece	3
	Malta	1
	United Kingdom	1
North America	Canada	1
	United States of America	6
Oceania	Australia	6

Table 6. Countries where presentation of research works of ERDT scholars took place

B. Foreign Fellowship

The ERDT Sandwich Program is a fellowship designed to enable ERDT local graduate scholars to conduct research in a reputable university abroad in areas that are yet to be developed in the consortium member university or in fields of studies where research facilities are not available or are inadequate in the country. Scholars may avail of this program for a maximum period of one year.

Year of Award	Slots	Actual Intakes	Graduated	Status of Intakes			Ongoing SP Abroad	Withdrew Application
				Ongoing LC	For Monitoring	For Repayment		
2008	7	1	1					
2009	10	3	3					
2010	12	3	3					
2011	8	7	7					
2012	8	5	5					
2013	13	12	10			2		
2014	10	9	8			1		
2015	23	10	9	1				
2016	20	9	6		2			1
2017	17	18	9	7			1	1
2018	11	12	1	3			8	
2019	22	13	2	8			3	
Total	161	102	64	19	2	3	12	2

Table 7. Status of ERDT Sandwich Program Scholars

C. Faculty Development Programs

1. Foreign PhD Scholarship

The ERDT Foreign PhD Scholarship is granted to faculty members of ERDT consortium member universities who wish to pursue PhD studies in any engineering field in a recognized university or institution abroad.

Year	Slots	Actual Intake	Status of Intakes		Returned			Terminated
			Ongoing	On extension	Graduated	For Monitoring	For Repayment	
2006-2008	10	10			7	1		2
2009	10	3			2			1
2010	10	8			5	1		2
2011	11	3			3			
2012	10	7			5			2
2013	8	6		2	3	1		
2014	10	2		1	1			
2015	8	6		2	3			1
2016	11	8	8					
2017	22	12	12					
2018	19	14	14					
2019	22	13	13					
Total	151	92	47	5	29	3		8

Table 8. Status of Foreign PhD Scholars

2. Post-Doctoral Grant

The ERDT Post-Doctoral Grant allows retooling and retaining of faculty members to ensure that researches conducted and proposed under the ERDT program are current and relevant.

Recipients	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
	0	6	2	0	2	0	1	1	1	1	0	1	15

Table 9. Post-Doctoral Grant Recipients from 2008 to 2019

3. Faculty Research Dissemination Grant

The ERDT Faculty Research Dissemination Grant is established to enable faculty members to present their research works in international conferences, fora or scientific meetings or publish their research works in journals.

Recipients	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
	1	17	51	25	32	43	72	62	60	58	67	63	551

Table 10. FRDG Recipients from 2008 to 2019

4. Faculty Research Grant

The ERDT Faculty Research Grant is created to help faculty members who are currently enrolled in ERDT-supported graduate or accelerated programs in an ERDT consortium member university to complete all their requirements leading to a successful thesis/dissertation defense. The grantee shall be considered as an ERDT scholar with lateral entry.

MS												
University	2014		2015		2016		2017		2018		2019	
	Slots	Grantees	Slots	Grantees	Slots	Grantees	Slots	Grantees	Slots	Grantees	Slots	Grantees
ADMU	1						3		1		1	
CLSU			1		1		3					
DLSU												
MU	2						3		1		1	
MSU-IIT	2						3		1		3	
UPD	7	2	6	4	4	2	6	3	4	4	4	2
UPLB	2	2					3		1		1	
USC	2		1	1	1		3		1		1	
Total	16	4	8	5	6	2	24	3	9	4	11	2

Table 11. FRG Recipients from 2014 to 2019 (MS)

MS												
University	2014		2015		2016		2017		2018		2019	
	Slots	Grantees	Slots	Grantees	Slots	Grantees	Slots	Grantees	Slots	Grantees	Slots	Grantees
ADMU												
CLSU												
DLSU	1	1	2	2	2	1	2	2	3	1	3	2
MU												
MSU-IIT												
UPD	1	1										
UPLB												
USC												
Total	2	2	2	2	2	1	2	2	3	1	3	2

Table 12. FRG Recipients from 2014 to 2019 (PhD)

5. Visiting Professors and Researchers Program

The ERDT Visiting Professors and Researchers Program provides for the invitation and hosting of internationally known professors and researchers to visit ERDT consortium member universities.

Beneficiaries of this program include ERDT local graduate scholars, faculty members, and the hosting department/institute of the ERDT consortium university. The ERDT consortium will likewise benefit from this through potential R&D collaboration.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
Visiting Professors	10	21	12	3	9	11	9	12	6	15	10	5	123
Visiting Researchers	1	2	0	0	0	1	0	0	0	0	0	0	4

Table 13. Visiting Professors and Researchers from 2008 to 2019

PART II:

RESEARCH AND DEVELOPMENT

II. Research and Development

The Research and Development (R&D) component of ERDT addresses the lack of quantity and quality of research in engineering by providing opportunities for its scholars to participate and work on projects related to their theses and dissertations. In line with this, ERDT ensures that research works of its scholars are aligned with the National Science and Technology Plan (NSTP) and the Medium Term Development Plan (MTDP) to guarantee that researches conducted are relevant and transferable to the country's benefit.

Below is the List of Projects under the Program "Ambisyon ng ERDT para sa R&D ng Bayan":

Program and included Projects/Sole Project		Proponent	Duration		Budget	
			Opening Year	Closing Year	Proposed to DOST	Total Including Counterpart
Ateneo de Manila University						
The Energy Hub		Erees Queen B. Macabebe			58,544,480.68	69,446,016.13
1	Energy Monitoring for Smart Buildings	Maria Leonora C. Guico			12,705,573.60	15,630,573.60
2	Demand Side Management with RE Sources in Smart Buildings	Erees Queen B. Macabebe			17,042,201.00	20,473,732.45
3	Resource Management in Electric Vehicles	Carlos Oppus			5,807,045.60	7,087,045.60
4	State-of-Charge and State-of-Health of Batteries of E-vehicles and RE Applications	Juan Antonio Marinas			5,071,427.20	6,351,427.20
5	System Integration and Visualization	Andrei D. Coronel			17,918,233.28	19,903,237.28
Central Luzon State University						
Smart Agriculture for Higher Productivity and Efficiency		Ireneo C. Agulto			99,172,202.30	100,774,202.30
1	CREATIVE FARMS: Climate-Resilient Entrepreneurial Agriculture Through Indoor vertical farming System	Ireneo C. Agulto	2020	2021	11,155,866.90	11,155,866.90
2	WATER: Water Adaption of Technologies for Environmental Resiliency for Sustainable Fish and High Value Crops	Ireneo C. Agulto	2020	2021	7,998,184.00	7,998,184.00
3	Alternative Small Scale Irrigation Systems Technologies (ASSIST) for Increased Productivity in Highland Agriculture	Armando N. Espino, Jr.	2021	2021	4,788,400.00	4,788,400.00
4	Automated Furrow Irrigation Systems Technologies (AFIS): A Smart Farm Solution for Improved Yield and Increased Water Productivity	Armando N. Espino, Jr.	2021	2021	4,806,400.00	4,806,400.00

5	Controlled Environment for Recirculating Aquaculture Tank System	Marvin M. Cinense	2020	2020	5,696,803.20	5,696,803.20
6	Design of Nutrient and Climate Change Sensitive Innovative Mushroom Housing for Leaf Litter Degrading and Ligninolytic Mushrooms	Jeffrey A. Lavarias	2020	2020	3,000,000.00	3,000,000.00
7	Establishment of Pilog Village-Scale Mechanized Farming System for Mushroom Production and Processing	Victorino T. Taylan, Marvin T. Valentin	2020	2021	18,116,400.00	18,116,400.00
8	Simulation of Temperature Distribution and Airflow Pattern in Naturally-ventillated Greenhouses in CLSU using Computational Fluid Dynamic	Chito F. Sace	2021	2021	12,526,810.40	12,526,810.40
9	Appropriate Agricultural Mechanization Technologies: A Necessary Component Towards a Green Economy	Helen F. Gavino	2021	2021	7,500,000.00	7,500,000.00
10	Increasing Fuel Efficiency and Improving the Capacity of Land Preparation machine and Equipment for Rice through Retrofitting and Restoration of Machine Components	Victorino T. Taylan	2020	2020	3,597,647.60	3,597,647.60
11	Development and Performance Evaluation of a Small-Scale Carrot Seeder	Marvin T. Valentin	2020	2020	3,701,808.60	4,547,808.60
12	Development and Performance Evaluation of a Small-Scale Vegetable Raised Bed Preparator	Melba D. Denson, Marvin T. Valentin	2021	2021	2,691,233.60	3,447,233.60
13	Earth Hollow Blocks - An Alternative Construction Material	Joseph Frank A. Nagal	2020	2020	1,583,600.00	1,583,600.00
14	Determination of the Effects of Root Zone Cooling on the Growth and Yield of hydroponic Cucumber Using Computational fluid Dynamics	Chito F. Sace	2021	2021	12,009,048.00	12,009,048.00
Mindanao State University - Iligan Institute of Technology						
	Development of Fly-ash Incorporated Materials for Thermal Energy Storage and Construction Applications and their Environmental Implications	Maria Sheila K. Ramos			42,252,095.00	42,252,095.00
	Utilization of Mine Waste for Defense Applications	Ivyleen B. Arugay	August 2018	July 2020	50,708,148.40	50,708,148.40
University of the Philippines Los Baños						
	BUCo I4: Building Up the Coconut Biorefinery for Industry 4.0	Myra G. Borines			154,977,464.03	154,977,464.03
1	Innovative and Value-Added Products from Coconut: Extraction of Phytohormones from Waste Coconut Water Using Biochar Derived from Agricultural Residue	Veronica P. Migo	01 January 2020	31 December 2022	21,466,432.00	21,466,432.00

PART III: ANNUAL EVENTS AND ACIVITIES

III. ANNUAL EVENTS AND ACTIVITIES

In order to accentuate its objectives and complement its programs, ERDT organizes annual events and activities that include Congresses, Conferences, Faculty Trainings, Workshops, and Visiting Professors Lectures. These events and activities are anchored towards the goal of providing opportunities for ERDT scholars to learn from and/or collaborate with people from academe, industry, and government agencies.

The table below shows the list of ERDT events and activities that took place in 2019:

Title of Event/Activity	Theme/Focus	Date	Venue	Resource Persons
Engineering Forum Series	Connected People using Connected Gadgets – Internet of Things	11 January 2019	University of the Philippines Diliman	Dr. Romel Gomez
	Data Science	24 May 2019	University of the Philippines Diliman	Dr. Marsal Gavalda
ERDT Thesis/Dissertation Writing Seminar	---	03 June 2019	Century Park Hotel	Dr. Maria Cecilia G. Conaco Dr. Delia B. Senoro Dr. Fernando D. Paragas Dr. Feorillo Petronilo A. Demeterio III Engr. Evan Dennison S. Livelio Dr. Isabel M. Austria Ms. Maria Rosita A. Mesa
8th ERDT Congress	The Rise of Smart Cities and Communities	23 August 2019	Philippine International Convention Center	Usec. Eliseo M. Rio, Jr. Dr. Hussein S. Lidasan Atty. Joanna Eileen M. Capones Ar. Felino A. Palafox Mr. Bernard Faustino M. Dy Engr. Edgar V. Sabidong
16th ERDT Conference	Engineering for One Health	25 October 2019	Heritage Hotel	Dr. Loinda R. Baldrias Dr. Michael L. Tee Dr. Lilia M. Fernando Dr. Nen-Fu Huang Dr. Lourdes Marie S. Tejero
Staff Learning and Development: Training on Effective Business Writing	---	05-06 December 2019	National Center for Transportation Studies	Ms. Ma. Teresa L. Pacis

A. Visiting Professors Lectures

Title/Topic of Lecture	Visiting Professor	Home Institution	Date(s)	Host University
Electronics and Communications	Dr. Xi Zhua	University of Technology Sydney	21-30 April 2019	Mindanao State University – Iligan Institute of Technology
Biofuel Production and Wastewater Treatment	Dr. Emmanuel D. Revellame	University of Louisiana	05-18 August 2019	University of the Philippines Los Baños
Agricultural Engineering	Dr. Paul R. Armstrong	Unites States Department of Agriculture	September-October 2019	University of the Philippines Los Baños
Wind Engineering	Dr. Nobumasa Sekishita	Toyohashi University	01-29 September 2019	University of San Carlos
Computer Engineering	Dr. Ismail Rakip Karas	Karabuk University	12-20 November 2019	University of the Philippines Diliman


B. Roadshows

Visiting Consortium Member	Date(s)	Host University	Province (Region)
University of the Philippines Diliman	06 March 2019	Biliran Province State University	Biliran (VIII)
University of the Philippines Diliman	22 March 2019	University of Eastern Philippines	Samar (VIII)
Mapua University	04-06 April 2019	Isabela State University	Isabela (II)
University of the Philippines Diliman	16 May 2019	Iloilo Science and Technology University	Iloilo (VI)
University of the Philippines Diliman	17 May 2019	University of the Philippines Visayas	Iloilo (VI)
University of the Philippines Diliman	20 May 2019	Central Philippine University	Iloilo (VI)
Mapua University	27-29 May 2019	Batanes State College	Batanes (II)
Mapua University	27-29 June 2019	University of Mindanao	Davao del Sur (XI)
De La Salle University	02-03 December 2019	University of the Cordilleras	Baguio (CAR)

The first leg of the 2019 Engineering Forum Series was held on 11 January 2019 at the University of the Philippines Diliman. Visiting Professor, Dr. Romel Gomez expounded on the topic "Connected People using Connected Gadgets – Internet of Things". Dr. Gomez is a Professor and Associate Chair for Undergraduate Education in the Department of Electrical and Computer Engineering at the University of Maryland, College Park. His lecture was attended by graduate students and professionals from the following Institutions (in alphabetical order): Ateneo de Manila University; De La Salle University; DOST Advanced Science and Technology Institute; DOST Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development; Mapua University; Mariano Marcos State University; UP College of Engineering; and UP College of Science.

The second leg of the Engineering Forum Series was held on 24 May 2019 also at the University of the Philippines Diliman. It was a lecture on data science that was conducted by Dr. Marsal Gavalda and was attended by ERDT scholars. The lecture revolved around the topics (1) Building a Data Culture/Data Mindset, and (2) How to build conversational AI bots and how it is currently being applied in tech companies in the United States.

Dr. Gavalda is a senior R&D executive with deep expertise in natural language and machine learning technologies. He is currently the head of Machine Learning at *Square*, where he applies automation and machine learning to advance the companies overarching purpose of economic empowerment.



