Research, Development, Innovation, Linkages and Extension (RDILE)
CONTRIBUTORS:
1. Office of the Executive Vice President for Academic Affairs
2. Office of the International Linkages for Research & Development
3. Sustainable Development Research Office
4. Social Orientation and Community Involvement Program Office
5. Directed Research for Innovation and Value Enhancement
6. Corporate Communications Office
7. Academic Departments
8. Campus Development and Maintenance Office
INTRODUCTION

MIT has long been an advocate of environment conservation and engineering for the environment, beginning with the opening of its B.S. Environmental and Sanitary Engineering (EnSE) program in 1958, followed by the opening of its Master of Science in Environmental Engineering program in 2001 and Ph.D. in Environmental Engineering program in 2004. Furthermore, the Institute has also included environmental engineering and environmental science courses in all of its engineering and non-engineering programs, respectively. MIT believes that these courses are enough introductions for all the students to understand the condition of the environment and make contribution in order to protect the environment. It is also believed that these courses as well as subsequent courses of their program of study are sufficient to train them to be able to design, construct, and implement sustainable solutions to environmental problems.

To complement its instruction, MIT included in its 2010–2020 initiatives the research for sustainable development and the reduction of environmental footprints. Research for sustainable development and internet of things has been the thrust of MIT. The Office of International Linkages for Research and Development (ILRAD) has been established. ILRAD provides links, platforms and venues for Mapúa’s international research and development. ILRAD cooperates with the Environmental Education and Training Unit of United Nations Environment Programme (EETU-UNEP) to be informed on contemporary issues. Mapúa become a member of UNEP Global Universities Partnership on Environment for Sustainability (GUPES) as a result of the cooperation. Faculty members and students participate in scientific conferences, workshops, seminars, fora and related activities with government agencies, industry, and non-government organizations (both national and international). This is part of the strategy for the quest on ‘engineering for the environment and sustainable development.’

ILRAD has an additional task, i.e, to carry out the research initiative of Mapúa in cooperation with different departments. MIT, initiated by the Campus Development and Maintenance Office (CDMO), has replaced all of its lamps with more energy-efficient bulbs. This was followed by the installation of inverters on its air-conditioning units. These activities resulted to 7% reduction on its energy consumption per person. Also, the research initiative program of Mapúa conducted campus environmental quality and footprint monitoring in 2013. This was in cooperation with the Social Orientation and Community Involvement Program (SOCIP), the Institutional Laboratories Management Office (ILMO) and the Environmental Engineering Graduate Program. Results of research initiative are then utilized for campus improvement.
Apart from its international and internal efforts, MIT through SOCIP, has extension services (local and national community). SOCIP has conducted seminars on recycling, energy conservation, use of renewable energy, lecture on carbon footprint reduction and skill development. Also, SOCIP conducted information drive on global warming and pollution in the community; and tree-planting and clean-and-green projects. These activities are in partnership with the local government and non-government organizations. As part of the awareness activities, Mapúa has released T-shirts showing environmental resources conservation and protection.

Mapúa contributes to poverty alleviation not only by providing some communities means for living but also by sharing knowledge, best practices, and developing skills and individual capacity to find ways to improve their economic stature. Mapúa, being the biggest producer of engineers in the Philippines and contributes competent workforce not only in the country but globally, aids to the attainment of the United Nations sustainable development goals.

**VISION – MISSION OF MAPÚA**

**VISION**

Mapúa shall be among the best universities in the world.

**MISSION**

The Institute shall provide a learning environment in order for its students to acquire the attributes to become globally competitive. The Institute shall engage in economically viable research, development and innovation. The Institute shall provide state-of-the-art solutions to problems of industries and communities worldwide.

**TARGET OUTCOMES**

Mapúa aims to produce graduates equipped with knowledge, and lifelong learning ability that will help them produce design solutions for complex engineering problems and design systems with consideration for the public health, safety, cultural, societal and the environment; understand the risks and impacts of professional engineering solutions in societal, economic, and environmental context; and demonstrate knowledge of and need for sustainable development. Mapúa aims to contribute to the world’s sustainability.
Part 1: Research and Publication
EALDAMA, ANNA CHRISTINA G.

Contact Detail:
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(+63 2) 2475000 local 5401

Educational Background:
BS Architecture
MS Architecture

Priority Research Interest:
Heritage Conservation, Architectural Regeneration, Vernacular Building Traditions

Major Publications

PARUMOG - PERNIA, MICHELLE P.

Contact Detail:
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(+63 2) 2475000 local 5401

Educational Background:
BS Architecture
MA in Transportation Planning
PhD Engineering in Environmental Science

Priority Research Interest:
Urban and Regional Planning

Major Publications
2. Earmarking Transport taxes and Charges for Transport Infrastructure Investment in East Asia: Issues and Challenges”, Institute for Transport Policy Studies Report No. 200901, ITPS

REODIQUE, CATHERINE C.

Contact Details:
ccreodique@mapua.edu.ph
(+63 2) 2475000 local 5401

Educational Background:
BS Interior Design
MA Interior Design

Priority Research Interest:
Historical Interiors; Philippine Studies and Culture

Major Publications
List of 2014 Research of School of ARIDBE with Internal Fund through DRIVE:

2. Cordillera GI-clad Clapboard Structures: Explorations in Domestic and Religious Structures in Mountain Province by Anna Christina Ealdama, and the Research Team
3. The Organic Development of urban Residential Spaces: A Look into the Aesthetic and Social Aspect in Architecture by Shiela V. Elardo
5. Social Causes and Implications in the Design changes of Architectural Openings in Filipino Houses by Catherine Reodique, and Research Team.


18. Liquid heat capacity of the solvent system (piperazine + n-methylmethanolamine + water). The Journal of Chemical Thermodynamics, Volume 42, Issue 1, January 2010, Pages 54-59


Patents


DE JESUS, MEDARLO B.

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mbdejesus@mapua.edu.ph
(+63 2) 2475000 local 1307

Educational Background:
BS Chemical Engineering
MS Chemicals Engineering

Priority Research Interest:
Thermodynamics

Major Publications


DOMA, BONIFACIO JR. T.

Contact Detail:
btdoma@mapua.edu.ph
(+63 2) 2475000 local 1307

Educational Background:
BS Chemical Engineering
MS Chemical Engineering
PhD Chemical Engineering

Priority Research Interest:

Major Publications

1. Synthesis of Gelatin-Polyglutamic Acid-Based Hydrogel for the In-Vitro Controlled Release of Epigallocatechin Gallate (EGCG) from Camellia sinensis, Polymers 2014, 6, 39 – 58.

ESPIRITU, ELIZABETH S.
Contact Detail:
esespiritu@mapua.edu.ph
(+63 2) 2475000 local 3302
Educational Background:
BS Chemical Engineering
MS Chemical Engineering
Priority Research Interest:
Thermodynamics
Major Publications

LERON, RHODA B.
Contact Detail:
rbleron@mapua.edu.ph
(+63 2) 2475000 local 3302
Educational Background:
BS Chemical Engineering
MS Environmental Engineering
PhD Chemical Engineering
Priority Research Interest:
Measurements of vapour-liquid equilibrium data for and thermophysical properties of advanced carbon dioxide absorbents.
Major Publications
18. Densities and refractive indices of the deep eutectic solvents (choline chloride + ethylene glycol or glycerol) and their aqueous mixtures at the temperature ranging from 298.15 to 333.15 K. Journal of the Taiwan Institute of Chemical Engineers, Vol. 43, 2012, pp. 551-557.

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NIEVA, AILEEN D.

