

FEATURE

Lea Angsinco-Jimenez, Ph.D.: A Pioneer in Marine Science—Legacy and Impact

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ABSTRACT

Dr. Lea Angsinco-Jimenez, a distinguished Filipino marine scientist, educator, and research administrator whose career spans more than four decades of service to marine science, coastal resource management, and higher education in the Philippines. She currently serves as Professor VI and Vice President for Research, Innovation, and Extension at Davao Oriental State University, where she has significantly contributed to advancing marine and coastal studies in the Davao Region. Her early exposure to the coastal ecosystems of Mati, Davao Oriental fostered a deep and enduring commitment to marine conservation. Dr. Jimenez began her professional career in aquaculture and fisheries research, working with the Southern Philippines Development Authority and the Mindanao State University–Institute of Fisheries Research and Development. These experiences strengthened her expertise in marine ecology, coral reef assessment, and field-based research. She later transitioned to academia, where she advanced through the ranks while pursuing higher education, earning a Master of Science in Marine Ecology from Vrije Universiteit Brussel and a Ph.D. in Higher Education. Her research covers coastal ecosystem management, mangrove rehabilitation, marine pollution, artificial reef development, and biodiversity conservation. She has led and collaborated on numerous projects funded by national and international agencies. As a research leader, she strengthened institutional programs and fostered partnerships with global organizations. A co-inventor of the patented Speedy Sea Scanner, she exemplifies innovation in marine monitoring. Widely recognized for her mentorship and community engagement, Dr. Jimenez’s legacy is defined by her contributions to science, institutional development, and environmental sustainability. Continuing influence beyond formal roles.

Keywords: Coastal resource management, dedication, institutional contribution, legacy, service

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Dr. Lea Angsinco-Jimenez is a distinguished Filipino marine scientist, educator, and research administrator whose career spans more than four decades of dedicated service to marine science, coastal resource management, and higher education in the Philippines. She is currently serving as Professor VI at Davao Oriental State University (DORSU) in Mati City, Davao Oriental.

She serves as Vice President for Research, Innovation, and Extension (RIE). Her extensive contributions to research, institutional development, and environmental conservation have positioned her as one of the key figures in advancing marine coastal studies in Davao Oriental.



Figure 1. Dr. Jimenez working in her office (A), and the new University Marine Science Research Laboratory she helped to build (B).

Born on April 14, 1961, in San Fernando, Pampanga, Dr. Jimenez grew up in the coastal environment of Mati, Davao Oriental, where her early exposure to various marine ecosystems strongly influenced her academic and professional pursuits. Her childhood experiences along the shores of Pujada, Mayo, Balete Bays and nearby coastal areas cultivated a deep appreciation for marine life, an influence she recalls with clarity: *“the coastal area was my playground, I simply loved the coastal waters.”* This early connection to the sea would later define the direction of her life's work.

Dr. Jimenez began her academic journey at Mati Central Elementary School and Stella Maris Academy of Davao City. She initially pursued a Bachelor of Science in Chemistry at Ateneo de Davao University. However, she later shifted to Marine Biology at Xavier University–Ateneo de Cagayan de Oro, where she completed her undergraduate studies. Reflecting on this transition, she shared, *“I love the coastal waters very much, and I struggled with chemistry for two years as it was not my first choice. When I found out that Xavier University in Cagayan de Oro offered Marine Biology, I shifted and transferred. Inspired by SCUBA diving documentaries, I took a SCUBA diving course and pursued Marine Biology.”* Her decision to specialize in Marine Biology was shaped by her early fascination with marine environments and her aspiration to engage in field-based scientific work, particularly in marine ecosystems. She describes herself as inquisitive and adventurous in her exploration of marine ecosystems.

Dr. Jimenez began her professional career as a hatchery technician at the first tiger prawn hatchery in Misamis Oriental, operated by the Southern Philippines Development Authority (SPDA hatchery). After a year, she was hired as a Fisheries Technologist at the Mindanao State University Institute of Fisheries Research and Development (MSU-IFRD) in Naawan, Misamis Oriental, where she gained valuable research experience in aquaculture and field-based fisheries and coral reef assessments. Recalling her time at MSU-IFRD, Naawan, she shared, *“I had a great working experience with research scientists and oceanographers. Although I was ranked as a Fisheries Technologist, my very supportive Director of the Marine Fisheries Office, Dr Nathaniel Mendoza, challenged me to submit a research proposal, which the funding agency also approved. Dr. Mendoza, my mentor, gave me a break to handle my first approved proposal for the PCAAARD project on Mantis Shrimp. Though I only have a rank of Fish technologist, he made an internal arrangement that allowed me to lead my own project, giving me a valuable opportunity to excel. I was able to complete the project and had the opportunity to present my project at an international conference.”*