Department of Science and Technology
Science Education Institute
Engineering Research and Development for Technology


University of the Philippines Diliman
University of Maryland

Frontiers in Engineering and Innovation 2019:
1st Engineering Forum Series

Connected People using Connected Gadgets – Internet of Things

Dr. Romel Gomez
Department of Electrical and Computer Engineering
University of Maryland

11 January 2019 at 10 AM - 12 PM
Engineering Theater, 3/F Melchor Hall
UP College of Engineering, Quezon City




Preregistration is required for this free lecture. Seating is limited and on a first come, first served basis.
Preregister online at bit.ly/2QB47FN

—ABSTRACT—

As a society, we are in an era of the "Internet of People" Facebook, YouTube, Instagram, and Twitter, along with a myriad of other social networking sites being ubiquitous and omnipresent. These social media platforms have revolutionized how people communicate and interact with each other, and their impact is felt in nearly all facets of human enterprise including commerce, entertainment, health, and politics. Yet despite its current importance, the Internet of People will soon give way to the "Internet of Things" (IoT). In a few years, our human senses to "see, hear, touch, smell and taste" and our ability to rearrange our environment will be supplemented with innumerable sensors and actuators that collect information, and communicate with one another. These devices will be tightly managed by control algorithms that will make sense of voluminous data and perform appropriate actions to achieve a mission.

This talk and the accompanying workshop are aimed at introducing the critical components of this burgeoning technology, and its potential applications in the Philippine context. I will discuss the elements of the IoT ecosystem from the device level to systems applications. At the foundation of an Internet of Things infrastructure are the microelectronic circuits that perform data acquisition, signal processing and communications within the device. These are performed by integrated circuits and microcontrollers that are incorporated within the device, commonly referred to as "embedded systems." These systems are now ubiquitous in household, health care and transportation systems as well as industrial applications such as power and manufacturing. These are the key elements in home automation products such as Google Home and Amazon Alexa, as well as self-driving vehicle systems such as Alphabet Waymo and Tesla. At the other end are the data analytics, machine learning and control systems that process the information and implement applications. And in-between lies the computing platforms, protocols and gateways that seamlessly connect those devices, and process the data into actionable information while providing security that all is trustworthy and safe. I will provide an overview of how those elements fit together.

The other aim of this visit is to further spur the intellectual activity in embedded systems and IoT in the Philippines. To this end, I will discuss the skills that are most needed, and will discuss a curriculum that adequately prepare engineering students to be gainfully employed and meaningfully contribute in this space. The modern IoT curriculum will provide students with a solid foundation in key emerging technologies of the Internet of Things (IoT), the ability to integrate devices into complete IoT systems, and an understanding of how IoT fits within the wider context of information and communications technology, including data analytics and cloud computing. Potential applications relevant to the needs of the Philippines such as smart agriculture, efficient manufacturing, waste reduction, disaster mitigation, ad hoc communications, healthcare, security, monitoring of aquatic resources, power grid and others will also be discussed.




Department of Science and Technology
Science Education Institute
Engineering Research and Development for Technology

College of Engineering
University of the Philippines Diliman

2nd Engineering Forum Series 2019

A Lecture on Data Science with Dr. Marsal Gavalda

24 May 2019 at 10 AM - 12 NN
Maynilad Room, 3F Melchor Hall,
UP Diliman, Quezon City



TOPICS TO BE COVERED

- Building a Data Culture/Data Mindset
- How to build conversational AI bots and how it is currently being applied in tech companies in the US

Preregistration is required for this free lecture. Seating is limited and on a first come, first served basis.
Preregister online at bit.ly/2M2BZtz

—ABOUT THE SPEAKER—

Marsal Gavalda is a senior R&D executive with deep expertise in natural language and machine learning technologies. Marsal is currently the head of Machine Learning at Square, where he applies automation and machine learning to advance Square's overarching purpose of economic empowerment. Previously, Marsal served as the Director of Research at MindMeld (acquired by Cisco), where he developed MindMeld's conversational AI and anticipatory computing platform. Marsal has also extensive experience in customer interaction and speech analytic space, as he has served as VP and Chief of Research at Verint Systems and as VP of Research and Incubation at Nexidia (acquired by NICE), where he developed disruptive speech analytics solutions for the call center, intelligence, and media markets.

Marsal holds a Ph.D. in Language Technologies and an MS in Computational Linguistics, both from Carnegie Mellon University, and a BS in Computer Science from BarcelonaTech. Marsal is the author of over thirty technical and literary publications, thirteen issued patents, and is fluent in six languages. He is also a frequent speaker at academic and industry conferences and organizes, every summer, a science and humanities summit in his hometown of Barcelona on topics as diverse as machine translation, music, or the neuroscience of free will.

ERDT Thesis/Dissertation Writing Seminar



To complement the 2018 Faculty Research Mentoring Workshop, ERDT conducted a Thesis/Dissertation Writing Seminar which was principally designed for MS and PhD students who have just started or about to begin writing their research papers.

Attended by scholars from the eight ERDT Consortium member universities, the Seminar was held on 03 June 2019 at Century Park Hotel in Manila. In her opening speech, Dr. Rizalinda De Leon delve on one of the pressing problems in the country's R&D culture. According to her, the reality is that different technologies are produced but are not utilized because there is no market for them. Taking this into account, Dr. De Leon encouraged the participants to consider looking for possible niches or to internalize who they are developing the technology for before embarking in the actual process of coming up with one.

Covering the topic, "Planning and Structuring the Thesis/Dissertation", Dr. Cecilia

Coonaco presented an overview of the research cycle and gave tips on how to accomplish the different parts of a thesis or dissertation paper. Following the talk of Dr. Conaco was the discussion on the topic "Writing the Literature Review and Effective Referencing" led by Dr. Delia Senoro. In the course of her presentation, Dr. Senoro offered an ideal model to address the R&D dilemma previously mentioned by Dr. De Leon. Aside from their research interests, Dr. Senoro asked the participants to try to identify what societal problems they want to address and use it to direct their researches. The last speaker for the morning session was Dr. Fernando Paragas who started his talk by presenting the misconceptions index. It showed that despite being the third least accurate country, Philippines also ranked third in being the most confident in its answer. Relating this to the topic "Organizing Chapters and Ensuring Thought Cohesion", he asked the participants to conceptualize what they ought to transcend in each chapter in order to keep the presentation of ideas concise and organized.



Resource speakers answering questions from the audience during the Open Forum

For the afternoon session, Dr. Feorillo Demeterio presented a comparative analysis between models of research universities in the Philippines and in abroad. He identified the challenges in the mentoring framework in the country and provided points on how the participants can work around this model in order to receive proper guidance and feedback from their research advisers. To cap the technical discussions, Dr. Isabel Austria and Mr. Evan Livelo, ERDT early graduate scholars, shared their experiences and some key points on how they were able to accomplish their research works in their session entitled "Strategies for Effective Thesis/Dissertation Writing".



L-R: Dr. Demeterio, Engr. Livelo, Dr. Austria, and Ms. Mesa

A short session on mindfulness was also facilitated in order to help ERDT scholars cope with the stress that comes along the process of thesis/dissertation writing.

Finally, Engr. Albert Mariño reminded the participants that researches should be purposeful and translatable. He emphasized how the participants, as the country's future RSEs, should be able to empathize and identify with the regular Filipino in order to find the greater purpose embedded in their tracks.



Engr. Mariño delivering the Closing Remarks



With the theme, “The Rise of Smart Cities and Communities”, ERDT hosted its 8th Congress last 23 August 2019 at the Reception Hall of the Philippine International Convention Center. The 8th ERDT Congress was attended by scholars and faculty members from across the eight ERDT consortium member universities. As well as delegates from other government agencies and select private institutions.

In his keynote speech, Usec. Eliso M. Rio, Jr. of the Department of Information and Communications Technology talked about the direction and efforts of DICT towards enhancing and strengthening the country’s infostructure in convergence to Industry 4.0. He emphasized how competition in the telecommunications sector affect the development of ‘intelligent’ cities and communities--- highlighting the role of the government in regulating players in order to deliver quality products and services that will be the backbone of efficient and people-centered processes.

First among the plenary speakers is Dr. Hussein S. Lidasan, Dean of the University of the Philippines’ School of Urban and Regional Planning. Dean Lidasan begun by instituting the idea that ICT shall be incorporated in urban planning in order to come up with smart city concepts. According to him, there are five challenges facing those advocating for smart city solutions. These are: *infrastructure, security and hackers, privacy concerns, educating and engaging communities, and being*

socially inclusive. In order to address these challenges, Dr. Lidasan emphasized the importance of planning and road mapping for smart city development considering that local government units have different capacities, needs, and goals.



L-R: Dr. Alamani, Usec. Rio, Dr. De Leon, Atty. Capones, and Dr. Lidasan

Atty. Joanna Eileen Capones, Vice President for Investment Promotions and Marketing of the Bases Conversion and Development Authority delivered an overview presentation on the New Clark City which is dubbed to be the “city of the future”. Atty. Capones explained that the New Clark City is just one of the four main districts comprising the 32,000-hectare property being developed. Among the key features of the New Clark City are disaster-resiliency and connectivity, boasting that it is a city crafted to be built for people and to drive economic growth.

The afternoon plenary session begun with the presentation of Architect Felino “Jun” Palafox, Managing Partner and Principal Architect of Palafox Associates. Ar. Palafox focused on how the application of smart mobility concepts and climate resiliency features in urban landscape can effectively address the effects and rising demands of urban development and climate change. Backed with studies, research, and experience, Ar. Palafox further argues that it is 90% less expensive to address hazards before they become disasters. As such, good public-private partnerships from planning to execution is necessary in order create safe, smart, sustainable, more livable, and resilient cities and communities.

To provide a closer look at how excellence in the delivery of social services can be achieved through information and communications technology, Mayor Bernard Faustino M. Dy of Cauayan, Isabela talked about their Smarter City Projects which are intended to support and promote smarter MSMEs, health care, agriculture, climate change adaptation, transportation, solid waste management, jobs, and government.



L-R: Dr. Alamani, Engr. Sabidong, Ar. Palafox, Mayor Dy, and Dr. De Leon

As the last plenary speaker, Engr. Edgar V. Sabidong, Chair of the Philippine Green Building Council, talked about Sustainable Developments Leading to Smart Cities and Communities. In his presentation, Engr. Sabidong focused on how green building concepts can be used to promote sustainability and to properly mitigate the effects of climate change. These include, land use ecology, *native and adaptive plants*, use of *non-portable water*, drip irrigation, and other means to ensure energy and material resource efficiency.

The recipients of the best poster awards are:

R&D Track	Title of Poster	Presenting Author	Co-Authors	Institution
Energy	Combined Mixture Designed Experiments and Bioreactors Studies on the Ethanol Fermentation Behavior of Two Evolutionary Engineered <i>Saccharomyces cerevisiae</i> Strains in Glucose-Xylose Mixtures	John Nikko Salvilla	Fidel Rey P. Nayve, Catalino G. Alfara	University of the Philippines Los Baños
Environment and Infrastructure	Seismic Risk of Metro Manila DPWH Bridges	Eden S. Ditchella	Andres Winston C. Oreta	De La Salle University
Information and Communications Technology	Low-Cost Lora-Based Transmission System for Weather Balloon	May Anne C. Valencia		Mapúa University
Manufacturing and Machinery	Microwave Drying of Stingless Bee Pollens	Franz Z. Miranda	Carolyn Grace G. Somera	Central Luzon State University
Semiconductor Materials and Electronics	Optimization of Decellularization Parameters in Developing Renal Extracellular matrix Scaffolds from Porcine Kidney	Tosha Mae Manalastas	Nathaniel P. Dugos, Glicería B. Ramos	De La Salle University

16th ERDT Conference



The 16th Engineering Research and Development for Technology Conference was held on 25 October 2019 at Heritage Hotel in Pasay City. It was attended by almost 300 participants from the eight ERDT consortium member universities who were welcomed by the new Program Leader of ERDT, Prof. Ferdinand G. Manegdeg.



Prof. Ferdinand G. Manegdeg welcoming the participants to the Conference

With the theme “Engineering for One Health”, the Conference’s plenary session was anchored mainly on engineering innovations and solutions directed towards the advancement of the quality of health of humans, animals, and the environment. Dr. Loinda R. Baldrias began the morning plenary by providing an overview on *one health*. She further highlighted the relevance of biomedical engineering as a multidisciplinary STEM field that combines biological knowledge and engineering principles to address medical needs.

In his plenary talk entitled “*Innovations in Early Detection and Interventions for One Health*”, Dr. Michael L. Tee explained that usually, when people and governments recognize agricultural-borne diseases and zoonotic diseases, they tend to focus only on

how to cure these diseases as they manifest in humans, thereby failing to address what might be the root of these problems. For instance, this characterization is manifested in the outbreak of African Swine Flu in the Philippines. Given this, Dr. Tee emphasized on the need to propose engineering solutions with a one health perspective in order to make information accessible to the general public and enable policy makers to make decisions based on data-driven recommendations.

As third speaker, Dr. Lilia M. Fernando talked about “*Nanobiosensors for the Detection of Pathogens*”.



L-R: Dr. Nen-Fu Huang, Dr. Lilia M. Fernando, Dr. Gerald Jo C. Denoga, Dr. Lourdes Marie S. Tejero, Dr. Loinda R. Baldrias, Dr. Michael L. Tee, and Dr. Arnold R. Elepaño

In her presentation, Dr. Fernando stressed the need for the development of new rapid and sensitive detection and identification technologies for microbial agents and shared projects that revolve around the use of nanobiosensors on different applications.

Guest speaker Dr. Nen-Fu Huang from Taiwan’s National Tsinghua University, expounded on the topic “*Complete Food Traceability for One Health with AIoT*”

Technologies". Dr. Huang contends that traditional agriculture needs the boost of ICT. He posits that IoT, robotics, and automation are essential in increasing crop quantity and quality, which will further translate to food security, and increase in farmers' revenue.

Dr. Lourdes Marie S. Tejero capped the plenary session with the topic, "*Business Opportunities and Collaborations in Engineering for One Health*". Dr. Tejero argues that engineering solutions are at the peak of addressing pain points in healthcare and shared the components of Stanford's Biodesign Process which are (1) *identifying*, (2) *inventing*, and (3) *implementing*. Enabling the participants to know how biodesign teams pitch their ideas and technologies to the healthcare market.

Presentations of more than fifty entries submitted to the different ERDT R&D tracks were conducted in the afternoon breakout sessions. Below are the Best Paper Awardees:

R&D Track	Title of Poster	Presenting Author	Co-Authors	Institution
Energy	An Assessment on the Nationwide Solid Waste-to-Energy Potential Model Development in the Philippines	Ronald Allan Co	Enrico Paringit	University of the Philippines Diliman
Environment and Infrastructure	Laboratory Pullout Test of Geogrid Reinforcements for Submerged Mechanically Stabilized Earth for Waterfront Applications	Allan E. Botuyan		Mindanao State University – Iligan Institute of Technology
	Solution Blow Spinning (SBS)-PAN-assisted Cellulose Nanofiber Membrane	Glebert C. Dadol	Kramer Joseph A. Lim, Luis K. Cabatingan, Noel Peter B. Tan	University of San Carlos
Information and Communications Technology	Comparison of High-Level Musical Feature Sets and Distance Metrics in the Recommendation of Classical Music	Ana Felicia T. Cruz	Andrei D. Coronel	Ateneo de Manila University
Manufacturing and Machinery	Design, Fabrication and Performance Evaluation of Cashew Apple (<i>Anacardium occidentale</i> L.) Slicing Machine	Kay J. Jaranilla	Helen F. Gavino, Romeo B. Gavino, Carolyn Grace G. Somera	Central Luzon State University
Semiconductor Materials and Electronics	Detection of Chlorpyrifos-methyl Pesticide Residue in Rough, Brown and Milled Rice using an LED-based NIR Instrument	Fatima S. Rodriguez	Paul R. Armstrong, Elizabeth B. Maghirang, Erin D. Scully, Frank H. Arthur, Daniel L. Brabec	University of the Philippines Los Baños

Training on Effective Business Writing

For the first leg of the ERDT Staff Learning and Development program, a training on *Effective Business Writing* for ERDT Science Research Specialists and support staff was conducted on 5-6 December 2019 at the Toyota Training Room, National Center for Transportation Studies.