Contact Detail:
adnieva@mapua.edu.ph
(+63 2) 2475000 local 3302

Educational Background:
BS Chemical Engineering
MS Environmental Engineering
PhD Chemical Engineering, candidate
PhD Environmental Science, units

Priority Research Interest:
Biosorption using agricultural wastes, Life cycle assessment

Major Publications

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SALVACION, JONATHAN W. L.

Contact Detail:
jlsalvacion@mapua.edu.ph
(+63 2) 2475000 local 2103

Educational Background:
BS Chemical Engineering
MS Chemical Engineering
PhD Chemical Engineering

Priority Research Interest: 
Polymer degradation, Waste engineering

Major Publications


12. Textbook Polymer Materials: Fundamentals and Applications, under textbook writing grant from the University of the Philippines, completed 2004


Major Publications


4. Density and vapor pressure of mixed-solvent desiccant systems (propylene glycol or dipropylene glycol or tripropylene glycol + magnesium Chloride + water ). The Journal of Chemical Thermodynamics, 2013, accepted for Publication


7. Thermophysical characterization of aqueous ternary system containing n-tris-[hydroxymethyl]methyl-1-3-amino propanesulfonic acid and glycol (PG or DPG or TPG), the Journal of Chemical Thermodynamics, 2013, Vol,59, No.4. pp.80-86.


9. Densities and refractive indices of the deep eutectic solvents (choline...
chloride + ethylene glycol or glycerol) and their aqueous mixtures at the temperature ranging from 298.15 to 333.15 K. Journal of the Taiwan Institute of Chemical Engineers, 2012, Vol. 43, No. 4, pp.531-537.


42. Kinetics study of carbon dioxide absorption into aqueous solutions containing N-methyldecanolamine + diethanolamine. Journal of the Taiwan Institute of Chemical Engineers, 2009, Vol. 40, No. 4, pp. 403-412. (Awarded the 2010 Prof. Yin-Ping Shi Research Paper Award by the Institute of Chemical Engineers, Chinese Taipei)
45. Vapour pressures, densities, and viscosities of the aqueous solutions containing (triethylene glycol or propylene glycol) and (LiCl or LiBr). The Journal of Chemical Thermodynamics, 2009, Vol. 41, No. 5, pp. 623-631.

TAYO, LEMUEL L.

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lltayo@mapua.edu.ph
lemueltayo@yahoo.ca
(+63) 9189901980

Educational Background:
BS Chemistry
MS Biochemistry
PhD Marine Science (Biotechnology)

Priority Research Interest:
Biochemical Pharmacology and Environmental Toxicology,
Development of Chemical, Biochemical and Molecular Tools for Marine Biology Studies, Marine Pollution, Development of Marine Natural Products as Drugs, Nanoparticle Technology for Drug and Gene Delivery

Major Publications
1. “Functional PAA-b-PSBMA outer core of PDMAEMA polyplexes improves hemocompatibility and gene transfection efficiency in acidic conditions” (In Press)
2. “Intelligent Hemocompatible PEGylated Hydrogels Containing pH-Responsive Poly(dimethylaminoethyl methacrylate) for the Controlled Release of Insulin” (In Press)

List of School of CHE-CHM Research with Internal Fund through DRIVE:
1. Isolation and Structure Elucidation and Pharmacological Activities of Secondary Metabolites from the different Philippine Medicinal Plants by Kathlia De Castro, Marilyn Miranda.
2. Isolation Structure Elucidation Termicidal Activities of Secondary metabolites from the different Philippine Medicinal Plants by Kathlia De Castro, Marilyn Miranda.
3. Fabrication of filter media using Indigenous material for Used Cooking Oil Rejuvenation by Kathlia De Castro.
Major Publications

TAN, FIBOR J.

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(+63) 922 4824763

**Educational Background:**
- BS Civil Engineering
- MS Environmental Engineering
- PhD Civil Engineering (candidate)

**Priority Research Interest:**
- Water Resources
- Surface flow constructed wetland

**Major Publications**

**Current Research Activities:**
1. DATA VALIDATION OF LIDAR DEM AND ITS UTILIZATION IN WATERSHED MODELING AND FLOOD HAZARD ASSESSMENT: THE CABARZON RIVER BASIN  
   Project Leader  
   Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD-DOST)

UY, FRANCIS ALDRINE A.

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(+63) 9178030779  
(+63) 9989637675

**Educational Background:**
- BS Civil Engineering
- MS Civil Engineering (Structural Engineering)
- PhD Civil Engineering (Transportation Engineering)

**Priority Research Interest:**
- Intelligent Transportation Systems; Environmentally Sustainable Transportation (EST); Non-Motorized Transportation (NMT); Public Mass Transportation System; Road Safety Engineering; Development of Mobile Content for Engineering Education and Practice; Crowdsourcing Techniques in Engineering Research; Sustainable Development Rating System (Green Building Rating); Geospatial Information and Civil Systems (GICS)

**Major Publications**
Current Research Activities:
1. IRG-25-2013 Mobile Millennium Asia: Mobile Productivity and Chairman Utility Tools for Inclusive Urban Mobility EASTS IRG (International Research Group) Eastern Asia Society for Transportation Studies (EASTS)

2. ASEAN Green Building Rating System Chairman Philippine Technological Council (PTC)


DOST Funded Project:
1. LIDAR Data Processing and Validation in Luzon: CALABARZON (Region IVA except Laguna) Project Leader: FAA Uy Project Members: FJ Tan, R Bacero, E Cruz, MU Fernandez, F Villasenor, J Buluran, and AS Daag

School of Electrical, Electronics, and Computer Engineering
AVENDANO, GLENN O.
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goavendano@mapua.edu.ph
(+632) 2475000 local 2100

Educational Background:
BS Electronics Engineering Master of Engineering (ECE) PhD in Electronics (Dissertation)

Priority Research Interest:
Internet-of-Everything (IoE) related research, Internet Protocol projects, wireless and sensor networks, online learning development.

Major Publications

BALLADO, ALEJANDRO JR. H.
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Educational Background:
BS Electronics Engineering Master of Engineering (ECE) PhD in Electronics Engineering (Dissertation)

Priority Research Interest:
Smart Antenna, Wireless Systems, Microwaves, RF, and Wave Propagation

Major Publications

CALUYO, FELICITO S.

Contact Detail:
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Educational Background:
BS Electrical Engineering
Master of Engineering (EE)
Maitrise en Electronic et Communication
Diplome d’Etudes Approfondies (Communications Optiques et Microondes)
PhD in Electronics

Priority Research Interest:
Energy systems, Control Systems, Signal Processing, Microwaves and Optical Communications, Microelectronics, Machine Learning and Pattern Recognition

Major Publications
4. Shielding Effectiveness of Nickel coated Polycarbonate Film. DLSU Engineering Journal Vol 18, March 2006
5. “Path Loss at the Exact Location of TV inside Residences using Digital Terrestrial Television Signal at 677 MHHz”. International Journal of Scientific & Technology Research Volume 1, Issue 6, July 2012 ISSN 2277-8616

CRUZ, FEBUS REIDJ G.

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Educational Background:
BS Electronics and Communications Engineering
MS Electronics and Communications Engineering
PhD Electronics and Communications Engineering (on-going)

Priority Research Interest:
Circuit development, remote multi-ion sensing

Major Publications

Chip Fabrication
1. CMOS Readout Circuit for Three-Electrode Amperometric Sensor, MXIC 0.50um 1P2M CMOS Technology, Taiwan R.O.C., 2010.
3. Ion Sensitive Field Effect transistor Bridge Readout Circuit with Voltage Reference, TSMC 0.35um 2P4M CMOS Technology, Taiwan R.O.C., 2008.
4. Ion Sensitive Field Effect Transistor Bridge Readout Circuit, MIMOS 0.35um 2P3M CMOS Technology, Malaysia, 2008.
5. Symmetrical Operational Transconductance Amplifier, TSMC 0.35um 2P4M CMOS Technology, Taiwan R.O.C., 2007.
DELA CRUZ, JENNIFER C.

