

Accomplishment Report: Research Portfolio for Key Proponents at Carig Campus

This report presents the consolidated portfolio of research and development projects undertaken by a select group of fourteen key proponents at the Carig Campus, based on accomplishment reports from 2023, 2024, and 2025 (Q2). The work highlights a strong focus on nationally relevant, technology-driven initiatives across several key thematic areas.

Key Accomplishments by Thematic Area

Electromobility and Sustainable Transportation

This area focuses on the design, fabrication, and commercialization of electric vehicles to advance sustainable transportation in the Philippines. Key projects include:

- Design, Development and Fabrication of Ergonomic and Lightweight e -Trike Chassis and Suspension
- Conversion of Conventional Passenger Bus to Electric Public Utility Bus (ePUB)
- FASTRAC LITE: Development and Validation of the Improved and Cost-Effective Electric Conversion Kits for e -Trike
- Design and Development of Standardized Battery Swapping Light Fleet Electric Vehicles
- Design, Development and Fabrication of 3+1 Seater eTrike
- Design, Development, and Fabrication of Buggy (A Locally designed Minifour – Wheeled Electric Vehicle)

Disaster Resilience and Civil Infrastructure

Research in this area is dedicated to developing solutions for disaster resilience and improving civil infrastructure, responding to the region's vulnerabilities. Key projects include:

- Assessment, Development, and Preservation for Typhoon and Earthquake Resilient Ivatan Houses
- Integrated Assessment and Analysis of Hydraulic Assets for Sustainable and Resilient Flood Control Infrastructure
- Design and Development of Load Bearing Interlocking Masonry Walls for Disaster Resilient Housing
- Design and Development of Precast Walls for Disaster Resilient Housing
- Effect and Sustainability of Calcined Iguig Clay Powder and Incinerated Non -Hazardous Biomedical Wastes Ash

Food Security and Agricultural Modernization

This research connects engineering expertise with the agricultural sector to improve food security and modernize processes. Key projects include:

- Structural Strength of a Smart Engineered Greenhouse Across Varying Wind Loads in the Islands of Batanes
- Performance Evaluation of Postharvest Machineries, Equipment, and Facilities of all Programs of DA-FR02
- Innovative Processing: Enhancing Technology for Sustainable Coffee Quality (Development of Coffee Depulper)
- Design and Evaluation of Pellet Mill for Animal Feed Production
- Performance Evaluation of Different Substrates in Strawberries and Lettuce under Hydroponic System
- Sustainable use of squash to attain improved nutrient of e-nutribution (SUSTAIN E-Nutribun)

Environmental Science and Management

This area includes large-scale environmental assessment and data collection. The primary project is:

- Inventory and Profiling for Foreshore Areas in Region 02

Information Technology and Socio - Economics

These projects focus on developing IT systems for public service and analyzing socio - economic factors. Key projects include:

- E-Profiling System for the Town of Gonzaga and Selected Barangays
- Web-based Record Management System for the Forensic Unit of PNP R02
- Smart Portable N-P-K Analyzer
- Banca Tracker and Emergency Alert System
- Impact Assessment of the Extension Program of the CSU - Carig Campus
- Assessment of Road Infrastructure Facilities, Public Transport Barriers and Challenges for Persons with Disabilities

Education and Institutional Studies

These projects focus on evaluating and improving educational programs and institutional effectiveness. Key projects include:

- Graduate Tracer Study of CSU - Carig Campus (2016-2022)
- Analysis of Licensure Examination Performance of the Cagayan State University Engineering Programs: Basis for Intervention
- Study 2: Bridging the Gap Between Hard and Soft Skills in Engineering Education
- Evaluation of Engineering Programs Effectiveness and Alignment... Project 1: Evaluation of Program Outcomes

Consolidated Portfolio of Research Projects

The following table provides a comprehensive list of all projects undertaken by the specified proponents.

Table 1: Consolidated Portfolio of Research Projects for Specified Proponents

Project Title	Full Proponent List	Thematic Area	Sponsoring Agency	Status
Design, Development and Fabrication of Ergonomic and Lightweight e - Trike Chassis and Suspension	Arthur G. Ibañez, Buencamino Martin, Mark Anthony Ibañez, Marc Angelo Cabaddu, JC Ancheta, Audy Quebral	Engineering	DOST-PCIEERD	Completed
Assessment, Development, and Preservation for Typhoon and Earthquake Resilient Ivatan Houses	Arthur G. Ibañez, Florentina Dumlao, Anderson Gonzales, Edmund Dela Cruz, Ralph S. Reyes, Audy Quebral	Engineering / Architecture	DOST-PCIEERD	On-going
Inventory and Profiling for Foreshore Areas in Region 02	Arthur G. Ibanez, Emer T. Quezon, Dennis M. Bacuyag, Roger P. Rumpon, Rex	Environmental Science	DENR	Newly Approved