The Staff Learning and Development program was developed with the goal of enhancing the competencies of ERDT staff to enable them to cope with the growing demands and the rising number of deliverables expected from them as the program's beneficiaries continue to expand. This is anchored to the belief that L&D interventions mold high-performing individuals who in turn, make up high-performing organizations.

Facilitated by Ms. Ma. Teresa L. Pacis of the Philippine Trade Training Center, the training was a mixture of plenary discussions, group work, and individual exercises.

Participants were able to pick up tips and techniques on writing common types of business communication, as well as proper decorum in communicating online for business.



ERDT Science Research Specialists and support staff posing for a photo with Ms. Teresa Pacis at the end of their 2-day training



Participants doing their individual exercise

ANNEXES

List of MS Graduates

ANNEX A

Name		Degree Conferred	Title of Thesis	Date of Graduation/ Completion
Ateneo de Manila University				
1	Abrigo , Angelu Bianca C.	MS Computer Science	Modeling the Spread of Health Information Using Social Network Analysis: Understanding Public Perception on Dengvaxia	July 2019
2	Bardeloza , Dean Karlo D.	MS Electronics, Computer, and Communications Engineering	Towards Vulnerability Mapping on High Resolution Aerial Images by the Ateneo Innovation Center: Roof Detection, GIS, and Machine Learning Techniques	June 2019
3	Chan , Aaron Keith Y.	MS Electronics, Computer, and Communications Engineering	Photovoltaic System Performance Model for Output Power Forecasting	July 2019
4	Cruz , Ana Felicia T.	MS Computer Science	Towards Developing a Content-based Recommendation System for Classical Music	December 2019
5	Dela Cruz , Jane Arleth L.	MS Electronics, Computer and Communications Engineering	Design of a Disaster Information System Using Mobile Cloud Wireless Mesh with Delay Tolerant Network	June 2019
6	Parocha , Raymark C.	MS Electronics, Computer, and Communications Engineering	Implementation of Home Automation System Using Openhab Framework For Heterogeneous IoT Devices	December 2019
7	Wenceslao , Stephen John Matthew C.	MS Computer Science	Towards the Development of a Blockchain-Enabled Voice-To-Text Transcriber Plugin in an Electronic Medical Record for Doctor-Patient Conversations	July 2019
Central Luzon State University				
8	Abad , Jordan L.	MS Agricultural Engineering	Development of an Oyster Mushroom (Pleurotus Spp.) Substrate Compactor-Bagger	June 2019
9	Almoguera , Laurence G.	MS Agricultural Engineering	Modified Mangrove Pens for Polyculture System in Mudcrab (Scylla serrata) and Milkfish (Chanos chanos) Production	June 2019
10	Astoveza , Monalyn P.	MS Agricultural Engineering	Design, Fabrication and Performance Evaluation of a Batch-Type Ginger (Zingiber officinale R.) Washer	June 2019
11	Austria , Jessa C.	MS Agricultural Engineering	Development of a Pull-type Onion (Allium cepa L.) Sowing Machine for Seedbed	June 2019
12	Calmada , Asir B., Jr.	MS Agricultural Engineering	Design, Fabrication and Evaluation of a Mechanical Sheller for Pilinut (Canarium ovatum Engl.)	June 2019
13	Casnor , Rakim B.	MS Agricultural Engineering	Development of Chicken (Gallus gallus domesticus) Defeathering Machine	February 2019

List of MS Graduates

ANNEX A

14	Dumaguing, Helaisha Nissi R.	MS Agricultural Engineering	Indoor Farm Technology With Hydroponic System for Cucumber (Cucumis Sativus L.) Production	June 2019
15	Ferrera, Al Owen Roy A.	MS Agricultural Engineering	Indoor Farming Technology for Head Type Lettuce Production at Different Photoperiods and Chamber Temperatures	June 2019
16	Garcia, Ronald E.	MS Agricultural Engineering	Development of a Blade-Type Coconut Dehusking Machine for Copra Production in the Philippines	February 2019
17	Gatchalian, Shiela Marie F.	MS Agricultural Engineering	Indoor Farm Technology for Cherry Tomato (Lycopersicon esculentum var. cerasiforme) Production at Varying Temperatures and Photoperiods	June 2019
18	Hilario, Judith M.	MS Agricultural Engineering	Application of Automated Control for Reflux Hydrous Bioethanol Distiller Design, Fabricate and Performance Evaluation of Cashew Apple (Anacardium occidentale L.) Slicing Machine	June 2019
19	Jaranilla, Kay J.	MS Agricultural Engineering	Development of an Onion (Allium cepa L.) Harvester	June 2019
20	Medina, Melissa R.	MS Agricultural Engineering	Optimizing Pumped Water Utilization using Modified Water for Drip Irrigation Design, Fabrication and Evaluation of a Hybrid Household-Type Biogas Plant for Backyard Swine Farming	June 2019
21	Quipo, June C.	MS Agricultural Engineering		June 2019
22	Sibuma, Jonard R.	MS Agricultural Engineering		June 2019
De La Salle University				
23	Alonzo, Lea Monica B.	MS Manufacturing Engineering and Management	A Biometric Recognition System Through Photoplethysmogram (Ppg) Signals	August 2019
24	Brillantes, Allysa Kate M.	MS Electronics and Communications Engineering	Recognition of Hybrid Graphic-Text License Plates	December 2019
25	Carandang, Abraham Matthew S.	MS Civil Engineering	A Resilience Index of a Water Lifeline System Using an Optimized Restoration Energy	December 2019
26	Castro, Jhun Christopher M.	MS Civil Engineering	Accesibility and Travel Mode Choice of Residents in the Island Province of Marinduque, Philippines	December 2019
27	Chioson, Franchescka B.	MS Manufacturing Engineering and Management	Haptic Feedback Controller For Robotic Minimally Invasive Surgery	August 2019
28	Español, Jason L.	MS Electronics and Communications Engineering	An Intelligent Motion Controller for Estimation and Compensation of Unknown Slippage of a Tracked Mobile Manipulator	August 2019
29	Gundran, Julius Ezra M.	MS Mechanical Engineering	Design And Development of An Electric Vehicle Battery Cooling System	August 2019

List of MS Graduates

ANNEX A

30	Ligutan , Dino Dominic F.	MS Electronics and Communications Engineering	Development of An Intuitive Control for Robot Arm With Haptic Feedback	December 2019
31	Lindo , Delfin Enrique G.	MS Manufacturing Engineering and Management	A Non-Assembly Design of A 3D Printed End Effector For A Jointed Articulating Laparoscopic Tool	April 2019
32	Madria , Wira F.	MS Industrial Engineering	The Effect of Plastic Take-Out Container Attributes on Consumer Recycling Behavior	August 2019
33	Manalastas , Tosha Mae S.	MS Chemical Engineering	Optimization of Decellularization Parameters in Developing Renal Extracellular Matrix Scaffold from Porcine Kidney	August 2019
34	Munsayac , Francisco Emmanuel T., Jr III	MS Manufacturing Engineering and Management	Design and Analysis of a Robotic Articulating Laparoscopic Instrument End Effector	April 2019
35	Ng , Francis Gregory L.	MS Mechanical Engineering	Configuration Enhancement for the Flight Endurance of a Separate-Lift-and- Thrust Hybrid Unmanned Aerial Vehicle using Gaussian Process Optimization	December 2019
36	Ng , Calvin Alexander A.	MS Mechanical Engineering	Development of a UAV with Hand Gesture Recognition using Deep Learning	December 2019
37	Ngo , Patrick Shaun N.	MS Civil Engineering	Assessment of Coastal Flooding And Wave Overtopping of The Tide Embankment Section In Tacloban City: An Experimental And Numerical Study	December 2019
38	Ong , Karl Benedict	MS Industrial Engineering	Partial Least Squares Modelling of Classroom Layouts To Learning Motivation And Student Performance	August 2019
39	Puno , John Carlo V.	MS Electronics and Communications Engineering	A Nutrient Film Technique Hydroponics System For Lettuce	April 2019
40	Rivera , Diana Rose T.	MS Mechanical Engineering	Life Cycle Assessment of Torrefied Microalgae Biomass Using Torrefaction Severity Index	August 2019
41	Tan Ai , Richard Josiah C.	MS Manufacturing Engineering and Management	Semantic 3D Mapping for Dynamic Environments	December 2019
42	Tan , Jomari F.	MS Civil Engineering	Recycled Gypsum and Rice Husk Ash as Additives in the Stabilization of Expansive Soil	April 2019
43	Tatel , Nonito John	MS Chemical Engineering	Bioethanol Production From The Microalgae Chlorella Sorokiniana Through Simultaneous Saccharification And Fermentation Using Saccharomyces Cerevisiae	December 2019

List of MS Graduates

ANNEX A

44	Valbuena , Kigia R.	MS Civil Engineering	Optimization of the Strength Properties of Expansive Soil Stabilized with Agricultural Wastes	December 2019
45	Villaluna , Winfred Louie D.	MS Computer Science	Extracting and Encoding Event Sequences for Use in Recurrent Neural Networks	December 2019
Mapua University				
46	Adornado , Adonis P.	MS Chemical Engineering	Modeling Single-Effect Absorption Chiller using Water+Lithium Bromide + Ethylene Glycol in ASPEN Plus	April 2019
47	Amboy , Jefril M.	MS Electronics Engineering	Optimization of the Dip Coating Parameters for Depositing Cesium Lead Halide Perovskite Quantum Dot Films on Gallium Arsenide Substrates	April 2019
48	Balakit , Raymart B.	MS Electronics Engineering	Sonde Instrumentation for Upper-air Weather Monitoring System	April 2019
49	Biglete , Emmanuelle R.	MS Mechanical Engineering	Characterization of Mechanical Properties of ABS parts using Grey-based Taguchi Methods	April 2019
50	Cabalag , Maria Virginia	MS Civil Engineering	Variation Prognostic Model on Port Infrastructures: Employment of Principal Component Analysis for Factor Extraction Instigating Disparity on Planning and Implementation Phase	April 2019
51	Cabuñas , Jay T.	MS Civil Engineering	Exploratory Factor-Item Analytic Approach for Construction Project Cost Overrun using Oblique Promax Rotation for Predictors Determination	April 2019
52	Caculitan , Ranielle Mae P.	MS Electrical Engineering		January 2019
53	David , Daryl D.	MS Electronics Engineering	E-Buriki: A Rice Grain Analyzer for Length, Moisture Content and Whiteness of Milled Rice Grains	January 2019
54	Escoto , Bryan E.	MS Electrical Engineering	Thermoelectric Generation System with Maximum Power Point Tracking Algorithm	January 2019
55	Gapuz , Charlyn May A.	MS Electrical Engineering	Utilizing Wind Vibration from Vehicular Airdrag using Microwind Harnessing Device	July 2019
56	Lamboloto , Al Ivan G.	MS Electronics Engineering	Design and Implementation of Internet of Things (IoT)-Based Facial Expression Recognition with Support Vector Machine Algorithm Application to Infant	April 2019
57	Lindo , Mark Kenneth M.	MS Civil Engineering	Returning Green through Engineering: Utilization of Monte Carlo Simulation in Assessing Potential Lifetime Value of Conventional and Sustainable Building	April 2019
58	Macariola , Roderick N.	MS Civil Engineering	Development of a Data Flow Diagram-Based Knowledge Management System for Mitigating Delays for Construction Projects	April 2019

List of MS Graduates

ANNEX A

59	Malaylay, Rochelle A.	MS Environmental Engineering		January 2019
60	Montealegre, Airon Gail M.	MS Electronics Engineering	Fish Aggregating Lighting System for Stationary Lift Nets in Cavite City Cost Using Colored Submersible Lights and Fish Finders Device	July 2019
61	Quizan, Dexrey John P.	MS Electrical Engineering	Matlab Simulation of Solar Photovoltaic Integration for Levelized Cost of Electricity (LCOE) using Genetic Algorithm	January 2019
62	Realuyo, Erickneil D.	MS Civil Engineering		July 2019
63	Samortin, Angelica C.	MS Electronics Engineering	The Utilization if Electromagnetic Radiation in Inactivating Staphylococcus aureus	January 2019
64	Suliva, Kevin M.	MS Electrical Engineering	Bicol Region Wind Load Calculator (Online Application)	July 2019
65	Tiu, RJ Lawrence C.	MS Mechanical Engineering	Development of an Autonomous Two- wheeled Robotic Stacker Prototype	January 2019
66	Tolentino, Marvin S.	MS Chemical Engineering	Adsorptive Removal of Multi-Metal Ions in Wastewater using Electrospun Cellulose Acetate/Iron-Modified Nanozeolite Nanostructured Membrane	April 2019
67	Untalan, Leah H.	MS Civil Engineering	Development, Design and Evaluation of 'Green Earth Blocks' with the Utilization of Rice Husk Ash and Lahar	January 2019
68	Valencia, May Anne C.	MS Electronics Engineering	Low-Cost LoRa-Based Transmission System for Weather Balloon	April 2019
69	Vasquez, Alfred G.	MS Electrical Engineering	Network Modeling for Distribution System on Feeder Losses Using Artificial Neural Network	April 2019
70	Viray, Vilmark M.	MS Electronics Engineering	Data Collection using Unmanned Aerial Vehicle (UAV) for Remote Sensor Nodes	April 2019
Mindanao State University – Iligan Institute of Technology				
71	Belivestre, Cindy May C.	MS Mechanical Engineering	Propulsion Requirement and Analysis of a Canard Prandtl-Wing Unmanned Aerial Vehicle Platform for Civilian Oriented Missions	December 2019
72	Buisan, Zainodin A.	MS Civil Engineering	The Impact of Sound Land Use Management to Mitigate Flooding in Tamontaka River Basin in Kabuntalan, Maguindanao, BARMM	December 2020
73	Gamones, Peter Andrew U.	MS Civil Engineering	Development of Seismic Fragility Curves for the Highway Bridges in Cagayan de Oro	June 2019
74	Jimenez, Kresil Joy P.	MS Electrical Engineering	Self-biase 2.4 GHZ CMOS RF-TO-DC Converter with 80% Efficiency and -22.04 dBm Sensitivity for Wi-Fi Energy Harvesting	December 2019
University of the Philippines Diliman				
75	Abad, Earl Andrea G.	MS Computer Science	On The Release of Differentially Private Graph Statistics and Synthetic Graphs	December 2019