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(+63 2) 2475000 local 2300

Educational Background:
- BS Electronics Engineering
- MS Electronics and Communications Engineering
- PhD Electronics and Communications Engineering

Priority Research Interest:
Antenna Systems, Transmission Lines Systems, RF Modelling, Digital TV

Major Publications

LAZARO, JOSE JR. B.

Contact Detail:
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(+63 2) 2475000 local 2300

Educational Background:
- BS Computer Engineering
- MS Computer Engineering

Priority Research Interest:
Artificial intelligence, machine learning, image/signal processing, embedded systems, microelectronics and digital systems

Major Publications

LINSANGAN, NOEL B.

Contact Detail:
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(+63 2) 2475000 local 2300

Educational Background:
- BS Computer Programming Engineering
- M. Engineering Computer

Priority Research Interest:
Wavelength algorithm, Wireless computer system, Computer Networking

Major Publications

MANLISES, CYREL ONTIMARE

Contact Detail:
ccontimare@mymail.mapua.edu.ph
cyrel_ontimare@yahoo.com
(+63 2) 2475000 local 2300

Educational Background:
- B. S. Computer Engineering
- M. S. Computer Science
- PhD Electronics and Communications Engineering (On-going)

Priority Research Interest:
Wireless Computer System, Pattern Recognition and Microelectronics application

Major Publications
PACIS, MICHAEL C.

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(+63) 9164911254

Educational Background:
BS in Electrical Engineering
Master of Engineering in Electrical Engineering
(Power Systems)
PhD Electrical and Electronics Engineering-Power Systems
(in progress)

Priority Research Interest:
Power Systems: Modelling, Protection, Reliability, Stability and Control / Distributed Generation

Major Publications
5. Modeling and Simulation of Active Power Filters for Harmonic Compensation, Voltage Sags and Swell Mitigation and Power Factor Correction, The Electrical Engineer, Fourth Quarter 2011, pages 28-32
7. Reliability Assessment of a Microgrid Network with the presence of Distributed Energy Resources, The Electrical Engineer, 1st Quarter Issue, April 2013

PAGLINAWAN, ARNOLD C.

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acpaglinawan@mapua.edu.ph
(+63 2) 2475000 local 2300

Educational Background:
BS Electronics and Communications Engineering (ECE)
Master of Engineering in ECE
PhD Electronics and Communications Engineering

Priority Research Interest:
Microelectronics Applications, IC Design for Biomedical Applications, Digital IC Design, SOC Applications, Embedded Design

Major Publications

SANTIAGO, RONALD VINCENT M.

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rvmantiago@mapua.edu.ph
(+632) 2475000 local 8009

Educational Background:
BS Electrical Engineering
Master of Engineering-Major in Electrical Engineering, Magna Cum Laude
MS EE (Completed Academic Units)

Priority Research Interest:

Major Publications
TORRES, JUMELYN L.

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Educational Background:
BS Electronics Engineering
MS Computer Engineering

Priority Research Interest:
LiDAR, Dengue (Detection of Aedes Egypti), genetic algorithm

Major Publications

List of 2014 Research of School of EECE with internal fund through DRIVE:

1. Web Based Speed and Endurance Assessment with Monitoring system using Wearable Device with Accelerometer and Improved Stethoscope through Broadband Technology by CyrelOntimare Manlises and Jesus Martinz, Jr.
3. Mapua Digital Broadcast Laboratory and Media Centre (Phase 2) by Jennifer Chua Dela Cruz, Alejandro Ballado, Jr., Flordeliza Valiente.
4. Proposed Internet Protocol Television (IPTV) Design from Mapua Digital Broadcast Facility to other Malayan Campuses by Jennifer Chua Dela Cruz, Marloun Sejera, Alejandro ballado Jr., Jose Cardenas.
7. Computer Diagnostic Tool and Monitoring System with SMS Notification by Eric Navarro, Febus Reidj Cruz, Ramon Garcia.
8. Electronic Pest Exterminator for Household Use by Calos Hortinela IV, Ernesto Vergara Jr., Ramon Garcia.
10. Matlab based ECG and EMG Signal Synthesizer and Microcontroller-based Trainer Module for ECG and EMG Detection and Diagnostics by Jesus Martinez Jr., Joseph Bryan Ibarra, Marloun Sejera

15. Remote controlled Wall Climbing Robot by Glenn Magwili, Joseph Bryan Ibarra, Carlos Hortinela IV.
16. Two Wheeled Segway type Personal mobile Transporter by Glenn Magwili, Joseph Bryan Ibarra.
21. Modular Object oriented dynamic Environment (MOODEL) for the Outcomes Based Technology and Learning System by Analyn Yumang, Glenn Magwili, Jose Cardenas.

DOST Funded Project:
1. LIDAR data Processing, Modeling, and Validation by HEIs for the Detailed Resources Assessment in Luzon: CALABARZON (Region IVA)
   Project Leader: FS Caluyo
   Project Members: J dela Cruz, R Garcia, G Magarli, E Vergara Jr., J Torres, J Lazaro Jr., R Sedilla
ELIQUEN, NILDA S.

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nseliquen@mapua.edu.ph
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Educational Background:
BS Chemical Engineering
MS Computer Science
PhD in Computer Science (in progress)

Priority Research Interest:
Social Computing, Social Network Analysis; Agent Based Modeling and Simulation; Data Analytics

Major Publications
1. Dissecting Disaster Tweets for Meaningful Patterns. CGAT 2013, Singapore. DOI: 10.5176/2251-1679.CGAT13.18

RODRIGUEZ, RAMON L.

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Educational Background:
Bachelor of Science in Computer Science
Master in Information Technology
Doctor of Philosophy in Computer Science (in progress)

Priority Research Interest:
Intelligent Tutoring Systems, Affective/Emphatic Computing, Languages
Signal Processing and Educational Technology

Major Publications

MACAYAN, JONATHAN V.

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(+63) 9473627522

Educational Background:
BS Psychology
MA Psychology (Major in Industrial-Organizational Psychology)
PhD Educational Psychology (Major in Quantitative Methods)

Priority Research Interest:
Psychometric Test Development and Analysis
Educational Psychology
Human Performance
Personality, Motivation, & Cognition

Major Publications

OFALIA, BERNARDINO C.

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(+63) 9065119010

Educational Background:
BS Psychology
MA Psychology
Doctor of Education major in Educational Administration

Priority Research Interest:
Educational Psychology, Developmental Psychology, Counselling and Program Development, Motivation

Major Publications
PINUGU, JASMINE NADJA J.

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Educational Background:
- BS Psychology
- MA Counselling
- PhD Educational Psychology major in Human Development and Learning (Candidate)

Priority Research Interest:
- Educational Psychology, Developmental Psychology, Counselling and Program Development, Motivation

Major Publications

SACDALAN, KAREN D.

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Educational Background:
- AB Psychology
- MA Psychology (Major in Industrial-Organizational Psychology)
- PhD in Special Education (On-going)

Priority Research Interest:
- Childhood Disability, Educational Psychology, Special Education, Industrial/Organization Psychology

Major Publications

QUINTO, EDWARD JAY M.