	Lee Dullit, Audy Quebral, Grace Angelito, Rodel Francisco Alegado, Charmie Calvo, Froilan Pacris, Policarpio L. Mabborang, Jr., Raplh Angelo Estiller, Joel P. Binasoy, Dennis Bacuyag, Djovi Durante			
Conversion of Conventional Passenger Bus to Electric Public Utility Bus (ePUB)	Michael Orpilla, Mark Anthony Ibanez, Audy Quebral, Denn Agatep, Roger Rumpon, Bryan Lacambra	Engineering	DOST- PCIEERD	On-going
Integrated Assessment and Analysis of Hydraulic Assets for Sustainable and Resilient Flood Control Infrastructure	Policarpio L. Mabborang, Jr.	Engineering	DOST- PCIEERD	On-going
FASTRAC LITE:	Michael	Engineering	DOST-GIA	On-going

Development and Validation of the Improved and Cost-Effective Electric Conversion Kits for e-Trike	Orpilla, Arthur Ibanez, Bernard Bisuecos, Roger Rumpon, Ian Pagulayan	and Industrial Tech		
Structural Strength of a Smart Engineered Greenhouse Across Varying Wind Loads in the Islands of Batanes	Arthur G. Ibañez, Roger Rumpon, James Cabildo, Roldan Ace Tabangay	Engineering / Agriculture	DOST-GIA	On-going
Design and Development of Standardized Battery Swapping Light Fleet Electric Vehicles	Mark Anthony Ibanez, Gilbert Calubaquib, Arthur Ibanez, Rio Averil Pamittan, Christopher Capili	Engineering / IT	DOST-PCIEERD	On-going
IMPACT: Innovation and Market Prototyping for Advancing Commercialization and Technology	Arthur Ibanez, Denis Policar	Innovation / Commercialization	DOST-R02	On-going
Commercialization of Ready	Arthur G. Ibanez, Denis	Food / Entrepreneurs	DOST R02	On-going

Entrepreneurial (CORE) Product Prototypes at DOST-CSU FIC	Policar, Claudette Patulay, Aiza Duldulao, Mary Anne Arugay, Jaymark Pinto, Joan Ivy Garcia	hip		
Sustainable use of squash to attain improved nutrient of e-nutribution (SUSTAIN E-Nutribun)	Arthur G. Ibañez, Denis Policar, Nora Garcia, Steevengel Lagundi, Asela Dayaca, Mary Anne Arugay	Food	DOST RO2 (GIA Fund)	On-going
Fabrication of the HITS Equipment Water Retort, Vacuum Fryer, and Cabinet Dryer	Roger Rumpon	Engineering	DOST-GIA	On-going
E-trike Installation and Stability Research	Policarpio L. Mabborang, Jr.	Engineering	DOST-GIA	On-going
Performance Evaluation of Postharvest Machineries, Equipment, and Facilities of all Programs of DA-FR02	James Cabildo, Roger P. Rumpon	Agriculture / Engineering	DA-R02	On-going
Documentatio	Policarpio L.	Basic Science	CHED Salikha	On-going

n of Built Heritage at Risk in Cagayan Valley	Mabborang, Jr., Arthur G. Ibanez, Lerma Egipto, Rosemarie Cabana, Kristinne Joyce Lara, Jan Justine Rodriguez		Fund-NCCA	
Design and Development of Load Bearing Interlocking Masonry Walls for Disaster Resilient Housing	John Michael Casibang, Mario Alariao, Edmund De la Cruz, Anderson Gonzales, Cyrus Kelly Macabangon, Oliver Doctolero, Raplh Angelo Estiller, Arthur G. Ibañez	Engineering	Fund 10 1	On-going
Design and Development of Precast Walls for Disaster Resilient Housing	John Herman Padulip, Joseph R. Cabalbag, Michael Orpilla, Jowell John Talosig, Leomar D. Juliano, Ralph Reyes, Therese Zipagan, Joyce Banatao	Engineering	Fund 10 1	On-going

Innovative Processing: Enhancing Technology for Sustainable Coffee Quality (Development of Coffee Depulper)	Roger Rumpon, James Cabildo, Jennyfer Rabanera, Roldan Ace Tabangay, Bernanrd Bisuecos, Christopher Capili, Buencamino Martin, Emer T. Quezon, Kevin Deniega, Elaine Ann Garcia, Marc Angelo Cabaddu	Engineering / Food Technology	GAA	On-going
Design, Development and Fabrication of 3+1 Seater eTrike	Bryan Lacambra, Emer Quezon, Roger Rumpon, Michael Orpilla, Cierrie Joy C. Manaois, Florentino Dumlao, Lemuel Purisma, Allan Michael Mamuad, Juluis Rojo, Florie fel M. Larioque, Kristelle A.	Engineering	Fund 164	On-going