List of MS Graduates

ANNEX A

76	Alfeche , Dale Mhar B.	MS Materials Science and Engineering	Assessment of the Photocatalytic Performance and Stability of TiO ₂ Coated ZnO Nanostructured Thin Films for Methylene Blue Degradation	May 2019
77	Arocena , Virgel M.	MS Mechanical Engineering	CFD Analysis of Flow Field in Pump Sump with Physical Model Validation and Development of a Comprehensive Numerical Model for Performance Optimization	December 2019
78	Arriola , Emmanuel R.	MS Energy Engineering	Evaluation of Self-heating Phenomenon during Post-Torrefaction of Biomass	July 2019
79	Bagares , Rengie P.	MS Civil Engineering	Groundwater Recharge Estimation for Sustainable Domestic Water Use: A Case Study for the Talabaan Riverbasin in Misamis Oriental	May 2019
80	Barte , Emely G.	MS Environmental Engineering	Synthesis, Characterization and Application of Cu-Bipyridine/Co-2-Methylimidazole Metal-Organic Framework Photocatalysts in the Degradation of Acridine Orange and Sulfametoxazole under Visible Light Irradiation	December 2019
81	Bayon , Lester Lee E.	MS Environmental Engineering	Recovery of copper, cobalt and phosphorous from semiconductor wastewater through fluidized-bed homogeneous granulation: On the crystallization of metal phosphates	May 2019
82	Bello , Jean Raynell S.	MS Chemical Engineering	Electrospun Natural Rubber/Poly(vinylidene difluoride) (PVDF) Nanofibers for Cell and Tissue Explant Culture	May 2019
83	Benipayo , Ariana B.	MS Energy Engineering	Preparation and Characterization of Porous LSM-YSZ Composite Electrode via Solid-State Reaction and Glycine-Nitrate Process for Solid Oxide Electrochemical Cell Applications	May 2019
84	Cordero , Allen Mathew F.	MS Chemical Engineering	Determination of Possible Inhibitors of NS2b-NS3 Protease, a Known Dengue Virus Replication Complex, Using Molecular Modeling	December 2019
85	De Guzman , Dexby P.	MS Chemical Engineering	Optimization and Kinetics of SnCl ₂ -HCl Catalyzed Hydrothermal Conversion of Microcrystalline Cellulose to Levulinic Acid	December 2019
86	De la Vega , Sandi G.	MS Industrial Engineering	A Store-based Grocery Assortment Planning Model Incorporating Variety and a Substitution Mechanism	July 2019
87	De Silos , Paolo Yves L.	MS Energy Engineering	Production and Characterization of Sol-Gel Processed Microencapsulated Lauric Acid-Based Phase Change Material from Treated Waste Coconut Oil	December 2019

List of MS Graduates

ANNEX A

88	Demoral , Alnie A.	MS Energy Engineering	Techno-economic assessment of Carbon Capture and Storage (CCS) deployment in coal power plants in the Philippines	December 2019
89	Fernandez , Randy Joseph G.	M Electrical Engineering	N/A	May 2019
90	Frago , Rodel M.	MS Mechanical Engineering	Bending Stiffness and Dynamic Mechanical Properties of Filament-Wound Glass Fiber-Reinforced Thermosetting Resin Pipe with Non-reinforced Resin Internal Lining	May 2019
91	Garete , April Joy H.	MS Metallurgical Engineering	Optimization and Kinetics of Silver Precipitation from Gold Refining Solutions Using Anhydrous Glucose (C ₆ H ₁₂ O ₆) as Reductant	May 2019
92	Gerna , Lheander G.	MS Energy Engineering	Energy Demand Modeling for the Philippine Cement Industry Sector	May 2019
93	Gorre , Regino Jr. C.	MS Chemical Engineering	Solvent and Non-Solvent Selection for the Chemical Recycling of Waste Polyethylene (PE) and Polypropylene (PP) Metallized Film Packaging Materials	May 2019
94	Gumaling , Riza P.	MS Environmental Engineering	Treatment of Cartap Wastewater through Electro-Fenton Process	May 2019
95	Ibanez , Jessa A.	MS Energy Engineering	Causal Relationship between Energy Consumption, Economic Growth, and CO ₂ Emissions in the Philippines	May 2019
96	Lagrama , Alyssa	MS Energy Engineering	Analysis on Effects of Variability of Solar and Wind Energy and Reserve Planning in Luzon (Philippine) Grid	May 2019
97	Lao , Marco R.	MS Energy Engineering	Consolidated Bioprocessing of Napier (Pennisetum purpureum) for Bioethanol Productivity by Fusarium moniliforme	May 2019
98	Lasala , Klarissa Mai M.	MS Environmental Engineering	Using Waste Generation Input-Output Table as a Decision Support Tool for Waste Diversion Strategies: Applied to Naga City	May 2019
99	Lasquites , Juztine Jane S.	MS Geomatics Engineering	GIS-Based Suitability Mapping for Sargassum Mariculture in the Eastern Coast of Southern Leyte	May 2019
100	Lopez , Joe Carmel T.	MS Electrical Engineering	Model Predictive Control-based Energy Minimization for Electric Vehicle	May 2019
101	Luzong , Alvin B.	MS Civil Engineering	Development of 3D Finite Element Method Tool Using Quadratic Hexahedron Mesh and Non-Destructive Test Results for Application to Seismic Evaluation of Heritage Unreinforced Masonry Structures	December 2019
102	Macalalad , Mark Andrian B.	MS Chemical Engineering	Inhibitory Activity of Phytochemicals from Centella asiatica to Target Proteins (ACE and SGLT-2), related to Hypertension and Diabetes through Molecular Modeling	December 2019

List of MS Graduates

ANNEX A

103	Manalo , Agnes L.	MS Materials Science and Engineering	Thin Film Deposition of NiO-YSZ Composite Cathode Material for Solid Oxide Electrolysis Cell via Screen-Printing	May 2019
104	Mirandilla , Jean Rochielle F.	MS Geomatics Engineering	Detection and Differentiation of Selected Rice Diseases Using Hyperspectral Data	December 2019
105	Montefalcon , Micah Flor V.	MS Environmental Engineering	A Comparison of Arsenic(III) Removal in Aqueous Solution in Electrocoagulation, Electrochemical Peroxidation, and Photo-assisted Electrochemical Peroxidation Process	December 2019
106	Nablo , Geoffrey Ray L.	MS Metallurgical Engineering	Kinetics of Pyrite Oxidation in Simulated Mine Tailings Pond Conditions	May 2019
107	Nobleza , Bryan Joseph C.	MS Energy Engineering	A LEAP Based Optimization Model for Generation Expansion Planning for the Philippines	May 2019
108	Nolasco , Jirah Emmanuel T.	MS Chemical Engineering	Batch and Fixed-Bed Column Studies for the Adsorptive Removal of Methyl Orange from Water Using Polyethyleneimine-Graphene Oxide Polymer Nanocomposite Beads	May 2019
109	Olegario , Neil Karlo Z.	MS Chemical Engineering	In Silico Identification of Bioactive Gibberellin Ligands for GIDI, a Soluble Rice Receptor	December 2019
110	Orden , France Marie M.	MS Mechanical Engineering	Design and Analysis of Incorporating Two Ejectors for Compression Recovery in the Inlet and Outlet Points of the Compressor in a Vapor Compression System	December 2019
111	Osorio , Ezra D.	MS Environmental Engineering	Ubiquity of Microplastics in the Surface Waters and Sediments Sampled for Five Identified River Mouths of Manila Bay	May 2019
112	Panganiban , Francis C.	MS Electrical Engineering	Automated Stress-Relieving Music Recommendation Systems Using Smartphone Extracted Photoplethysmography	December 2019
113	Pastor , Brent Owen G.	MS Chemical Engineering	Generation of Optimized Formation Charging Protocol for Lead-acid Automotive Batteries using Artificial Neural Networks and Sequential Genetic Algorithm Optimization	December 2019
114	Petalio , Michael S.	MS Energy Engineering	Regional Residential Energy Demand Modeling of the Philippine	May 2019
115	Pineda , Riza Rae A.	MS Computer Science	Behavior Classification of Plectroglyphidodon lacrymatus Using Deep Neural Networks	July 2019
116	Pinque , Marbert D.	MS Chemical Engineering	Photocatalytic Hydrogen Production via Water Splitting using 2D-2D MoS ₂ /CdS under Visible Light Irradiation	December 2019
117	Quimada , Nathaniel E.	MS Environmental Engineering	Treatment of Printed Circuit Board Wastewater Containing Copper and Nickel Ions by Fluidized-bed Homogeneous Granulation Process	May 2019

List of MS Graduates

ANNEX A

118	Ramos , Ma. Louise Margaret A.	MS Civil Engineering	Graphene-Modified Concrete: Its Properties and Microstructure	May 2019
119	Reyes , Christian B.	MS Civil Engineering	Investigation of Effectiveness and Applicability of Swimming Pools as Liquid Damper in High-Rise Buildings	July 2019
120	Rodriguez , Joash P.	M Electrical Engineering	N/A	December 2019
121	Salvilla , John Nikko V.	MS Energy Engineering	Co-Pyrolysis of Corn Stover, Narra, and Ipil Wastes with Low-Density Polyethylene, High-Density Polyethylene, and Polypropylene: Optimization Based on Synergy	May 2019
122	Santos , Darcie Rae P.	MS Mechanical Engineering	Investigation on the Effects of Disk Spacing, Thickness, and Clearance to the Performance of a Boundary Layer Turbine	December 2019
123	Santos , June-June P.	MS Civil Engineering	Effects of Nonosilica on Mechanical Properties, Durability and Microstructure of High-Strength Concrete	May 2019
124	Serraon , Ace Christian F.	MS Chemical Engineering	Towards a New Class of Computationally Predicted Carbon-Based Two-Dimensional Nanomaterials: a Density Functional Theory (DFT) Study on Alkaline Earth Doped Graphene for Oxygen Reduction/Evolution Reaction (ORR/OER) Mechanisms	December 2019
125	Soriano , Jhunievieve E.	MS Industrial Engineering	Integrated Employee Scheduling with Known Employee Demand, Including Breaks, Overtime, and Employee Preferences	May 2019
126	Sy , Miguel S.	MS Energy Engineering	Aerodynamic Investigation of a Horizontal Axis Wind Turbine with winglet Using Computational Fluid Dynamics	December 2019
127	Tan , Dominique Jan B.	MS Chemical Engineering	Development of Low-Cost and Sustainable Chitosan-Coated Natural Zeolite Adsorbent for Carbon Dioxide Capture	May 2019
128	Tan , Vanessa H.	MS Electrical Engineering	Multi-task Learning for Detection, Recovery, and Separation of Polyphonic Music	December 2019
129	Tejada , Regine A.	MS Industrial Engineering	Shortening Process Involving Preference Determination by Forecasting Preferences Integrating Historical Frequency, Profile, Performance, Prioritization, Attribute changes, Targets and other Requirements	July 2019
130	Umali , Kristine Dominique M.	MS Energy Engineering	Fabrication of Solvothermal-grown Metal Organic Framework on Anodized Nickel-Iron Foam as Efficient and Stable Oxygen Electrode for Hydrogen Energy Production	December 2019

List of MS Graduates

ANNEX A

University of the Philippines Los Baños				
131	Arrobang , Romel A.	MS Agricultural Engineering	Pyrolysis of seaweeds (Sargassum SPP.) found in Capiz for Bio-Oil Char production	June 2019
132	Baltazar , Bryan M.	MS Agrometeorology	Site Suitability Analysis of diversion dam for rice Irrigation in Quezon Philippines using Multi-Criteria Decision Analysis & GIS	June 2019
133	Cerna , Julious B.	MS Agricultural Engineering	Computational Fluid Dynamics Simulation and Shape Optimization of liquid Ejector for Vacuum Frying System	June 2019
134	Cuela , Sheila C.	MS Agrometeorology	Assessment of Corn Canopy Reflectance Using Hyperspectral Radiometer	May 2019
135	Dacones , Renmar James P.	MS Agricultural Engineering	Low-Cost Artificial Fruit for Impact and Vibration Measurement	January 2019
136	Espenido , Rizza Lorena P.	MS Agrometeorology	Estimating Leaf Chlorophyll Content, Leaf Area Index and Yield of Corn (Zea mays L.) Using Low Altitude Remote Sensing	June 2019
137	Guardarama , Ruel R.	MS Agricultural Engineering	Development of Cassava Mechanical Planter	June 2019
138	Lucernas , Michael A.	MS Agricultural Engineering	Development of Automated Fertilizer for Corn	June 2019
139	Oca , Glenn Moises	MS Agrometeorology	Locating Suitable Sites for Smallholder Dairy Buffalo Farms using Remote Sensing, Geographic Information System and Multi-Criteria Decision Analysis: A Case Study in Magdalena, Laguna, Philippines	December 2019
140	Pascual , Aga-Angelica S.	MS Agricultural Engineering	Performance Evaluation and Characterization of a Locally-Designed Water Pump	December 2019
141	Pequeña , Debbie Butch R.	MS Agricultural Engineering	Development of an Automated Drinking System using Microcontroller for Broiler Production	December 2019
142	Rabanera , Jennyfer D.	MS Agricultural Engineering	Determination of water activity of peanut kernel using near-infrared Hyperspectral Imaging Technology	January 2019
143	Rapisura , Jefferson J.	MS Agrometeorology	Rainfall and temperature forecasting using NCEP Global Datasets through WRF Model	June 2019
144	Ruzgal , Job Jonas C.	MS Agricultural Engineering	Development of Nanosilica-Structured Hydrophobic Coating for Tillage implements	January 2019
145	Sapigao , Marijoree A.	MS Agricultural Engineering	Disease Indexing for Mango (Magnifera Indica L. ev. 'Carabao') Fruits using Machine Vision	December 2019
146	Tado , Neil Ceasar M.	MS Agricultural Engineering	Effect of airflow and fuel ratio on the gasification of rice husk and rice straw	June 2019

University of San Carlos				
147	Abad , Irene Lara	MS Mechanical Engineering	Performance Comparison of Diesel Engine Waste Heat Recovery Devices (with and without Coiled Wire Insert) for Possible Application	July 2019
148	Banuag , Ladlennon	MS Electronics and Communications Engineering	Development of a Patient Monitoring System for Private Wards Employing Zigbee Technology and CAN Protocol	May 2019
149	Bas , Jonah Lee	MS Civil Engineering	A GIS-Based Multi-Criteria Decision Framework for Selecting Suitable Locations of Sustainable Flood Retention Basins at the Watershed Scale: The Case of the Upper Subcatchments of the Butuanon River Watershed	December 2019
150	Beron , Blesshe Mae	MS Electronics and Communications Engineering	Performance Evaluation of IEEE 802.11af Wireless LAN in TV Bands	July 2019
151	Caladcad , Aian Rey	ME Mechanical Engineering	Domestic Water Production Using Single Slope Solar Still With Designed Cooling Fins For Remote Island Community	July 2019
152	Cañada , Jefferson	MS Computer Engineering	Development of a Stereo NDVI Imaging System Using Raspberry Pi	December 2019
153	Jacel , Ernie Suico	MS Industrial Engineering	Physical Ergonomics Assessment of Brass Casting Process: Recommendations for Improvement	December 2019
154	Lalisan , Cristina	MS Civil Engineering	Runoff Attenuation Performance of Storage Basins in Banilad – Talamban – Cabancalan Catchment	July 2019
155	Montesco , Aljade	MS Civil Engineering	Discrete Layout Optimization of Warehouse Roof Truss Design Utilizing Genetic Algorithm with Domain-Trimming (GADT)	December 2019
156	Pilapil , Dainela Yve	MS Electronics and Communications Engineering	Development and Implementation of a TV White Space Geolocation Database for IEEE 802.11af System Using the ITU-R p. 1411 Recommendation	July 2019
157	Rubin , Benjamin	MS Industrial Engineering	Risk Factors of Head-Load Carriage on Farmers as Indicated by their physiological and subjective perceptual responses	May 2019