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- (+63) 9178795806

Educational Background:
- AB Mass Communication - Journalism with 18 units of Education
- MA Applied Linguistics (English), PhD in Applied Linguistics (on going),

Priority Research Interest:
- Psycholinguistics, Discourse Analysis, Bilingualism and Multilingualism, Sociolinguistics

Major Publications
2. BSTC Program for Research and Development by Ma. Eliza Torres.
3. English language Research on MELT and TOEIC by Ma. Eliza Torres

List of SLHS Research with Internal Fund through DRIVE:
2. International Student’s Academic support Satisfaction: Scale Development and Implications to Program Development by Jasmine Nadja Pinugu, Bernardino Ofalia.
BELINO, MANUEL C.

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Educational Background:
Bachelor of Science in Mechanical Engineering
Master in Engineering Education Major in Mechanical Engineering
Master of Theological Studies
Doctor of Education in Religious & Values Education
Doctor of Philosophy in Mechanical Engineering (candidate)

Priority Research Interest:
Indoor Air Quality, Air-Conditioning, Engineering Ethics, Engineering Education

Major Publications
1. International Perspectives in Convergence : Humanitarian Engineering and Social Entrepreneurship edited by Thomas College of Penn State University 2012
2. ASME Today's Lighting-up an Upland Community in the Philippines through the Micro-Hydro Project (March 2012)
3. Indoor Air Quality and the Learning Environment of Children in Recent Environmental Research at De La Salle University. 2012.
5. 1960s to 1990s in Chronicles of Refrigeration and Air-conditioning in Tropical Philippines (to be published by De La Salle University Press.
13. “Assessment of Chemical and Biological Contaminants and Improvement of Air Quality in Air-Conditioned Urban Buses.” DLSU-COE Journal XVIII. 2005

VEA, REYNALDO B.

Contact Detail:
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(+63 2) 2475000 local 1200

Educational Background:
Bachelor of Science in Mechanical Engineering
Master of Science in Naval Architecture Marine Engineering
Doctor of Philosophy major in Marine Transportation Systems

Priority Research Interest:
Engineering Education and Practice, Ship Propeller Design, Ship Propulsion, Ship Operation and Port Operation

Major Publications
1. Revolution in Philippine Engineering Accreditation through a Rapid Evolution, co-authored with Jose B. Cruz, Jr.and Dr. Ceferino L. Follosco, 1-2008 Global Colloquium on Engineering Education (GCEE), American Society for Engineering Education (ASEE), October 2008

4. Filipino Engineers: From the Trenches of Zapote to Every Corner of the World, Education Section, Philippine Star, April 23, 2009.


Publication as Speaker


3. Speaker, Revised Guidelines in the Formulation of CHED Policies, Standards and Guidelines (PSGs) of Baccalaureate Level Academic Programs, Capacity Building Training-Workshops on Outcomes-Based Education (OBE) and Program Assessment, Commission on Higher Education (CHED), Quezon City, May to June 2014.


7. Plenary Speaker, Quality, Curriculum, and Assessment in the Context of the K-12 Reform, Forum on: Continuing the Education Revolution: K12 to 2016 and Beyond, Philippine Business for Education (PBEd), Makati City, October 2013.


11. Panel Discussant, Assessing the quality of training - What steps are being taken, or should be taken, to strengthen MET in the Philippines?, Asia-Pacific Manning & Training Conference, Manila Calling: Charting the Future for Filipino Maritime Manpower, Manila, November 2012.


14. Speaker, What is your University’s role as an agent of economic change and development in your society?, University of Guam 60th Anniversary Presidential Forum, Guam, USA, July 2012.

15. Speaker, Smart Technologies for Global Competitiveness, Philippine Association for the Advancement of Science (PHILAS), 61st Annual Convention, Makati, September 2012.


17. Speaker, Outcomes-Based Education and Accreditation, Commission on Higher Education – Office of Programs and Standards (CHED-OPS) Seminar, Quezon City, July 2012.


22. Speaker, PACU Consultation on K-12 and Outcomes- and Typology-Based Quality Assurance in Higher Education, Philippine Association of Colleges and Universities (PACU) Expanded Board Meeting, Quezon City, Philippines, January 2012.

23. Plenary Speaker, Experiences in Engineering Education Quality and International Accreditation: Keys to Competitive Global Engineering Practice, 2nd Engineering Supervisors of the Technical College (PFTC) and ASEAN Academy of Engineering and Technology (AAET), Manila, Philippines, January 2012.

24. Speaker, The Private Schools’ Response in Preparation for the Implementation of the K to 12 Program, First National Administrators’ Congress of the Association of Philippine Private School Administrators and Mentors (APPSAM), The Dynamics of School Leadership: Responding to the Challenges of the...
EARNHART, RICHARD T.

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Educational Background:
- BS Chemical Engineering
- MS Mathematics
- PhD Mathematics (Academic units completed)

Priority Research Interest:
Combinatorial Knot Theory, Applied Geometry

Department of Mathematics

Major Publications

EXCONDE, MARIA ROSARIO C.

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Educational Background:
- BS Chemical Engineering
- MAEd with specialization in Computer Assisted Instruction
- Doctor of Technology (Academic units completed)

Priority Research Interest:
Educational Pedagogy

Major Publications

SABINO, LILIBETH D.

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Educational Background:
- BS Mathematics
- MAEd with specialization in Computer Assisted Instruction
- Doctor of Technology

Priority Research Interest:
Educational Pedagogy

Major Publications

SILVA, DANTE L.

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- (+63 2) 2475000 local 1301

Educational Background:
- BS Civil Engineering
- MS Math
- PhD Educational Management

Priority Research Interest:
OBE Sustainable Development

Major Publications
1. 4mat Teaching Cycle: Brain-based Approach To Teaching, Philippine Journal Of Engineering Education (PATE)

List of Research with Internal Fund through DRIVE
1. Exploratory Use of Mathematical Modeling in Sustainable Developments as Engaged in Students Concept of Needs and Limitations by Dante Silva, Melvyn Alviso, Rosario Exconde, Raquel Toedoro.
AGAS, JOYRENCE MERVIN Q.

Contact Detail:
jmqagas@mapua.edu.ph

Educational Background:
B.S. Chemical Engineering
M. Ed. Physics
Ph. D. Environmental Engineering, Candidate

Priority Research Interest:
Environment and Physics Education

DOST Funded Research:
1. Determination of heavy metals along Talundon and Beata area along Pasig River (2009)
2. Levels of endocrine disruptive chemicals along Estero de Pandacan (2010)

BAUN, SARKHAN S.

Contact Detail:
ssbaun@mapua.edu.ph
(+632) 247-5000 local 4301

Educational Background:
BS Physics for Teachers
MS Education Major in Physics

Priority Research Interest:
Physics Education

Major Publications

GABAYNO, JAQUE LYNN F.

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Educational Background:
B.S. Chemical Engineering
M. Ed. Physics
Ph. D. Environmental Engineering, Candidate

Priority Research Interest:
Optical Materials and Testing, Physics Education

Major Publications

LOZADA, MAY M.

Contact Detail:
nmlozada@mapua.edu.ph

Educational Background:
BS Chemical Engineering
Masters in Educational Management

Priority Research Interest:
Physics Education

Major Publications
ISSN 01117-150X.
MANLAPIG, BOBBY D.

Contact Detail: bdmanlapig@mapua.edu.ph

Educational Background: BS Civil Engineering  
M.Ed. Physics

Priority Research Interest: Physics Education

Major Publications

NOVIDA, FE M.

Contact Detail: fmnovida@mapua.edu.ph

Educational Background: BS Civil Engineering  
M. Ed. Physics

Priority Research Interest: Physics Education

Major Publications

TANAWAN, CHARISH S.