	Cabaddu, Lovely S. Valle, Sigrid Oloraza, Judy Ann U. Guzman			
Design, Development, and Fabrication of Buggy (A Locally designed Minifour– Wheeled Electric Vehicle)	Arthur G. Ibañez (SL), Audy Quebral, Bryan Lacambra	Engineering	Fund 10 1	On-going
Graduate Tracer Study of CSU- Carig Campus (20 16-20 22)	Jennifer Ibanez, John Michael Casibang, Jowell John Talosig, Frances Lorane Calapini, Angelica Coballes, Leomar D. Juliano, Raplh Angelo Estiller, Joseph R. Cabalbag, Arthur Ibanez	Basic Science	Fund 164	On-going
Analysis of Licensure Examination Performance	John Michael Casibang, Ruth N. Maguddayao,	Education / Engineering	GAA	On-going

of the Cagayan State University Engineering Programs: Basis for Intervention	Roger P. Rumpon, Jennifer Rabanera, James Cabildo, Arthur G. Ibañez, Emer T. Quezon, Jowell John Talosig, Leomar D. Juliano, Frances Lorane Calapini, Louise Victoria Beltran, Angelica Coballes			
Design and Evaluation of Pellet Mill for Animal Feed Production	Kevin Deniega, Jennyfer Rabanera, Elaine Ann Garcia, Roger Rumpon	Engineering / Agriculture	GAA	On-going
Impact Assessment of the Extension Program of the CSU-Carig Campus	Dennis Bacuyag, Joel Binasoy, Rio Averil Pamittan, Juliet Pelovello, Christopher Capii, Rapih Angelo Estiller, Jomel Manuel, Jezreel	Socio- Economics	GAA	On-going

	Pattaguan, Generino Siddayao, Rovina Guiyab			
Performance Evaluation of Different Substrates in Strawberries and Lettuce under Hydroponic System	Elaine Anne Garcia Roldan Ace Tabangay, James Cabildo, Audy Quebral, Roger Rumpon	Agriculture / Engineering	GAA	On-going
Assessment of Road Infrastructure Facilities, Public Transport Barriers and Challenges for Persons with Disabilities	Emer T. Quezon, Arthur Ibañez, Frances Lorane Calapini, Raplh Angelo Estiller, John Michael Casibang, Jowell John Talosig, Angelica Coballes, Leomar D. Juliano	Socio- Economics / Engineering	GAA	Completed
Effect and Sustainability of Calcined Iguig Clay Powder and Incinerated Non- Hazardous Biomedical	Emer T. Quezon, Arthur Ibañez, Joseph R. Cabalbag, Frances Lorane Calapini, Raplh Angelo Estiller,	Engineering	GAA	On-going

Wastes Ash	John Michael Casibang			
E-Profiling System for the Town of Gonzaga and Selected Barangays	James Cabildo, John Michael Casibang, Jowell John Talosig, Emer T. Quezon	IT / Socio-economics	Fund 164 / Fund 10 1	On-going
Web-based Record Management System for the Forensic Unit of PNP R0 2	Bernard Bisuecos, John Michael Casibang, Emer T. Quezon	IT / Law Enforcement	Fund 164 / Fund 10 1	On-going
Smart Portable N-P-K Analyzer	Bernard Bisuecos, John Michael Casibang, Jowell John Talosig, Emer T. Quezon	Engineering / Agriculture	Fund 164 / Fund 10 1	On-going
Banca Tracker and Emergency Alert System	Christopher Capili, John Michael Casibang, Emer T. Quezon	Engineering / IT	Fund 164 / Fund 10 1	On-going
Performance Evaluation of Selected Unsignalized Intersections in Tuguegarao City	Raplh Angelo Estiller, Emer T. Quezon, Arthur Ibañez	Engineering	GAA	On-going

Correlates of Students' Beliefs on Environmental Protection	Anderson Gonzales, Cyrus Kelly Macabangon, Dexter Dumayag	Basic Science	Fund 164	Completed
Assessment of the intended engineering graduate attributes of civil engineering graduates' batch 2017	Cyrus Kelly A. Macabangon	Education	Fund 164	On-going
Model Development and Analysis of Essential Factors Affecting Road Construction Labor Productivity	Emer Quezon, Arthur Ibañez, John Michael Casibang	Engineering / Socio-economics	Fund 164	Newly Approved
Study 2: Bridging the Gap Between Hard and Soft Skills in Engineering Education	Oliver Doctolero, Leomar D. Juliano, Louise Victoria Beltran, John Michael Casibang	Education / Engineering	Fund 164	Newly Approved
Evaluation of Engineering Programs Effectiveness	Melody Paned, Joseph R. Cabalbag, Jowell Talosig	Education / Engineering	Fund 164	Newly Approved

and Alignment... Project 1: Evaluation of Program Outcomes				
Impacts of Extreme Flooding Event on the Volume-to- Capacity Ratio of Major Road Networks	Raplh Angelo Estiller, Emer Quezon, John Michael Casibang	Engineering / Environmental Science	Fund 164	Newly Approved