List of PhD Graduates

ANNEX B

Name		Degree Conferred	Title of Thesis	Date of Graduation/ Completion
Ateneo de Manila University				
1	Agapito , Jenilyn L.	PhD Computer Science	An Investigation of the Impact of Gamification on Novice Programmers' Achievement and Learning Experience	June 2019
2	Dumdumaya , Cristina Enriquez	PhD Computer Science	Modeling Student Task Persistence in a Learning-By-Teaching Environment	June 2019
3	Villamor , Maureen Mamilic	PhD Computer Science	Characterizing Individual and Pair Gaze Patterns in a Pair Program Tracing and Debugging Eye Tracking Experiment	June 2019
Central Luzon State University				
4	Aquino , Jenaida B.	PhD Agricultural Engineering	Waste Treatment System for the Re use of Swine Wastewater for Agricultural Production	February 2019
5	Aquino , Sony P.	PhD Agricultural Engineering	Horizontal Subsurface Flow Constructed Wetland for Treating Biogas Digester's Effluent for Water Reuse	June 2019
6	Bareng , Jeoffrey Lloyd R.	PhD Agricultural Engineering	Soil Erosion Modeling Employing Artificial Neural Network	June 2019
7	Peneyra , Maribel B.	PhD Agricultural Engineering	Rootzone Cooling and Vertical Aeroponic Technology for Green-Leaf Romaine Lettuce (<i>Lactuca sativa</i> L.) Production Under Automated Tropical Greenhouse	June 2019
8	Rico , Amy Lizbeth J.	PhD Agricultural Engineering	Automated pH and Temperature System for Hydroponics under Greenhouse Condition	February 2019
9	Sulit , Meriam F.	PhD Agricultural Engineering	Rootzone Cooling of Hydroponic Tower-Grown Red Butterhead Lettuce Under Modified Tropical Greenhouse	June 2019
De La Salle University				
10	Valenzuela , Ira C.	PhD Electronics and Communications Engineering	Application of Computational Intelligence in Plant Growth Monitoring	April 2019
11	Roxas , Edison A.	PhD Electronics and Communications Engineering	Vision-based Target Detection Using Scale and Rotation Invariant Technique Modified for Dynamic Agent	April 2019
Mapua University				
12	Nieva , Aileen D.	PhD Chemical Engineering	Biosorption of Heavy Metals, Organic Contaminants and Oxyanions in Aqueous Solutions Using Agricultural Residues	January 2019
13	Saiyari , Donamel A.	PhD Environmental Engineering	Monitoring of Chlorinated Ethene Degrades: A Bio-indicator in inland Water Evaluation for Bioremediation	January 2019

List of PhD Graduates

ANNEX B

Mindanao State University – Iligan Institute of Technology				
14	Villanueva , Mark D.	DEng Mechanical Engineering	Design, Construction, and Performance Evaluation of a Turbine Runner in a Modified Double Suction Centrifugal Pump as Turbine (PAT) for Power Cogeneration in Portable Water Treatment Facility	June 2019
University of the Philippines Diliman				
15	Abarca , Ralf Ruffel M.	PhD Environmental Engineering	Synthesis of geopolymers-13X-activated biochar composite for adsorptive removal of pollutants	December 2019
16	Antonio , Rheamay V.	PhD Environmental Engineering	Development and Performance of Graphene Oxide (GO)/Hexagonal Molybdenum Trioxide (h-MoO ₃)/silicon Dioxide (SiO ₂)/Magnetite (Fe ₃ O ₄) Magnetic Composite Photocatalyst in the Degradation of Methylene Blue and Phenol under Visible Light	May 2019
17	Balbarona , Juvy A.	PhD Energy Engineering	Analysis of Drop Size Distribution as a Function of Surface Roughness Properties and Operating Condition	May 2019
18	Cenia , Marie Chela B.	PhD Environmental Engineering	Phytomining of Copper from Aqueous Solution by Vetiver Grass [Chrysopogon zizanioides (L.) Roberty]	July 2019
19	Clemente , Jhoirene B.	PhD Computer Science	Additional Information in Computation: Reoptimization and Advice for Some Combinatorial Problems	December 2019
20	Guerrero , Reynaldo Jr. C.	PhD Electrical and Electronics Engineering	Planning for Autonomous Microgrid Considering component Degradation and Parameter Variability	May 2019
21	Ortenero , Joseph R.	PhD Chemical Engineering	Parametric and Catalytic Study of Nickel-Iron Mixed Selenides as Oxygen Evolution Reaction Electrocatalyst in an Alkaline Electrolyzer	May 2019
22	Tan , Sunshine Petal V.	PhD Environmental Engineering	Iodine-129 and Iodine-127 as an Environmental Tracer for Salinity Origin in Groundwater	May 2019
University of the Philippines Los Baños				
23	Caoili , Reynold M.	PhD Agricultural Engineering	Optimization of performance of a sweet sorghum threshing cylinder	June 2019
24	Fortu , Alfredo Jr. F.	PhD Agricultural Engineering	Drying Kinetics and Anticoagulant Activity of Microwave-Vacuum, Dehumidifier-Air and Freeze-Dried African Night Crawler (Eudrilus-eugeniae Kinberg)	January 2019
25	Painagan , Marilyn S.	PhD Agricultural Engineering	Simulating the Impact of Deficit Irrigation on Growth and Yield of Sweet Corn (Zea Mays L.) using DSSAS CERES-Maize and Aquacrop Models	December 2019

List of PhD Graduates

ANNEX B

26	Rodriguez , Fatima S.	PhD Agricultural Engineering	Development of an LED-Based Multispectral Chlorpyrifos-Methyl Pesticide Residue Detector in Rice Grains	December 2019
University of San Carlos				
27	Demetillo , Alexander	Doctor of Engineering	Prototype development and implementation of real-time water quality monitoring system	May 2019
28	Japitana , Michelle	Doctor of Engineering	A geoinformatics-based modeling and mapping techniques for surface water quality monitoring and assessment	May 2019
29	Palconite , Eleonor	Doctor of Engineering	Potential of integrating solar photovoltaic and battery system towards clean energy solutions for the maritime transport sector in the Philippines	May 2019
30	Querikiol , Edward	Doctor of Engineering	Demonstrating the use of solar energy and wireless sensor network and manufacturing and agriculture-based operations	May 2019
31	Ramos , Rocky Marius	Doctor of Engineering	Towards environmental sustainability of Philippine pineapple and Indonesian mangroves: a dynamic circular economy approach	December 2019

List of Foreign PhD Graduates

ANNEX C

Name of Scholar	Home University	Host University	Country of Host University
Alamani , Bryan G.	University of the Philippines Diliman	University of Houston	United States of America
Adolacion , Jay R T.	University of the Philippines Diliman	University of Houston	United States of America
Baynosa , Marjorie L.	University of the Philippines Diliman	Yeungnam University	South Korea
Casila , Joan Cecilia C.	University of the Philippines Los Baños	Tokyo Metropolitan University	Japan

Recipients of Research Dissemination Grant

ANNEX D

Recipient	Name of Conference/Journal	Title of Paper	Venue	Amount
Ateneo de Manila University				
Bardeloza , Dean Karlo D.		Towards Vulnerability Mapping on High Resolution Aerial Images: Roof Detection, GIS, and Machine Learning Techniques		75,000.00
Borromeo , Justine Cris B.	24th Optoelectronics and Communications Conference/International Conference on Photonics in Switching and Computing 2019	Hardware Comparison of Schedulers for Modular Optical Interconnection Networks	Fukuoka, Japan	74,376.90
Bringula , Rex P.	Technology, Mind, and Society 2019 Conferene	Intelligent Tutoring Systems for the Filipino Learners: Cunent Research, Gaps and Opportunities	Washington D.C., United States	42,282.00
Chan , Aaron Keith Y.	11th IEEE PES Asia-Pacific Power and Energy Engineering Conference	Photovoltaic System Performance Model for Output Power Forecasting	Macao, China	75,000.00
Dela Cruz , Jane Arleth L.	IEEE Global Humanitarian Technology Conference	Demonstrations of post-disaster resilient communications and decision-support platform with UAVs, ground teams and vehicles using delay-tolerant information networks on sub-GHz frequencies	Seattle, WA, United States	75,000.00
Dela Cruz , Viktor Mikhael M.	4th International Conference on Human Computer Interaction Theory and Applications HUCAPP	User-centered Approach to Developing Solutions for Electronic Medical Records: Extending EMR Data Entry	Valletta, Malta	75,000.00
Garcia , Christina A.	22nd World Conference in Applied Science Engineering and Tecrnology	Non-invasive Diabetes Detection using Facial Texture Features	Singapore	75,000.00
Ingco , Wally Enrico M.	16th Intemational SoC Design Conference (ISOCC) 2019	Development of a Spectral Feature Extraction using Enhanced MFCC for Respiratory Sound Analysis	Jeju, South Korea	75,000.00

Recipients of Research Dissemination Grant

ANNEX D

Llantos, Orven E.	Conference of Enterprise Information System (CENTERIS 2019)	Characterizing Instructional Leader Interactions in a Social Learning Management System using Social Network Analysis	Sousse, Tunisia	50,843.00
Parocha, Raymark	LS Graduate Research Festival		Quezon City, Philippines	1,000.00
	2019 International Conference on Internet of Things and Intelligence System	Implementation of Home Automation System using Open HAB Framework for Heterogenous IoT Devices	Bali, Indonesia	72,665.00
Wenceslao, Stephen John Matthew C.	International Conference on Medical and Health Informatics (ICMHI) 2019	Development of a block chain enabled voice to test transcriber for an electronic medical record: improving patient-doctor interaction	Xiamen, China	37,394.00
		Using cTAKES to build a simple speech transcriber plugin for an EMR		12,805.30
Central Luzon State University				
Borres, Eligio Jr.	12th TSAE International Conference	Design and Automation of a Solar-Powered Floating-Type Aeration System (SPFTAS) for Fish Ponds	Chonburl, Thailand	62,595.51
De La Rama, Edgar Martin Y.	16th International Agricultural Enginnering Conference and Exhibition and 68th PSABE Annual National Convention	Synthesis, Characterization, Fabrication and Application of Electrospun Nanofiber Polymer Composite: A Potential Bio-materials Against Black Mold Rot (Aspergillus niger) of Onion (Allium cepa)		18,065.00
Pascual, Christopher C.	12th TSAE International Conference	Effect of Ground Heat Exchanger for Root-zone Cooling on the Growth and Yield of Aeroponically-grown Strawberry Plant Under Tropical Greenhouse Conditions	Chonburl, Thailand	51,804.91
	16th International Agricultural Enginnering Conference and Exhibition and 68th PSABE Annual National Convention		Philippines	20,038.58

Recipients of Research Dissemination Grant

ANNEX D

Titiwa, Kevin	12th TSAE International Conference	Development of Potato (Solanum tuberosum L.)Haulm Cutter	Chonburl, Thailand	49,268.30
De La Salle University				
Abad, Raymund Paolo	15th World Conference on Transportation Research	Changes in behavior during flood events in relation to transport modes: the case of Metro Manila Philippines	Bombay, India	25,358.49
		Assessment of Public Transportation Travel Vulnerabilities due to Flooding in Metro Manila Philippines	Bombay, India	25,358.49
Bacero, Riches S.	26th Annual TSSP Conference	Review of the National and Cities' Truck Policies in Metro Manila	Cebu City, Philippines	17,000.00
	Eastern Asia Society for Transportation Studies 2019	Characterization of Truck Traffic in Metro Manila	Colombo, Sri Lanka	65,000.00
	International Urban Freight Conference		California, United States	92,000.00
Blanza, Jojo	International Symposium on Multimedia and Communication Technology (ISMAC) 2019	Datasets for Multipath Clustering at 285Mhz and 5.3 GHz Bands Based on COST 2100 MIMO Channel Model	Quezon City, Philippines	15,000.00
	10 th International Conference of Computing, Engineering, and Communication Technologies (ICCECT 2019)	Wireless Propagation Multipath Clustering: On Simultaneously Solving the Membership and the Number of Clusters	Kuala Lumpur, Malaysia	111,354.07
Calumba, Sherwin Roy	Eastern Asia Society for Transportation Studies 2019	Earthquake Evacuation Choice Models Based on the Stated Preference Approach for Residents in Surigao City, Philippines	Colombo, Sri Lanka	38,688.49
Catindoy, Donovan	International Conference on Resource Sustainability (icRS) 2019	Utilization of Recycled Polyethylene Terephthalate (PET) Strips as an Alternative Confinement Material in Retrofitting Concrete Columns	Adelaide, Australia	32,216.45
Chioson, Francheska	2nd International Symposium on Advanced Intelligent Informatics (SAIN 2019)	A Machine Learning Approach for the Identification and Classification of Schizophrenia Disorder usign EEG signals	Nanjing, China	75,000.00

Recipients of Research Dissemination Grant

ANNEX D

Concepcion, Ronnie II	9th IEEE International Conference on Cybernetics and Intelligent Systems and Robotics, Automation and Mechatronics (CIS-RAM).	Implementation of Multilayer Perception Neural Network on Quality Assessment of Tomato Puree in Aerobic Storage using Electronic Nose	Bangkok, Thailand	82,200.00
De Luna, Robert	2nd International Symposium on Advanced Intelligent Informatics (SAIN 2019)	Tomato Solanum Lycopersicum Growth Stage Monitoring for Smart Farm using Deep Transfer Learning with Machine Learning-based Maturity Grading)	Nanjing, China	54,384.35
Dizon, Liezel Bianca	6th International Conference on Industrial Engineering and Application (ICIEA 2019)	Modelling the Dynamics of Inventory and Backlog Management in Sevitized Supply Chains: The Case of Custom Industrial Manufacturing Firms	Tokyo, Japan	55,606.00
Galvez, Reagan	2nd International Symposium on Advanced Intelligent Informatics (SAIN 2019)	Object Detection in X-ray Images using Transfer Learning with Data Augmentation	Nanjing, China	13,930.44
Lauguico, Sandy	9th IEEE International Conference on Cybernetics and Intelligent Systems and Robotics, Automation and Mechatronics (CIS-RAM).	Implementation of Inverse Kinematics for Crop-Harvesting Robotic Arm in Vertical Farming	Bangkok, Thailand	64,100.00
Miguel, Angelimarie S.	6th International Conference on Industrial Engineering and Application (ICIEA 2019)	The Impact of Production Technology, Inventory Management and Price Expectation on Dynamic Behavior of Philippine Rice Prices	Tokyo, Japan	54,220.00
Munsayac, Francisco Emmanuel Jr. III	7th International Conference on Robot Intelligence Technology and Applications (RiTA 2019)	BCI Controlled Smart Wheelchair for Amyotrophic Lateral Sclerosis Patients	Daejeon, South Korea	36,600.00
Say, Marc Francis	11th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management	Unmanned Aerial Vehicle (AUV) Altitude Estimation Using Artificial Neural Network	Ilocos Norte, Philippines	40,000.00