Contact Detail: cstanawan@mapua.edu.ph  
(+632) 247-5000 local 4301

Educational Background: BS Applied Physics  
MS Education Major in Physics

Priority Research Interest: Physics Education

Major Publications
1. C.R. San Juan, The Effects of Human Motion Graph Activity on Student Motion Graph Interpretation Skills, Philippine Physics Journal Volume 27, April 2005.
Mapúa Institute of Technology, on its quest for global visibility and research competence, establishes the Office of International Linkages for Research and Development. Currently, Mapúa has (as of August 2014) forty (40) international linkages in nineteen (19) countries and US States (Figure 1). Activities include but not limited to the following: student and faculty exchange, exchange of lecturers, sandwich program, joint research, sharing of facility and human resources, consultancy, dual degree programs, joint degree programs, co-organizing and co-hosting of conference, workshops and fora.
The universities in Sweden are: (1) KTH Royal Institute of Technology, (2) Lulea University of Technology, (3) Institute of Environmental Medicine, Karolinska Institute, (4) Umea University, and (5) Uppsala University. The other two universities in Czech Republic and Finland are Tomas Bata University and Aalto Pro of Aalto University, respectively.

There are three linkages in these countries which are government agencies and from industry. These are the Swedish Chemicals Agency (KEMI) of Sweden (a government agency), VTT Technical Research Centre of Finland (also a government agency), and 5P for RES of Czech Republic (a private industry).

Mapúa is a member of the Global Universities Partnership on Environment for Sustainability (GUPES) (Figures 4, 8, 9) initiated by the Environmental Education and Training Unit (EETU) of the United Nations Environment Programme (UNEP) in Nairobi, Kenya. GUPES is represented by UNEP-Tongji IESD in Shanghai, China for the regional activities. Another linkage in Africa is the program of pesticide risk management under the Department of Public Health and Family Medicine of the University of Cape Town (UCT), South Africa.

There are five linkages in four mainland states of the United States of America as shown in Figure 5. Activities involved joint research, sharing of knowledge and materials. There is also a linkage from industry based in California, i.e., Environment Strategies International.
Among other Asia–Pacific universities, Taiwan has the highest number of linkages and activities with Mapúa. Three PhDs were produced, two Post Docs, student exchange, visiting professorship, co-organizing of international conference are among the outcomes of collaboration.

Figures 6 and 7 show the linkages in Asia and the Pacific. University of Hawaii-Mauii and University of Guam in Mangilao, Guam are cooperating with Mapúa on the Hotel and Restaurant Management, and engineering program, respectively.
Commitment to Sustainable Practices of Higher Education Institutions on the Occasion of the United Nations Conference on Sustainable Development

20-22 June 2012, Rio de Janeiro

“As Chancellors, Presidents, Rectors, Deans and Leaders of Higher Education Institutions and related organizations, we acknowledge the responsibility that we bear in the international pursuit of sustainable development. On the occasion of the United Nations Conference on Sustainable Development, held in Rio de Janeiro from 20-22 June 2012, we agree to support the following actions:

- Teach sustainable development concepts, ensuring that they form a part of the core curriculum across all disciplines so that future higher education graduates develop skills necessary to enter sustainable development workforces and have an explicit understanding of how to achieve a society that values people, the planet and profits in a manner that respects the finite resource boundaries of the earth. Schools are also encouraged to provide sustainability training to professionals and practitioners;

- Encourage research on sustainable development issues, to improve scientific understanding through exchanges of scientific and technological knowledge, enhancing the development, adaptation, diffusion and transfer of knowledge, including new and innovative technologies;

- Green our campuses by: i) reducing the environmental footprint through energy, water and material resource efficiencies in our buildings and facilities; ii) adopting sustainable procurement practices in our supply chains and catering services; iii) providing sustainable mobility options for students and faculty; iv) adopting effective programmes for waste minimization, recycling and reuse; and v) encouraging more sustainable lifestyles.

- Support sustainability efforts in the communities in which we reside, working with local authorities and civil society to foster more liveable, resource-efficient communities that are socially inclusive and have small environmental footprints.

- Engage with and share results through international frameworks, such as the UN Decade of Education for Sustainable Development, led by UNESCO; the UN University system, the State Academic Impact, the Global Compact and the UN-supported Principles for Responsible Management Education Initiative and the UN Environment Programme’s Environmental Education and Training, in order to exchange knowledge and experiences and to report regularly on progress and challenges.”

Date: 16 April 2012
Organization: Mapúa Institute of Technology
Location: Intramuros, Manila, Philippines
Name & Title of Signatory: Dr. Reynaldo B. Vea - President & CEB

Figure 9. Commitment of Mapúa to Rio + 20
### Total of 17 Linkages in Asia (6 in Taiwan, shown on the ff slide)

<table>
<thead>
<tr>
<th>Linkages</th>
<th>Joint Research</th>
<th>Joint Publication</th>
<th>Faculty Exchange</th>
<th>Student Research Internship</th>
<th>Education &amp; Training</th>
<th>Exchange of Materials</th>
<th>Dual/ Joint Degree Program</th>
<th>Joint Conference, Symposium, Workshop</th>
<th>Joint Cultural Program</th>
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Note: Linkages in Taiwan are shown on the next slide

### 2 Linkages in Africa

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<th>Linkages</th>
<th>Joint Research</th>
<th>Joint Publication</th>
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<th>Student Research Internship</th>
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### 6 Linkages in Taiwan

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Note: Collaboration with NTHU has just started. Collaboration with CHU and CYCU produced PhD and MS graduates

### Other linkages as aid in research and development linkages

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<th>Linkages</th>
<th>Joint Research</th>
<th>Joint Publication</th>
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Note: Collaboration with HERC, Israel, China, and other countries is in the planning stage.
Collaboration of Mapúa with Chia Nan University of Pharmacy and Science, Tainan, Taiwan and the Environmental Education and Training Unit of the United Nations Environment Program, Nairobi, Kenya resulted to the conduct of the 2013 International Conference on Sustainable Environmental Technologies held at Sofitel Philippine Plaza Hotel on 30 September – 01 October, 2013. A couple of photos on the next page shows the registration of Dr. Nuna E. Almanzor, the Director of the Industrial Technology Development Institute of the Philippine Department of Science and Technology (ITDI-DOST). At the back of Dr. N. E. Almanzor are Prof. Ming-Chun Lu and Prof. Meng-Wei Wan (both from Chia Nan University of Pharmacy and Science of Taiwan) who are the Chair and International Board Member of ICSET 2013, respectively.

Also shown on the photo is the Dean of the Department of Mathematics, Dr. Lilibeth Sabino.

A photo of research posters presentation and the Mapúa's eco-cars as exhibits during the ICSET 2013 (below photo).
Above photo was a PhD student then, under the Environmental Engineering Graduate program, (now Dr. Mary Jane Calagui) doing her dissertation work at CNU.

Her research work at CNU resulted to several international scientific publications, one of it won a 'best poster award' and a degree on PhD Environmental Engineering.

Mapúa participated in the specialized training in “health risks assessment” at the Institute of Environmental Medicine, Karolinska Institute, the leading medical university in Europe.

Mapúa has active collaboration with the premier engineering institution (KTH Royal Institute of Technology, Stockholm) in Sweden. Above photos were taken during the meeting at KTH with Skype participation of Mapúa Officers. Currently, Mapúa and KTH are working on possible faculty and students mobility.
Mapúa hosted and co-organized the 2012 Environmental and Occupational Toxicology (ENOTOX) Workshop with the Swedish Chemical Agency (Kemi) funded by the Swedish International Development Cooperation Agency (Sida).

ENOTOX WS was participated by government agencies, academe, industries and non-government organizations in the Philippines. There were also two participants from the University of Guam, Guam.

Mapúa has collaboration with the National Taipei University of Science and Technology (NTUT), Taiwan popularly known as Taipei Tech.

Collaboration of NTUT and Mapúa started after NTUT gave an Honorary Professorial Chair Award to Mapúa’s professor, Dr. Delia B. Senoro (center lower photo). Current activities are visiting professorship (as part of the award) and preparation for joint research activity.
Mapúa’s collaboration with National Taiwan University (NTU) resulted to sending of PhD student from Environmental engineering program (who is also a faculty member of the School of Chemical Engineering and Chemistry), Engr. Elisa Eleazar (up most photo standing at the center). This further resulted to cooperation with the Philippine Geothermal Production Company in MAKBAN shown by lower left photo.

Three Professors (Prof. Pen Chi Chiang, Prof. Hsiao Kang Ma, Prof. Kuo Long Pan) from National Taiwan University together with a Professor from Kaohsiung University of Applied Technology (Prof. Herchang Member Ay) and Professor from Taiwan Military Academy (Prof. Tsung Sheng Sheu) visited Mapúa to further strengthen the collaboration. Four Professor presented their research agenda and the group is interested to work on geothermal energy topic.
Right photo was taken during the renewal of agreement between Mapúa and University of Guam.

Below photo shows the signing of intent between Mapúa and 5P for RES (Dr. Reynaldo B. Vea and Zdenek Chalus) of Czech Republic. Left photo was taken when President Vea was discussing topic on airport management with Dr. David Chalus, son of Dr. Zdenek Chalus.

Partnership of Mapúa with Dr. Gary Wnek of Case Western Reserve University, USA and PhilDev Philippines resulted to a workshop on Technopreneurship.

The workshop was attended by about 110 participants from different departments, i.e., the head of engineering programs, its faculty members and students. The workshop was held on May 13 - 15, 2014 at Mapúa Intramuros campus.
Mapúa participated in the international training program on education for sustainable development in Sweden and China. This program was funded by Sida in conjunction with UNEP and the Institute of ESD - Tonji University in Shanghai, China.

Following activities were couple of fora in Mapúa conducted by Dr. Dahe Jiang (photos on this page)
Mapúa has partnership with the VTT Technical Research Centre of Finland. Outcomes of partnership lead to an international and local linkages; i.e., with the College of Engineering of Nanyang Technological University in Singapore and the local government of Marikina City, Philippines.

Linkage with the Institute of Environmental Medicine (IMM) at Karolinska Institute (KI), Stockholm, Sweden resulted to a linkage with the Danish Hydraulics Institute (DHI) with headquarter in Denmark and a Research Centre in Singapore. Dr. Ann Detmer (3rd from right of middle photo) of DHI Denmark was a co-participant during the IMM KI specialized training on the identification and assessment of reproductive toxicity and endocrine disruption. DHI is a maker of computer softwares used in environmental and water resources modeling.
Aalto organized and managed the international program on ‘sustainable communities: Managing Urban Futures – Workshop for Supporting Sustainability’ in cooperation with EETU-UNEP, UN Habitat and Asian Institute of Technology. This program was funded by the Ministry of Foreign Affairs of Finland. The workshop was held at Dar es Salaam, Tanzania on March 12 - 22, 2013.

Mapúa has been collaborating with the College of Engineering of Chung Yuan Christian University (CYCU), Chung-Li, Taiwan since early 2000. Activities include dual degree program, student exchange, and visiting professorship. Photos shows the Dean of the College of Engineering and Chair of the Department of Civil Engineering together with the Dean of Mapúa’s School of Civil, environmental and Geological Engineering, Dr. Francis Aldrine A. Uy (right most upper photo).

The middle photo shows the among the group of students who participated in the international lecture conducted by Dr. Delia B. Senoro (center of middle photo). Lower photo shows the faculty members of the Department of Bioenvironmental Engineering in CYCU.
Mapúa has forged partnerships with Chung Yuan Christian University (CYCU) in Taiwan. Its aim is to provide quality education and highly relevant professional trainings. Professors and students from both institutions have been collaborating in research projects through graduate and undergraduate programs, student exchange, English summer camp, leadership training and visiting professor program.

The ANERGY linkage produces another linkage with the Korean Wetland Society (middle photo) where Dr. Delia B. Senoro of Mapúa was the Plenary Speaker together with Dr. Spike Millington of East Asian-Australasian Flyway Partnership.

The Asian Network for Environment and Energy (A. NERGY) is housed by Incheon National University, South Korea.
Four US-based experts in cultural heritage preservation held a workshop at Mapúa Institute of Technology to increase awareness among Filipinos about the significance of protecting the country’s historic architecture and sites.

Lower photo shows participants of the workshop composed mostly of Mapúa faculty and students. They formed a group to share their thoughts and discussed about preserving cultural heritage.

Engr. Roel John C. Judilla (lower right photo), former Dean of the School of Mechanical and Manufacturing Engineering and current Director of Institutional Laboratory Management Office (ILMO), participated in the regional training for underwater archaeology in Thailand for about one month in 2013. The training was conducted by the SEAMEO Regional Centre for Archeology and Fine Arts.

The above activity is in connection with the robotic technology development of Mapúa for underwater operation.
Officials of Mapúa signed a memorandum of intent with representatives of the University of Hawai’i Maui College (UHMC) to improve the educational and professional training programs of the two institutions. (First row, L-R) Cyrilla Pascual, Department Chair, UHMC Business Department; Lorelle A.S. Peros, Program Coordinator, UHMC Hospitality Tourism Program; Dr. Debra Nakama, UHMC Articulation Coordinator; and Mapúa president and CEO Dr. Reynaldo B. Vea together with the Institute’s officials and members of the faculty.

Fourteen foreign delegates of the USAID-HELM (United States Agency for International Development - Higher Education Leadership and Management) study tour visited Mapúa on October 10, 2012. The delegates were composed of 10 Indonesian Officials from different universities, two USAID Consultants from University of Kentucky and two HELM Consultants from Indonesia. The objective of the study was to help further improve the quality of higher education system in Indonesia.

Photo on the right are the Lulea University of Technology (LTU) senior students from Industrial Design and Architectural Engineering Program presented a product and architectural designs to be used in the Philippines addressing issues on sustainability.
Mapúa collaborates with South Korean’s Kumoh National Institute of Technology (KIT) on February 2013. Mapúa and KIT committed to collaborate in the areas of research and student development.

A research paper co-authored by Dr. Rhoda B. Leron, a faculty member of Mapúa Institute of Technology’s School of Chemical Engineering and Chemistry, was selected as one of the excellent papers at the 4th International Conference in Chemical Engineering and Applications (CCEA 2013) held in Paris, France, last October 12-13. The research was co-authored by Rhedita Wanda Olivia and Prof. Meng-Hui Li of Chung Yuan Christian University (CYCU) Thermodynamics Research Laboratory in Chungli, Taiwan R.O.C. The title of the paper was “Heat Capacities of Aqueous Ternary Mixtures of 2-Amino-2-methyl-1,3-propanediol (AMPD) + Piperazine (PZ) or Lithium bromide (LiBr).”

The ETY School of Business and Management (ETYBM) of Mapúa gathered delegates from different embassies in the Philippines to discuss various business cultures. This is to prepare the ETYBM graduates for the 2015 ASEAN integration. ASEAN integration envisions a single market and a region fully united into the global economy. Among the participants were: (A) His Excellency Hero de Boer (The Kingdom of Netherlands), (B) Hannah Huglen Revheim (Norway), (C) Dr. M. Suresh (India) and (D) Kentaro Yamane (Japan).
Mapúa through their School of Civil, Environmental and Geological Engineering (SCEGE) and other academic departments co-organized and co-hosted the 2013 Sustainable Building Regional (Asia) Conference-Manila. A paper on eco-friendly evacuation centers for calamity-stricken communities by Edelyn Jane A. Salvame, Renan Ker P. Quebral, and Marion Joy C. Salanguit won first runner-up in the best paper competition. The Mapúa delegates led by Prof. Fibor J. Tan (sixth from left, upper photo) and on his right are Marion Joy C. Salanguit, Edelyn Jane A. Salvame, Renan Ker P. Quebral. Also, in the photo is Dean Gloria B. Teodoro (eighth from right, above photo), of the School of Architecture Industrial Design, and the Built Environment.