Recipients of Research Dissemination Grant

ANNEX D

Saysay, Romel	7th International Conference on Robot Intelligence Technology and Applications 2019 (RITA 2019)	A Multi-Storey Garage Smart System used on Image Processing	Daejeon, South Korea	52,076.38
Tan, Jomari	The 9th International Conference on Geotechnique, Construction Materials and Environment	Recycled Gypsum and Rich Husk Ash as Additives in the Stabilization of Expansive Soil	Tokyo, Japan	36,400.00
Venancio, Leonardo Jr.	3rd International Conference on Intelligent Manufacturing and Automation Engineering	A Novel Low Cost Automation of Transfer Switch for a Hybrid Solar Power System	Tokyo, Japan	26,316.00
Mapúa University				
Balakit, Raymart B.	11th International Conference of Humanoid Nanotechnology, Information Technology, Communication and Control, Environment and Management (HNICEM2019)	Sonde Instrumentation for Upper-Air Weather Monitoring System	Ilocos Norte, Philippines	61,580.00
Bismonte, Ma. Elizabeth	10th International Membrane Science and Technology Conference (IMSTEC2020)	Alcohol Dehydration Performance of Reduced Graphene Oxide-Graphene Quantum Dot Nanocomposite Filler in Polymeric Pervaporation Composite Membrane	Sydney, Australia	75,000.00
Cabalag, Maria Virginia	4th International Conference on Civil Engineering and Material Science (ICCEMS 2019)	Variation on Port Infrastructures: Employment of Principal Component analysis for Factor Extraction Instigating Disparity on Planning and Implementing Phase	Bangkok, Thailand	75,000.00
Cabuñas, Jay	18th World Conference on Applied Science, Engineering and Technology	Exploratory Factor-Item Analytic Approach for Construction Project Cost Overruns using Oblique Promax Rotation for Prediction Determination	Makati City, Philippines	45,000.00
Casto, Jhun Christopher	12th ATRANS Annual Conference: Young Researcher's Forum (AYRF 2019)	Perception on the use of transport modes in the Island Province of Marinduque, Philippines	Bangkok, Thailand	34,960.00

Recipients of Research Dissemination Grant

ANNEX D

Cosico , John Alec	The 10th International Conference on Advanced Materials Research (ICAMR 2020)	Sonochemically Assisted Samarium Doped Copper (II) Oxide Nanostructures in P-N Junction	Okinawa, Japan	28,055.10
Lomeda , Rose Ann P.	International Conference on Green Energy and Environment Engineering	Characterization of Torrefied Biomass from Sugarcane (Saccharum officinarum) Bagasse Blended with Semirara Coal	Okinawa, Japan	75,000.00
Mabunga , Zoren P.	11th International Conference of Humanoid Nanotechnology, Information Technology, Communication and Control, Environment and Management (HNICEM2019)	Greenhouse Gas Emissions and Grounwater Leachate Leakage Monitoring of Sanitary Landfill	Ilocos Norte, Philippines	67,524.00
Macariola , Roderick	4th International Conference on Civil Engineering and Material Science (ICCEMS 2019)	Coping with the information Age: Development of a Data Flow Diagram-Based knowledge Management Systems for mitigating delays for constructions	Bangkok, Thailand	75,000.00
Macni , Charelle Rose M.	10th International Membrane Science and Technology Ceonference (IMSTEC2020)	Incorporating Polydopamine Particle to Cellulose Acetate for Improved Antifouling of Mixed-matrix Membrane Applied to Oil-water Separation	Sydney, Australia	75,000.00
Maganto , Hazel Lynn C.	10th International Membrane Science and Technology Ceonference (IMSTEC2020)	Enhanced Desalination of Dye Solutions and Imbued Antibacterial Properties for Nanofiltration Mixed -Matrix Membranes of Polyethersulfone and Polydopamine Particles Adorned with Silver	Sydney, Australia	75,000.00
Quizan , Dexrey John P.	2019 International Conference on Power Engineering and Automation Engineering (PEAE 2019)	Matlab Simulation of Solar Photovoltaic Integration for Levilized cost of Electircity using Genetic Algorithm	Phuket, Thailand	33,066.71
Rivera , Redden Rose C.	International Conference on Green Energy and Environment Engineering	Prediction of Density and Speed of Sound of Binary Ionic Liquid and Ketone Mixtures Using Artificial Neural Network	Jeju, South Korea	75,000.00
Suliva , Kevin	22nd World Conference in Applied Science Engineering and Technology	Bayesian Based Process Downtime cost Determination of an Indutrial Plant	Singapore	23,219.18

Recipients of Research Dissemination Grant

ANNEX D

Tan, Jason Jake E.	11th International Conference of Humanoid Nanotechnology, Information Technology, Communication and Control, Environment and Management (HNICEM2019)	Isfet Readout Using Flipped Voltage Follower with Temperature Compensation	Ilocos Norte, Philippines	63,750.00
Tolentino, Marvin	5th International Conference on Water Resource and Environment (WRE 2019)	Adsorptive Removal of Multi-Metal Ions in Wastewater using Electrospun Cellulose Acetate/Iron-Modified Nanozeolite Nanostructured Membrane	Macao, China	75,000.00
Valencia, May Anne C.	11th International Conference of Humanoid Nanotechnology, Information Technology, Communication and Control, Environment and Management (HNICEM2019)	Low-Cost LoRa-Based Transmission System for Weather Balloon	Ilocos Norte, Philippines	53,150.00
Vasquez, Alfred Rey G.	International Scientific Conference on Engineering and Applied Sciences (ISCEAS 2019)	Network Modeling for Distribution System on Feeder Losses Using Neural Network	Hong Kong	75,000.00
Villapa, John Bryan	International Scientific Conference on Engineering and Applied Sciences (ISCEAS 2019)	Geopolymerization Method to Modify the Structural Properties of Stabilized Silty Clay Utilizing Coconut Husk Ash, Rice Husk Ash and Seawater for Wall Construction	Hong Kong	75,000.00
Mindanao State University - Iligan Institute of Technology				
Acut, Rhea Vanessa P.	4th IEEE International Circuitry and Systems Symposium 2019	PV-TEG-Wifi Multiple Sources Design Ambient Energy Harvesting Systems for WSNs Application	Kuala Lumpur, Malaysia	74,977.66
Calam, Ramon Cristopher	4th IEEE International Circuitry and Systems Symposium 2019	A Self-Calibrating Off-Time Controller Design for WSN/IoT Synchronous Non-Inverting Buck-Boost Converter Application	Kuala Lumpur, Malaysia	74,925.02
Jimenez, Kresil Joy P.	4th IEEE International Circuitry and Systems Symposium 2019	Self-Biased 2.4 GHz CMOS RF-to-DC Converter with 80% Efficiency and -22.04 dBm Sensitivity for Wi-fi Energy Harvesting	Kuala Lumpur, Malaysia	74,927.66

Recipients of Research Dissemination Grant

ANNEX D

University of the Philippines Diliman				
Aquino , Christian Laurence E.	9th International Conference on Key Engineering Materials	Photo-Fenton Degradation of Methyl Orange Using Hematite Microstructures of Various Morphologies	Oxford, United Kingdom	75,000.00
Aragua , Richelle A.	2019 International Conference on Environmental Quality Concern, Control, and Conservation	Optimization of Copper Leaching from Chrysopogon zizanioides (L.) Robery Biomass by Citric Acid		33,298.26
Aranas , Dominique Charmaine	26th Annual Conference of the Transportation Science and Society of the Philippines (TSSP)	Dashboard Camera-Aided Test Vehicle Technique for Passenger Load Profile and Travel Time Data Collection for UV Express Transit Services	Quezon City, Philippines	26,000.00
Bayon , Lester Lee	16th International Conference on Environmental Science and Technology	Cobalt and Phosphorous Recovery from Semiconductor Wastewater through Homogenous Crystallization of Cobalt Phosphate in a Fluidized-bed Reactor	Rhodes, Greece	75,000.00
Bugayong , Albert Paolo P.	5th International Conference on Control, Automation and Robotics (ICCAR 2019) in Beijing, China	A Comparison of Different Fuzzy Logic Control Architectures in Car-Following	Beijing, China	29,783.00
Cayabyab , Carlo Angelo L.	6th Global Conference on Polymer and Composite Materials (PCM 2019)	Computational Screening of Functional Monomers for the Design of Molecularly Imprinted Polymer for Bitertanol for Sensor Application	Bangkok, Thailand	53,200.00
Chan , Maxine Y.	Sustainable Development of Energy, Water, and Environment Systems Conference (SDWES 2019)	Development of an Energy Audit Working Procedure for the UP National Engineering Center	Dubrovnik, Croatia	75,000.00
Cortez , Crytalynne D.	4th International Conference on Robotic and Automation Engineering	Electromagnetic Artificial Muscle Technologies Revisited: Basis for the Design of Magnetic Coupled Artificial Exoskeletal Muscle	Singapore	69,500.00
Dejucos , Marco Angelo	International Conference on Sustainable Energy and Green Technology 2019	Hybrid-Biomass-diesel Systems for Missionary Electrification of Small Island and Isolated Grids in the Philippines	Bangkok, Thailand	52,000.00
Dela Cruz , Roselia	IEEE 10th Information Technology, Electronics and Mobile Communication Conference (IEMCON)	RSSI-based Localization in an Emulated Active RFID System	Vancouver, Canada	68,270.00

Recipients of Research Dissemination Grant

ANNEX D

Delos Reyes, Nikko B.	6th Global Conference on Polymer and Composite Materials (PCM 2019)	Computational Design of Dummy Molecularly Imprinted Polymers via Hydrogen Bonding Investigation for Oxytetracycline Determinatio	Bangkok, Thailand	53,200.00
Eugenio, Francis Darwin T.	6th Global Conference on Polymer and Composite Materials (PCM 2019)	Potential Anti-Corrosion Additives Derived from Waste Plastic Sachets	Bangkok, Thailand	55,000.00
Futalan, Wilbert James C.	18th Asian Pacific Confederation of Chemical Engineering 2019 Conference	Density Functional Theory- based Study of O2 Adsorption on S- and P- doped Graphitic Carbon Nitride/Graphene Layer	Sapporo, Japan	32,340.35
Galang, Mark Gino K.	16th International Conference on Environmental Science and Technology	Statistical Prediction Models for the Odour Quantification in Terms of Odour Concentration Analysis and Comparison	Rhodes, Greece	40,412.86
Garcia, Gabriel	International Conference on Sustainable Energy and Green Technology 2019	Torrefaction of Potassium Impregnated Biomass in a Fixed bed Reactor	Bangkok, Thailand	73,302.00
Gonzales, Fritz Cyrill DV.	5th International Conference on Control, Automation and Robotics (ICCAR 2019)	Kinematic Modeling of Constant Curvature Continuum Manipulator Using Finite Element Analysis	Beijing, China	73,967.00
Gorre, Regino Jr. C.	International Conference on Sustainable Energy and Green Technology 2019	Solvent and Non-Solvent Selection for the Chemical Recycling of Waste Polyethylene and Polypropylene Metalized Film Packaging Materials	Bangkok, Thailand	75,000.00
Ibañez, Jessa	9th International Conference on Power and Energy Systems (ICPES) 2019	Relationship of Economic Growth and CO2 Emissions in the Philippines: An EKC Hypothesis Testing Case Study	Perth, Australia	75,000.00
Lodo, Marjorie Jane L.	8th International Conference on Advanced Materials and Engineering Materials (ICAMEM 2019)	Desorption of Mercury Complex from Fe-modified Montmorillonite Adsorbent Membrane	Hong Kong	46,296.18
Loquias, Rizza T.	IEEE International Symposium on Dynamic Spectrum Access Networks	Quantitative Assessment of TV White Space in the Western Philippine Nautical Highway	New Jersey, United States	150,000.00
Manuel, Amihan	Joint Meeting of the 21st William T. Pecora Memorial Remote Sensing Symposium and the 38th International Symposium on Remote Sensing of Environment	Optimization on Bio-Optical Model Parameters for Turbid Lake Water Quality Estimation using Landsat 8 and WASI-2D	Maryland, United States	75,000.00

Recipients of Research Dissemination Grant

ANNEX D

Muega , Sherwin C.	2019 International Conference on Environmental Quality Concern, Control, and Conservation	Carbon Dots from Wood Waste for Copper (II) ion Detection		22,000.00
Nablo , Geoffrey Ray L.	14th Asia Pacific Physics Conference	Characterization of Titanium Aluminum Nitride Deposited using a Magnetized Sheet Plasma	Sarawak, Malaysia	15,101.33
Olalo , Joselito A.	16th International Conference on Environmental Science and Technology	Pyrolysis of Waste Plastic Laminated and Coconut Husk: Optimization of Fuel oil Yield, higher Heating Value and Energy Value	Rhodes, Greece	150,000.00
Osorio , Ezra D.	16th Environmental Technology and Management (ETMC) with the 12th AUN/SEED-Net RC EnvE 2019	Ubiquity of Microplastics in the Surface Waters and Sediments sampled for Five Identified River Mouths of Manila Bay	Bali, Indonesia	45,650.00
	4th International Conference on Biological Waste as Resource 2019		Busan, South Korea	29,350.00
	4th Philippine Solid and Hazardous Waste Management Conference	Microplastics in the Surface Waters and Sediments in Five River mouths of Manila Bay	Tarlac, Philippines	14,000.00
Panganiban , Francis C.	International Symposium on Multimedia and Communication Technology (ISMATC)	Reducing Pulse Rate Variability Computational Error from a 30 Hz Photoplethysmography Recording	Quezon City, Philippines	15,000.00
Panganoran , Harold	International Conference on Sustainable Energy and Green Technology 2019	Hydrothermally Carbonized Waste Biomass as Electrocatalysts Support for a MnO ₂ in Oxygen Reduction Reaction	Bangkok, Thailand	52,000.00
Panghulan , Glenon R.	Metallurgical Conference 2019	Kinetics of Pyrite Oxidation in Simulated Mine Tailings Pond Conditions		13,214.14
Pegollo , Colleen Anh C.	6th Global Conference on Polymer and Composite Materials	Feasibility of Oxidized Soybean oil for Rubber Devulcanization	Bangkok, Thailand	68,500.00
Penisa , Xaviery	International Conference on Sustainable Energy and Green Technology 2019	Projecting the Price of Lithium ion NMC Batteries using a Multi-Factor Learning Curve Model	Bangkok, Thailand	52,000.00
Pineda , Rizza Rae	12th Regional Conference on Computer and Information Engineering (RCCIE) 2019	A Comparison of SVM and kNN on the Classification of Jewel Damselfish Activity	Vientiane, Lao PDR	44,749.14