On the left photo presenting are thesis adviser Prof. Fibor J. Tan and Edelyn Jane A. Salvame of SCEGE.

Dr. Dante S. Silva of the Department of Mathematics was awarded as the “World Outstanding Research Leader 2014”, on the Asian Conference on Education and Technology (ACET 2014), held at Marriott Hotel in Singapore, August 29, 2014 (Photo on the left).

The title of the paper which Dr. Dante Silva presented was “Effectiveness of a Classroom-Based Experiential learning Adopting Wiley PLUS as learning management System Tool in teaching Differential Equations.”

Dr. Dante S. Silva also received “Best Paper Award of International Conference on Education and Information Technology 2011” in the World Congress on Engineering and Computer Science 2011, San Francisco, USA 19-21 October 2011. The paper is entitled “Transforming Diverse learners through a Brain-Based 4MAT Cycle of Learning.”
Photo below is Dr. Francis Aldrine A. Uy, Dean of School of Civil, Environmental and Geological Engineering (SCEGE), presenting a proposed project named Mobile Millennium Manila (MMM) which will improve mobility in Manila by helping travellers to find the most efficient way to get from their origin to their destination.

Photo at the right is Dr. Francis Aldrine A. Uy with PhilDEV CEO Dr. Diosdado Banatao (an alumnus of the Mapua Institute of Technology) who initiated the Philippine-California Advanced Research Institutes (PCARI) that supports the proposed project Mobile Millennium Manila (MMM).

Photo at the left is Ms. Maria Socorro Romabiles from School of Multimedia Arts at the Academy of Arts University in San Francisco, California for Teacher Grant in Advertising and Copywriting last June to August 2012.

Paul Dominick E. Baniqued, conducted a six-month research at CYCU with a topic of "Biocompatible pH-Sensitive Polysulfone Membrane by Plasma-Induced Surface grafting of PEGylated 2-(dimethylamino) Ethyl Methacrylate for Tumor-Targeted Drug Delivery Applications" for a period of October 26, 2012 to March 31, 2013.
Ms. Sheryl Rose Andes (fifth from left), one of SMVA faculty members who specialize in film participated in the ETHNOCINECA Student Shorts Competition last May 12 – 16, 2014 at Vienna, Austria. Ethnocineca is a film festival with anthropological themes and topics. The said film festival is commenced by the Department of Social and Cultural Anthropology of University of Vienna where young film makers are encouraged to present their films together with other known film makers.
The Commission on Higher Education (CHED), through Dr. Cynthia Bautista (left photo), participated during the Mapúa's faculty congress in 2013.

Dr. Cynthia Bautista, CHED Commissioner, speaks about outcomes-based education which Philippine needs.

Mapúa is providing an environment that is responsive to the global scientific and technological advances. This is to produce engineers, technologists, researchers, scientists who are globally competitive.

Mapúa identified several toxic chemicals present on some parts of Pasig River and Estero de Pandacan.

The activities were conducted together with other universities in Metro Manila and the Philippine Coast Guard. This was funded by the Department of Science (DOST) and Technology.

Mapúa is providing an environment that is responsive to the global scientific and technological advances. This is to produce engineers, technologists, researchers, scientists who are globally competitive.

The results were presented to the community to inform the about the possible effects of the chemicals if there will be air, water and soil contamination within their area. The activity was conducted by the Office of SOCIP.
SMME and SOCIP walk their talks on “Sustainable Development (SD) and Carbon Footprint Reduction (CFR)”

SUSTAINABLE DEVELOPMENT and CARBON FOOTPRINT REDUCTION AWARENESS

SOCIP conducted lectures on ‘sustainable development and carbon footprint reduction’ at NSTP courses. This is part of the awareness quest of the institute on SD and CFR.

The School of Mechanical and Manufacturing Engineering (MME) participated in the 5th Asian Eco-Car Marathon that dared students and faculty to design, build and test energy-efficient vehicles. This is an application of knowledge on engine design and energy efficiency.

Mapúa advocates on sustainable building and environment

Design of the Proposed One-Storey Residential Building for the Franciscan Congregation in San Jose, Nueva Ecija. This was carried out during the period January - March 2013. The design was believed to a sustainable building design. This activity was a contribution of the School of Civil, Environmental and Geological Engineering.

Our Common Future, also known as the Brundtland Report states: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

What is Sustainable Development?

What is carbon footprint?

The total amount of greenhouse gases produced to directly and indirectly support human activities, usually expressed in equivalent tons of carbon dioxide (CO2)
Former Intramuros Administrator, Jose A. Capistrano Jr. (upper photo), and JC delos Reyes (lower photo), President of the Intramuros Tourism Council, visited Mapúa and conducted a forum on solid waste management plan of Intramuros Administration. The forum was facilitated by the Office of Social Orientation and Community Involvement Program (SOCIP) and attended by the stakeholders of Intramuros as well as the Mapúa’s different departments.

Mapúa administration and Mapúa joined on the quest for waste management

Mapúa applies knowledge to society through community extension by providing start-up electricity in remote areas

Micro-hydro power generator

Micro-hydro power generator was used to provide electricity at Tawangan (Benguet). It was also to power the “PICOS” machines during the Philippines’ first automated national elections in 2010.

Wind turbine power generator

Mapúa is installing a wind turbine at Sitio Bayucan (Taytay, Rizal). This will provide renewable source for electricity in the community.
The device acts both as detection system and Braille mobile phone to aid the mobility and communication capability of the visually impaired people. The work of these students won a top prize during the 8th Smart Wireless Engineering Education Program (SWEEP) Innovation and Excellence Awards.

Lower photo shows how the representative from Mapúa demonstrated the application of PC program designed by the computer engineering students to control mouse cursor through hand motions. Using the Microsoft Kinect SDK, mouse cursor can be controlled by hand motions.

The students' project objective was to improve the existing wheelchair designs and mobility of the impaired individual and has the full functionality of the hands. The idea came out in the course of making their thesis work as a requirement for the degree which took them nine months to complete.

The prototype wheelchair can easily be maneuvered through the use of voice. The wheelchair has unique safety measure features, too. It automatically stops when it detects obstacles along its path and no space to move on. The wheelchair can also elevate to a maximum height of eight inches, enough height to climb a street gutter. The voice-activated wheelchair project output of the students is among the results of an “outcomes-based-education” of Mapúa Institute of Technology.
Maria Erika S. Masalonga of the School of Architecture, Industrial Design and the Built Environment won during the 2011 Green Furniture Design competition. The entry to the joint project of the Chamber of Furniture Industries of the Philippines (CFIP) and the Product Development and Design Center of the Philippines (PDDCP) was a “Solace Rocking Chair.” The design of the chair was made of recycled aluminum as a metal frame and seagrass as weaving component. Seagrass is an indigenous grass in the Philippines has been considered renewable and eco-friendly material.

The e-trike (yellow color) was designed by Marciano H. Santos, Jr. This was one of the seven consolation prize winners of the Department of energy's Best E-Trike Design Contest. Lower e-trike was designed by Maria Cielo M. Rogero and Norriele Ace Serrano which placed 3rd in the contest. These were industrial design students from the School of Architecture, Industrial Design and the Built Environment.