Recipients of Research Dissemination Grant

ANNEX D

Rabongue, Anamie	2019 International Conference on Environmental Quality Concern, Control, and Conservation	Cartap Removal from Simulated Water Matrix by Fluidized-bed Fenton Process: Optimization of Process Parameters		71,104.00
Sanchez, Eleanor O.	19th International Zeolite Conference	Philippine Natural Zeolite Surface Engineered with CuO Nanowires via a One-Step Thermal Decomposition Route; 2. Functionalization of Philippine Natural Zeolites via Plasma Treatment Techniques for Green Technologies	Perth, Australia	58,058.73
Santelices, Francis Paolo D.	International Symposium on Multimedia and Communication Technology (ISMATC)	WARPP: From the Wild Action Recognition and Path Prediction	Quezon City, Philippines	15,000.00
Santos, Ramon Florentino L.	11th IEEE PES Asia-Pacific Power and Energy Engineering Conference 2019 (APPEEC 2019)	Evaluation of a Modular Stator, Segmented Rotor Switched Reluctance Motor	Macao, China	75,000.00
Sapliago, Niel Gabrial	International Conference on Sustainable Energy and Green Technology 2019	Grid Parity Analysis of Solar Photovoltaic and Battery Stand-alone Systems in Commercial and Residential Sectors	Bangkok, Thailand	52,000.00
Tan, Vanessa H.	International Symposium on Multimedia and Communication Technology (ISMATC)	Time Frequency Representations for Single-Channel Music Source Separation	Quezon City, Philippines	15,000.00
University of the Philippines Los Baños				
Acaso, Glenn Christian P.	2019 Science Council of Asia Conference	Preparation of a micro fibrillated cellulose from Bakong (hanguana malayana (Jack) Merr.) and its application as paper enforcement	Nay Pyi Taw, Myanmar	52,841.52
	2019 International Symposium on Advanced Technologies	Preparation of a micro fibrillated cellulose from Bakong (hanguana malayana (Jack) Merr.) and its application as paper enforcement	Tainan, Taiwan	20,068.40

Recipients of Research Dissemination Grant

ANNEX D

Adorna, Joemer Jr.	26th Regional Symposium on Chemical Engineering	Synthesis of activated biochar-manganese dioxide (AB-MD) nanocomposites as a potential material for heavy metal removal in wastewater	Kuala Lumpur, Malaysia	55,715.17
	Green Technologies for Sustainable Water (GTSW)	Synthesis of activated biochar-manganese dioxide (AB-MD) nanocomposites as a potential material for heavy metal removal in wastewater	Ho Chi Minh, Vietnam	19,284.93
Alejo, Lanie A.	22nd PSSST Annual Meeting and Scientific Conference "Conserving Soil Biodiversity Towards Sustainable Ecosystem Service"	Assessing the Impacts of Climate Change on Dependable Flow and Potential Irrigable Area using the Soil and Water Assessment Tool	Baguio City, Philippines	27,912.87
Baltazar, Bryan	40th Asian Conference on Remote Sensing ACRS	Site Sustainability Analysis of Diversion Dams in Quezon, Philippines Using Multi-criteria Decision Analysis (MCDA) and GIS	Daejeon, South Korea	73,536.44
Caoili, Reynold M.	2019 International Symposium on Advanced Technologies	Optimization of Performance of a Sweet Sorghum Threshing Cylinder	Tainan, Taiwan	60,592.48
Espenido, Rizza Lorena P.	40th Asian Conference on Remote Sensing ACRS	Assessment of Leaf Chlorophyll Content, Leaf area Index and Yield of corn Using Low Altitude Remote Sensing	Daejeon, South Korea	74023.31
Fortu, Alfredo Jr. A.	3rd International Conference on Agricultural Engineering for Sustainable Agriculture Production	Drying Kinetics and Anticoagulant Activity of Microwave-vacuum Dehumidified-air and Freeze-dried African Night Crawler (<i>eudrilus eugeniae</i> kinberg)	Bogor, Indonesia	73506.08
	2019 International Symposium on Advanced Technologies	Drying Kinetics and Anticoagulant Activity of Microwave-vacuum Dehumidified-air and Freeze-dried African Night Crawler (<i>eudrilus eugeniae</i> kinberg)	Tainan, Taiwan	53,933.21
Rodriguez, Fatima S.	ASABE Annual International Meeting	Detection of Chlorpyrifos-methyl Pesticide Residue in Rough, Brown and Milled Rice using an LED-based NIR Instrument	Massachusetts, USA	63,412.00
	16th ERDT Conference	Detection of Chlorpyrifos-methyl Pesticide Residue in Rough, Brown and Milled Rice using an LED-based NIR Instrument	Heritage Hotel, Manila	2,005.00

Recipients of Research Dissemination Grant

ANNEX D

University of San Carlos				
Abad , Irene Lara	SEECON 2019	Performance Comparison of Diesel Engine Waste Heat Recovery Devices (With and Without Coiled Wire Insert) For Domestic Hot Water	Cebu City, Philippines	4,805.84
Bardon , Orlando	16th ERDT Conference	Self - Compacting Concrete with Fly Ash using Closed Particle Packing	Manila, Philippines	1,800.00
Bas , Jonah Lee	16th ERDT Conference	Sentinel - 2 Derived Land Cover Map Using Pixel Based Classification	Manila, Philippines	1,800.00
Calabio , Lanie	SEECON 2019	Techno-economic Analysis of 1kWp Solar PV System: A Study of Gilutongan Integrated School, Gilutongan Island, Cordova	Cebu City, Philippines	5,268.00
Camanse , Sime	16th ERDT Conference	Properties of Concrete using Fly Ash as an Aggregate Micro-Filler	Manila, Philippines	1,800.00
Candido , Francis Jerric	7th International Conference on Information and Communication Technology 2019	Haversine Method and LoRa for Monitoring Entry of Fishing Vessel in Marine Protected Area	Kuala Lumpur, Malaysia	45, 261.74
Cepedoza , Jeffrey	SEECON 2019	Site Selection of Hydropower Potential Using Geographic Information System (GIS) based on Multi-Criteria Decision Analysis (MCDA): A Case Study in Bohol	Cebu City, Philippines	5,268.00
Demetillo , Alexander	Engineering, Technology & Applied Science Research Journal	"Real-Time Water Quality Monitoring For Small Aquatic Area Using Unmanned Surface Vehicle "		12,360.62
	Journal Nature Environment and Pollution Technology	Real-time Detection of Cyanide in Surface Water and Its Automated Data Acquisition and Dissemination System		19,533.75
	40th Asian Conference on Remote Sensing (ACRS 2019)	Real-Time Water Quality Monitoring Using Unmanned Surface Vehicle with Automated pH Index Mapping	Daejeon, South Korea	53,185.76

Recipients of Research Dissemination Grant

ANNEX D

Esper , Charmane Dawn	ICMSE 2019	Influence of Alkali Treatment and Fiber Content on the Mechanical Properties of Pineapple Leaf Fiber (PALF) - Reinforced Cement-Based Composites via Full Factorial Design	Kyoto, Japan	64,326.70
Espino , Ma. Theresa	Nature Environment and Pollution Technology (Online Journal)	Life Cycle Assessment of the Oil Palm Production in the Philippines: A Cradle to Gate Approach		21,323.25
Galang , Wenylville	40th Asian Conference on Remote Sensing (ACRS 2019)	GIS-Based Methodology on Techno-Economic Potential Assessment of Sugarcane Residues in Medellin, Cebu, Philippines		22,252.49
Iyog , Dindo	SEECON 2019	Productive Use of Energy in Off-Grid Renewable Energy Systems	Cebu City, Philippines	5,268.00
Japitana , Michelle	Engineering Technology & Applied Science Research Journal	A Satellite-based Remote Sensing Technique for Surface Water Quality Estimation		12,429.41
	Journal of Institute of Control, Robotics and Systems (Publication)	Combining Water Indices to Detect Water Bodies using Landsat 8 OLI		13,978.46
	40th Asian Conference on Remote Sensing (ACRS 2019)	A Geoinformatics-Base modeling and mapping techniques for an integrated surface water quality monitoring and assessment	Daejeon, South Korea	67,916.04
Lariosa , Louie	2nd International Conference on Technological Challenges for Better World	Infrared Imaging as a Means of Promoting and Analyzing Energy in Buildings: The Case of an Academic Building in the USC	Cebu City, Philippines	7,500.00
Libres , Melissa	SEECON 2019	Quantifying Rooftop Solar PV Potential in a Small Off-grid Island: Remote Rooftop Area Calculation for Solar Applications and Rooftop-Solar Potential Assessment of Selected Household in Gilutongan Island, Philippines	Cebu City, Philippines	5,268.00

Recipients of Research Dissemination Grant

ANNEX D

Llanita , Ma. Christina	16th ERDT Conference	Mechanical Properties of Moderate - Slump Concrete Containing High-Volume Fly Ash	Manila, Philippines	1,800.00
Mayo , Francis L.	CCSE-ASEAN KONTISI 2019	Commuter Perception of Passenger Safety in Public Transportation in a Developing Country Using Rudit Analysis - The Case of Metro Cebu, Phil.	Jember, Indonesia	24,092.97
Palconit , Eleonor	40th Asian Conference on Remote Sensing (ACRS 2019)	Potential of Integrating Solar Photovoltaic and Battery Systems Towards Clean Energy Solutions for the Maritime Transport Sector in the Philippines	Daejeon, South Korea	49,873.73
Piera , Patrick	ICoICT 2019 Conference	A Wireless Sensor Network for Fire Detection and Alarm System	Kuala Lumpur, Malaysia	33,771.00
Sabarre , Danilo Jr.	18th Asian Pacific Confederation of Chemical Engineering Congress	Characterization of Polyphenol Oxidase from Mango (<i>Mangifera indica</i> var. Philippines) Kernel	Sapporo, Japan	62,981.27
Siacor , Francis Dave	2019 International Conference on Environmental Quality Concern, Control & Conservation	Statistical Solvent Mixture Design for the Extraction of Phenolic Compounds from Mango Seed Kernel		4,970.00
Sungcad , Khareljoy	16th ERDT Conference	Design and Testing of a Single Basin Solar Still with Sand as Sensible Heat Storage Medium	Manila, Philippines	1,800.00
Toledo , Arjay	18th Asian Pacific Confederation of Chemical Engineering Congress	Resource Assessment of Theoretical and Available Potential of Biomass Wastes in the Philippines	Sapporo, Japan	62,981.26
Torre Franca , Imelida	CCSE-ASEAN KONTISI 2019	Dynamic State of Drainage Divide and River Network of Bohol, a Tropical Island in the Central Visayas Region, Phil.	Jember, Indonesia	54,419.15

Recipients of Faculty Research Dissemination Grant

ANNEX E

Recipient	Name of Conference/Journal	Title of Paper	Venue	Amount
De La Salle University				
Adajar, Mary Ann	International Journal of GEOMATE	1. Investigating the effectiveness of Rice Husk Ash as stabilizing agent of expansive soil 2. The use of woven geotextile for settlement reduction of spread footing on granular soil		51,340.32
Culaba, Alvin	11th International Conference on Applied Energy (ICAE2019)	Development of a Forecasting Model for Tropical Solar Energy Systems using Support Vector Regression	Vasteras, Sweden	150,000.00
De Jesus, Richard	International Journal of GEOMATE	1. Analyzing the Impact of Redundant Pipes in Resiliency of Water Distribution Networks 2. Resiliency of 2-storey Dep-Ed Standard School Building using the REDi Framework 3. Resistivity against Sulfate Attack of Concrete with HDPE used as partial substitute for Fine Aggregates 4. Assessment of Testing Protocols for Bamboo for Tension Parallel to Fiber		133,120.00
Dugos, Nathaniel	Tissue Engineering and Regenerative Medicine International Society - AP Chapter and 7th Asian Biomaterials Congress	Effect of Decellularization Parameters in the Production of Renal Extracellular Matrix Scaffolds	Brisbane, Australia	135,893.24
Dungca, Jonathan	International Journal of GEOMATE	1. Dry Mixing Method in Fly-Ash Based Geopolymer as a Stabilizer for Dredged Soil 2. Radial Flow Permeameter: A Proposed Apparatus to Measure Horizontal Hydraulic Gradient of Fly Ash-Based Geopolymer -Soil Mix 3. Vertical Permeability of Dredged Soil Stabilized with Fly Ash-Based Geopolymer for Road Embankment 4. The combined Effects of Nano-Montmorillonite Comprehensive Strength of Concrete		114,060.93

Recipients of Faculty Research Dissemination Grant

ANNEX E

Garciano, Lessandro Estelito	International Conference in Commemoration of 20th Anniversary of the 1999 Chi-Chi Earthquake (ChiChi20)	Quantifying a Resilience Index of a Water Distribution Network (WDN) under Seismic Hazard	Taipei, Taiwan	23,367.90
Materum, Lawrence	10th International Conference on Computer Science, Engineering and Technologies	Interface for the Factor-inclusion Weighting Approach in Determining the Number of Multipath Propagation Clusters	Bangkok, Thailand	80,112.16
Orbecido, Aileen	18th Asian Conferederation of Chemical Engineering Congress (APCCHE 2019)	Determination of the Properties of Mixed Dump Serpentinities from Nickel Mine Site Through Leaching Process for Indirect CO2 Mineral Carbonation	Sapporo, Japan	90,463.13
Seva, Rosemary	International Multi Conference of Engineers and Computer Scientists 2019	Grocery Product Arrangement Using Cluster Analysis;Product- Behavior Targeting: Affective Design Methodology for Sustainability	Hong Kong	86,581.86
Vicerra, Ryan Rhay	2019 Asia-Pacific Conference on Intelligent Robot System (ACIRS 2019)	A pH Regulation System for Perfusion Machine using Computer Vision and Fuzzy Logic	Nagoya, Japan	35,000.00
Mindanao State University - Iligan State University				
Caberos, Aileen B.				53,977.84
Gerasta, Olga Joy				59,272.00
Resabal, Vannie Joy T.	Asia Pacific Confederation of Chemical Engineers (APPC ChE 2019)	Comparative Study Between Sequential Leaching and Direct Leaching methods on the Extraction of Rare Earth Elements from Coal Fly Ash	Sapporo, Japan	119,935.43
University of the Philippines Diliman				
Adorna, Henry N.	Algorithms (Open Access Journal)	On Finding Two Posets that cover Given Linear Orders		51,948.10
Alvarez, Anastacia B.	2019 International Symposium on Multimedia and Communication Technology (ISMAC 2019)	Performance Analysis of Hyperdimensional Computing for Character Recognition	Quezon City, Philippines	15,000.00
	International SoC Design Conference 2019 (ISOCC 2019)	Energy-Quality Scalability of Hyperdimensional Computing for Character Recognition in 65nm CMOS	Jeju, South Korea	109,639.38