The design considered a three-wheeled, seven-seater electric vehicle based on the common mode of transportation in the Philippines. The design adopted the jeepneys’ box-type frame ans stretched the back of the vehicle to accommodate six passengers. It has an open doorway located at the rear side of the vehicle. Another design consideration was ventilation and ease of entry and exit of passengers.

The design focused on the anthropometrics (study of the dimensions of the body) and materials. The curvy and straight body configuration design could accommodate both men and women passengers.

The School of ARIDBE contributes to Sustainable Development

SOIT participated in the competition and won 2nd place in the 1st Philippine Undergraduate Research on eHealth (PUReHealth), a one-and-a-half-year-long research competition on eHealth organized by the National Telehealth Center of the University of the Philippines-Manila. The group’s technical advisers were Dean Nilda S. Eliquen of Mapúa’s School of Information Technology (SOIT), and Professors Ramon L. Rodriguez and Elcid A. Serrano.

The main objective of the project was to consolidate and unify existing blood inventory and management systems of the various blood bank facilities in the Philippines. The concept of the project was to create a centralized inventory system that stores data from all blood bank facilities. Currently, the system varies from different facilities and there is no one agency monitoring all the data. Because of this, the use of donated blood is not maximized,” Prof. Rodriguez elaborated.

The members of the group coordinated with blood bank facilities in Manila, with Philippine Red Cross, National Voluntary Blood Services Program, and the Department of Health (DOH) to gather data.

The School of Information Technology (SOIT) works on the centralized blood bank inventory and data management system in coordination with Philippine Red Cross and DOH
Mapúa's quest for sustainable development and environmental footprint reduction

The Institute CDMO supports the quest for sustainable development and carbon footprint reduction. The objective of CDMO in initiating the project in 2012 was to make Mapúa an environmentally friendly and sustainable campus by reducing carbon footprint and adopting a sustainable approach in school operation, school design and administrative procedures that respects and supports the environment.

The initiative started with the replacement of ordinary lighting fixtures to T5 followed by the installation of inverters to air-conditioned units. Mapúa recorded a 7% decrease in kilowatt-hour per person consumption which resulted to a considerable savings.

Mapúa received an ECOSWITCH AWARD from the Green Philippines Islands of Sustainability (GPIoS) ECOBONUS Programme due to the results of the activities.

Mapúa supports technology application and technology based skills training for the community

Basic electronics and Branch circuit wiring

Hands-on seminar on basic electronics and branch circuit wiring equips the participants on the basics of the fixing household appliances and electrical connections.

PC trouble-shooting

Participants from various communities learns how to perform PC trouble-shooting using Mapúa's facilities.
Hands-on activities in assembling metal fixtures are done through welding using Mapúa's facilities. Participants are from Pandacan (Manila).

Computer fundamentals

Computer applications taught includes MS word, excel and powerpoint. Advance level includes webpage development and Adobe Photoshop.

Recipients include Public school teachers, MMDA personnel, Out-of-School Youths and Brgy. Officials.

Mapúa conducts enhancement programs on education for public school teachers, students, out-of-school youths and scholarship grants

Teacher development program

Teachers from various schools attend seminars conducted by Mapúa. Topics covered includes Computer, Chemistry, Physics and Mathematics.

Student development program

Mapúa visits schools and administers talks about personality development. They also conduct review sessions covering Physics, Chemistry, Mathematics and English to help them pass college entrance test.
Mapúa handles AY Foundation school from Benguet. Minorities of Kankanaey and Kalanguya are the recipients of the scholarship grants.

**Mapúa provides scholarship grants with AY Foundation**

Alternative Learning Program Equivalency and Accreditation Program [ALEAP]

ALEAP gives opportunities to Out-of-School youths to finish their high school using self-placed learning. This program is handled by faculty handling Mathematics and Languages courses.

Mapúa conducts enhancement programs on leadership, governance and crisis management for public officials and law enforcers

**Info drive for Brgy. Officials**

Barangay officials are oriented on Kasambahay law and strategies to handle crisis at the barangay level. Lectures on decision making and planning are also conducted to equip brgy. officials in their brgy. operations.

**PNP self-defense training**

Police officers are among the recipients of the self-defense training program of Mapúa. PNP participants are taught self defense without using firearms.
Mapúa supports environmental conservation and protection

Tree planting in the mountains

Tree planting was done on various parts on the country which includes the mountains of Benguet where pine tree nursery is also established.

Tree planting in Tanay, Rizal

Protection of the environment from further destruction inspired the employees of Mapúa Institute of Technology to participate in the five-year tree planting program of the Yuchengco Group of companies in Tanay, Rizal.

Tree planting along roads

Trees are planted along roadlines in Calaca (Batangas). Grown-up trees provide shade and sight to see to travellers alike.

GK's Intramuros clean-up drive

Mapúa's students and employees helped clean up the historic Intramuros during GK's "5 Kalinga Intramuros."
Relief operations, Medical/Dental missions, Blood letting activities and Donation drives

Relief operations and Medical/Dental missions

Mapúa responds on calamity stricken areas by conducting relief operations. Coordination with various sectors is done which includes AY foundation to better deliver relief activities.

Health services are administered to address community concerns. Free medical check-up, tooth extraction and medicines are given to those who avail the services.

Mapúa's HSD help ‘Sendong' victims

Mapúa’s Health Service Department (HSD) form a team and raise funds to help thousands of tropical storm’ victims.

Blood letting activities

Blood donation drive keeps blood supply available to Mapúa and its communities. Patients can avail blood any time, any day.

Fixtures for public schools and barangay halls

Mapúa help augment some of the needs of the community by donating computers, chairs, tables and books to public schools and barangays.
Conference Participation and Awards

Dr. Dante S. Silva (left photo) presented a plenary paper entitled “Effectiveness of a Classroom-Based Experiential Learning Adopting WileyPLUS as Learning Management System Tool in Teaching Differential Equations” 18 July 2014 at the International Conference on Multidisciplinary research and Graft and Corruption at Limketkai Luxe Hotel, Cagayan de Oro City Philippines.

He has been awarded as Outstanding Asian Research Leader 2014. He also presented a Paper entitled “Toward Improving patterns of Teaching Applications in Differential Equations: Reform and the Curriculum Process” in the 2nd International Conference on Computer Science and Computational Mathematics (ICCSCM 2013) 9th of February 2013 at Kula Lumpur Malaysia, and at the International Conference in Civil Engineering Education (ICCEE 2012) held at De La Salle University – Manila, Philippines.

The title of the paper was entitled “Constructive Alignment: Influencing Mathematics Teaching and Learning Activities at Mapúa Institute of Technology, Manila Philippines” on November 9-10, 2012. Together with Dr. Silva was Dr. Lilibeth Sabino, Dean of the Department of Mathematics.


Dr. Robert M. Dadigan (left photo) presented a paper “On Projected Geometry” on the Mathematical Society of the Philippines Cebu Chapter Annual Convention.

Dr. Richard T. Earnhart (left photo) presented a paper entitled “Tutte of Polynormials of Rational tangles” during the First Annual convention of MSP – NCR Cebu Chapter (photo on the left).
Hardy D. Sierra presented a paper “Technology Integration in Mathematics Teaching: Mapúa Experience” in First MSP Cebu Annual Convention at DepEd ECOTECH Center, Sudlon, Lahug, Cebu City on December 7-8, 2012 and in University of the Philippines – Visayas, Iloilo City on August 16-17, 2012 (upper photo).

Dionisia M. Lanuza presented a paper “Assessment for Learning Approach in a Unique Cooperative Culture Platform” First MSP Cebu Annual Convention at DepEd ECOTECH Center, Sudlon, Lahug, Cebu City on December 7-8, 2012 and in University of the Philippines – Visayas, Iloilo City on August 16-17, 2012 (lower photo).