Recipients of Faculty Research Dissemination Grant

ANNEX E

Ambatali, Charleston Dale M.	2019 Asia Pacific Conference on Applied Electromagnetics (APACE 2019)	Design and Implementation of a Low Cost Amateur Radio Unit for Cube Satellites	Malacca, Malaysia	93,615.67
Arriola, Nicolette Ann A.	2019 2nd International Conference on Control and Robots (ICCR 2019)	Automated Braking System of Autonomous Trajectory Tracking Vehicle	Jeju, South Korea	117,283.24
Atienza, Rowel O.	2019 IEEE Conference on Computer Vision and Pattern Recognition (CVPR Workshop)	Pyramid U-Net for Skeleton Extraction from Shape Points	California, United States	150,000.00
Balela, Mary Donnabelle L.	2019 International Conference on Applied Surface Science	Preparation of Kapok/Polyacrylonitrile/Copper Nanocomposites for Antimicrobial Application	Pisa, Italy	150,000.00
	2019 International Conference on Thin Films TACT 2019	Fabrication of Superhydrophobic Coating from Modified SiO ₂ Nanoparticles from Geothermal Waste	Taipei, Taiwan	97,783.59
Balicanta, Louie P.	2019 South East Asia Survey Congress (SEASC 2019)	Transformation and Unification of the Different Cadastral Data in the Philippines	Darwin, Australia	150,000.00
Ballesteros, Florencio C.	16th International Conference on Environmental Science and Technology 2019	Fuel Performance of Biodiesel from Microalgae	Rhodes, Greece	132,374.65
Blanco, Ariel C.	21st William T. Pecora Memorial Remote Sensing Symposium (Pecora 21)	Estimation of Chl-a Concentration in Laguna Lake using Sentinel-3 OLCI Images	Maryland, United States	150,000.00
	38th International Symposium on Remote Sensing of Environment (ISRSE-38)			
Cabarle, Francis George C.	Asian Conference on Membrane Computing 2019 (ACMC 2019)	Notes on Improved Normal Forms of Spiking Neural P Systems and Variants; and A Framework for Evolving Spiking Neural P Systems	Xiamen, China	50,501.50

Recipients of Faculty Research Dissemination Grant

ANNEX E

Cajote, Rhandley D.	International Conference on Consumer Electronics 2019 (ICCE-Asia 2019)	Image Processing for Segmentation of Dorsal Striatum from MRI Images	Bangkok, Thailand	101,378.59
	2019 International Symposium on Multimedia and Communication Technology (ISMATC 2019)	Speech Tracking Algorithm for a Reading Tutor in Filipino	Quezon City, Philippines	15,000.00
Caro, Jaime D.L.	10th IEEE International Conference on Information, Intelligence, Systems and Applications (IISA-2019)	Monitoring Application for Farmer Pesticide Use	Achaia, Greece	150,000.00
	12th International Conference of Education, Research and Innovation (ICERI)	Adaptive Virtual Reality Disaster Simulation for Community Training	Seville, Spain	150,000.00
Cervera, Rinlee Butch M.	8th International Conference on Materials Science and Engineering Technology (ICMSET)	XRD and SEM Analyses of Bulk GA-doped Li ₇ La ₃ Zr ₂ O ₁₂ Li-ion Conducting Solid Electrolyte Prepared via Hot-pressing Method	Singapore	120,000.00
Cheng, Steven Matthew C.	2019 Asia-Pacific Microwave Conference (APMC 2019)	Polarization Reconfigurable Two-Layered Stacked Patch Antenna Design for Wi-Fi Applications; and Design and Implementation of a 3D Beam Steering Antenna for Cellular Frequencies	Singapore	120,000.00
De Leon, Franz A.	2019 International Symposium on Multimedia and Communication Technology (ISMATC)	Timbre and Pitch Characterization of Monophonic Samples of Philippine Indigenous Instruments; and Binaural Noise Reduction in Hearing Aid Simulations using a Multichannel Wiener Filter	Quezon City, Philippines	30,000.00
De Leon, Maria Theresa G.	International Symposium on Multimedia and Communication Technology (ISMATC)	Varying Resolution Pipelined ADC for Direct IF Sampling Receiver in Wireless Sensor Networks	Quezon City, Philippines	15,000.00
De Leon, Rizalinda L.	9th International Conference on Key Engineering Materials	Synthesis and Characterization of a Polymer Matrix of Carrageenan, Chitosan and Hyaluronan on Stainless Steel 316L	Oxford, United Kingdom	150,000.00

Recipients of Faculty Research Dissemination Grant

ANNEX E

Espiritu , Richard DV.	Green Chemistry New Zealand Conference (GCNZ19)	Synthesis of Cellulose-based Radiation Grafted Anion Exchange Membranes for Fuel Cell Application	Auckland, New Zealand	150,000.00
Hizon , John Richard E.	Journal of Low Power Electronics	A 0.5V All Digital Phase Locked Loop in a 65nm CMOS Process		29,103.30
	2019 International Symposium on Multimedia and Communication Technology (ISMTC 2019)	Design and Implementation of a Baseband LoRa Demodulator using De-chirp Method	Quezon City, Philippines	15,000.00
	International SoC Design Conference 2019 (ISOCC 2019)	An SDR-based WSN Testbed for RF Front End Simulation and Experimentation	Jeju, South Korea	120,000.00
Macatulad , Edgardo G.	40th Asian Conference on Remote Sensing (ACRS 2019)	Mapping of Ground-level Ozone Distribution and Determining Suitable Locations for Monitoring Stations in the National Capital Region, Philippines	Daejeon, South Korea	105,283.38
Manegdeg , Ferdinand G.	13th International Conference on Energy Sustainability at the American Society of Mechanical Engineers 2019 Energy Sustainability	Academic Building Equipment Standardization for Sustainability	Washington, United States	150,000.00
Mercado , Candy C.	International Journal of Photoenergy under "Advanced Nanomaterials and Nanotechnologies for Solar Energy"	Comparison of Photoelectrochemical Current in Amorphous and Crystalline Anodized TiO ₂ Nanotubes Electrodes		83,214.40
	International Mineral Processing Conference - EURASIA 2019	Accelerated Reduction of Cr(VI) to Cr(III) through Cr(VI) Concentration using Laterite Soil as Adsorbent	Antalya, Turkey	142,781.37
Mercado , Jose Gabriel E.	13th International Conference on Energy Sustainability (ES2019)	Experimental Study on Performance of a Single Cylinder Engine Fuelled with Diesel and Vegetable Oil-Diesel Blends	Washington, United States	150,000.00
Naval , Prospero C., Jr.	Machine Learning Workshop on the Application of Machine Learning to Ecosystem Change Issues in the North Pacific	A Semi-Automated Method for Measuring Reef Fish Population Density and Biomass from Stereo-video Footage	Victoria, Canada	150,000.00

Recipients of Faculty Research Dissemination Grant

ANNEX E

Ocon , Joey D.	22nd Conference on Process Integration for Energy Saving and Pollution Reduction (PRES2018)	High Renewable Energy (Solar Photovoltaics and Wind) Penetration Hybrid Energy Systems for Deep Decarbonization in Philippine Off-grid Areas	Crete, Greece	148,054.83
Odulio , Carl Michael F.	22nd Conference on Process Integration for Energy Saving and Pollution Reduction (PRES2019)	Technoeconomics of Desalination as Demand-Side Management for Philippine Off-Grid Islands	Crete, Greece	150,000.00
Orillaza , Jordan Rel C.	International Journal of Electrical and Electronic Engineering & Telecommunications (IJEETC; Vol.11, No.1 March 2019)	Discriminating Faults from Power Swing using Impedance Angle and Analysis in Three-Dimensional Space		32,340.00
Pajarito , Bryan B.	15th International Conference on Diffusion in Solids and Liquids (DSL2019)	Graphite Nanoplatelets from Waste Chicken Feather	Athens, Greece	150,000.00
Pedrasa , Jhoanna Rhodette I.	EAI International Conference on Society with Future: Smart and Liveable Cities (SC4Life 2019)	Leak Detection in Water Distribution Networks via Pressure Analysis using a Machine Learning Ensemble	Braga, Portugal	150,000.00
Pedrasa , Michael Angelo A.	EAI International Conference on Sustainable Energy for Smart Cities (SESC 2019)	Reverse Power Flow Detection using Optimally-Placed uPMUs in a Distribution System; and Economic Evaluation of PV Generation Curtailment and Voltage Regulation Investment in Distribution Networks with High PV Penetration	Braga, Portugal	150,000.00
Quinay , Pher Errol B.	4th International Conference on Civil and Building Engineering Informatics (ICBEI2019)	Development of Static and Dynamic Modeling Approaches using Frame Models for City Seismic Response Analysis	Miyagi, Japan	84,025.83
Quiros , Edwin N.	13th International Conference on Energy Sustainability (ES2019)	Performance Characteristics of Philippine Hydrous Ethanol-Gasoline Blends - Preliminary Findings; and Improving Fuel Economy Estimates on a Chassis Dynamometer using Air Conditioner Correction Factors	Washington, United States	150,000.00

Recipients of Faculty Research Dissemination Grant

ANNEX E

Regidor, Jose Regin F.	13th International Conference of the Eastern Asia Society for Transportation Studies (EASTS)	Application of Complete Streets Concept on the Central Business District of Tacloban City Focused on Urban Bikeway Design; Assessment of Transportation Network Vehicle Services from Drivers' Perspective	Colombo, Sri Lanka	115,212.32
Rollon, Analiza P.	16th International Conference on Environmental Science and Technology 2019	Methane Production and Waste Stabilization in Anaerobic Co-digestion of Food Wastes, Biosolids and Used Cooking Oil	Rhodes, Greece	150,000.00
Rosales, Marc D.	2019 International Symposium on Multimedia and Communication Technology (ISMATC 2019)	Characterization of Low Cost Wideband Direct Modulation Radio over Fiber Link; and Implementation of a Physical Layer Wireless Sensor Network Testbed using Software Defined Radios	Quezon City, Philippines	30,000.00
	International SoC Design Conference 2019 (ISOCC 2019)	Design and Implementation of a Self-Starting Thermal Energy Harvester with Resonant Startup and Maximum Power Point Tracking Capabilities for Wireless Sensor Nodes	Jeju, South Korea	120,000.00
Soriano, Jaymar B.	28th Annual Meeting of the Organization for Computational Neuroscience (CNS 2019)	Probing the Association between Axonal Sprouting and Seizure Activity using a Coupled Neural Mass Model	Barcelona, Spain	132,531.80
Tupas, Mark Edwin A.	Japan Geoscience Union Meeting (JpGU 2019)	Updates on the Development of the Image Acquisition and Scheduler Portal for the Asian Microsatellite Consortium (AMC) from the Philippines' "STAMINA4Space Program"	Chiba, Japan	116,758.89
Vasquez, Magdaleno R., Jr.	Results in Physics (Elsevier)	Fabrication of Oxidized CuO and Spray-Pyrolyzed TiO ₂ Heterojunction Thin Film		28,423.45
	58th Volume of the Japanese Journal of Applied Physics	Grafting of Acrylic Acid onto Microwave Plasma-Treated Polytetrafluoroethylene (PTFE) Substrates		10,702.88
	21st International Vacuum Congress (IVC-21)	Extraction and Transport of Broad Hyperthermal Ar Ion Beams		150,000.00
	Results in Physics (Elsevier)	Adsorption of Diclofenac Sodium in Aqueous Solution using Plasma-activated Natural Zeolites		28,672.05
Zarco, Mark Albert H.	World Bosai Forum / IDRC 2019	Collaborative and Peer Learning in a Transdisciplinary Context	Sendai, Japan	108,272.20

Recipients of Faculty Research Dissemination Grant

ANNEX E

University of the Philippines Los Baños				
Aguirre , Rodolfo Jr. A.	IEEE APPEECC 2019	Sizing and Siting of a Concentrating Solar Power Plant in an Unbalanced Radial Distribution System	Macau, China	40,018.44
	IEEE PES GTD Grand International Conference and Exposition sia 2019	Optimal Load Balancing and Capacitor Sizing and Siting of an Unbalanced Radial Distribution Network	Bangkok, Thailand	35,000.00
Ancheta , Al Kaxier G.	2019 International Joint Conference on JSAM and SASJ, and 13th CIGR VI Technical Symposium Joining FWFNWG and FSWG Workshops	Optimization of process conditions for batuan (Garcinia binucao (Blanco) Choisy) fruit powder production	Sapporo, Japan	66,228.72
Arabit-Cruz , Jimyl	9th International Conference on Advanced Materials Research (ICAMR 2019)	Effect of Ingredient Loading and Temperature on the Tensile Properties Surfactant-Loaded natural rubber vulcanizates	Singapore	35,000.00
Carpio , Rowena B.	2019 5th International Conference on Biotechnology and Agriculture Engineering (ICBAE 2019)	Hydrothermal liquefaction of wastewater algal biomass: A comparative study using a tubular and Parr batch reactors	Tokyo, Japan	120,000.00
Detras , Monet Concepcion M.	26th Regional Symposium on Chemical Engineering	Parametric and Optimization Studies for Biochar Production from Municipal Solid Wastes (MSW) via Pyrolysis	Kuala Lumpur, Malaysia	113,598.06
Eusebio , Ramon Cristian P.	2019 International Conference on Environmental Quality Concern, Control and Conservation	Microalga species prioritization for sustainable bioethanol production using calibrated fuzzy AHP and grey relational analysis	Tainan and Kaoshiung, Taiwan	66,779.74
Garing , Clare L.	9th International Conference on Key Engineering Materials (ICKEM 2019)	Mechanical Properties of Ternary-filled Natural Rubber Composites	Oxford, United Kingdom	35,000.00
Migo , Veronica P.	26th Regional Symposium on Chemical Engineering	Chromium Removal from Chrome Tannery Effluent after Alkaline Precipitation by Adsorption using Municipal Solid Wastes-Derived Activated Biochar	Kuala Lumpur, Malaysia	103,920.00
Paras , Fernando Jr. O.	International Conference on Green Agro-Industry and Bioeconomy 2019	Development of a solar heat assisted egg incubation system	East Java, Indonesia	71,897.76

Recipients of Faculty Research Dissemination Grant

ANNEX E

Saludes , Ronaldo B.	40th Asian Conference on remote Sensing (ACRS 2019)	Effect of Climate Change on Site Suitability and Reliability of Small Farm Reservoir on Oriental, Mindoro, Philippines	Daejeon, Korea	80,461.74
Tajanlangit , Gianina Martha A.	8th International Conference on Engineering and Innovative Materials (ICEIM 2019)	Effect of Processing Parameters on the Electrospinning of Iron-Modified Montmorillonite (Fe-MMT)/Polycaprolactone Nanofiber Mat	Tokyo, Japan	118,650.58
University of San Carlos				
Labrador , Christopher James	CCSE-ASEAN KONTISI 2019	Water Management System through Wireless Sensor Network with Mobile Application	Jember, Indonesia	18,918.56
Saavedra , Linda	CCSE-ASEAN KONTISI 2019	Video-Based Traffic Density Calculator with Traffic Light Control Simulation	Jember, Indonesia	18,918.56
Tabañag , Ian Dominic	14th Asian Congress on Biotechnology	Valorization of Lignin Derived from spent Degumming Liquor for Solid Biofuels Production	Taipei, Taiwan	29,527.27
Taboada , Evelyn	14th Asian Congress on Biotechnology	Microencapsulation of Phenolic Compounds from Mango Seed Kernel Extract by Spray Drying	Taipei, Taiwan	33,553.72