This early exposure to applied marine science and research significantly shaped her technical expertise and research orientation. From these humble beginnings, she recalls her experience in coral assessments as patient and observant: *“My undergraduate thesis was more on the population structure of crown of thorns, the one that was really affecting the status of coral reefs in Medina, Misamis Oriental”.* She had developed her marine research interests through her 5-year research project experience with other marine scientists at MSU-IFRD and other research institutes, where she enjoyed collaborating with the Marine Science Institute (MSI) at the University of the Philippines and Silliman University.

After her work at MSU-IFRD, she returned to Davao City and explored other private companies operating prawn hatcheries in Davao del Sur for three years. Then she finally settled back home in Mati and joined academia at the then Davao Oriental State College of Science and Technology (DOSCST) and now the Davao Oriental State University. To further advance her academic qualifications, she enrolled at the University of Southeastern Philippines (USEP) and earned some units in the Master of Arts

in Science Education (Biological Sciences). Her commitment to excellence led her to pursue international studies through the A.B.O.S. Bilateral Belgian Government Scholarship, under which she obtained a Master of Science in Fundamentals and Applied Marine Ecology (Magna Cum Laude) from Vrije Universiteit Brussel, Belgium. She later completed her Doctor of Philosophy in Higher Education (Major in Biology) at Davao del Norte State College (DNSC). Her graduate research reflects her deep understanding of marine ecology: her master's thesis focused on the community structure of macrobenthic infauna of mangroves at Guang-guang and nearby shores of Pujada Bay. At the same time, her doctoral dissertation explored the use of *Dolabella auricularia* egg strings as biomonitors of marine pollution along the coastal waters of Davao Region.

Things changed in 1997 after her graduate studies, where she steadily advanced through the academic ranks, from Instructor to Assistant Professor, Associate Professor, and eventually Professor VI. Throughout her academic career, she taught courses in Biology and Environmental Science, mentoring students and guiding undergraduate and graduate theses in marine and environmental studies. For her, the true impact of her work is reflected in her students' success: *“My proudest moment is seeing my students doing research that IMPACTS the community.”*

Beyond her teaching responsibilities, Dr. Jimenez has played a central role in research leadership and institutional development. She served as Director for Research and Extension from 1999-2006, during which she strengthened the university's research programs and expanded its engagement with local communities. From 2007 to 2025, she served as Regional Director of the Regional Integrated Coastal Resource Management Center (RIC-XI), where she was instrumental in establishing the centre as a hub for coastal research, policy support, and capacity-building in Mindanao. Her leadership in RIC- XI contributed to the development of coastal resource management initiatives and fostered collaboration among government agencies, academic institutions, and international partners. Two of these include the Mama Earth Foundation and rreefs[®]. *“during the time of the universityhood, I recognized the need for international linkages to strengthen our university's research, innovation and extension. I was already involved in a mangrove rehabilitation and enhancement project with the Mama Earth Foundation, headed by Mr Ulrich Kronberg, who introduced Ms Hanna Kuhfuss, co-founder of the rreefs[®], Inc. (Rethinking, Rebuilding, and Regenerating coral reefs), another international NGO, to collaborate with DOrSU. The rreefs[®] initiatives to the university have been a significant contributor to its development. In my own small way, I am grateful to have contributed as a bridge in supporting the institution's growth into a university.”* These collaborations have not only enhanced her research output but also strengthened DOrSU's international profile.

Dr. Jimenez has been actively involved in numerous research projects, serving in capacities including project leader, study leader, consultant, and project staff. Her research covers a wide range of topics, including coastal ecosystem management, plastic pollution, mangrove rehabilitation, artificial reef establishment, and ridge-to-reef environmental modelling.

Her work is characterized by strong international collaboration. She has engaged with research institutions and universities in Belgium, Switzerland, Japan, and other countries, contributing to global scientific exchanges and joint research initiatives. She has participated in biodiversity programs, seagrass and mangrove research, and marine habitat mapping projects, often working alongside leading scientists in the field.

Among her recent and collaborative projects are the establishment of the 3D-Artificial Claybricks Reefs (3D-ACR) with an international NGO, the rreefs[®]; an initiative on sustainable oyster farming, marine plastic pollution monitoring, and

ecosystem-based management of coastal resources in Pujada Bay and surrounding areas. These projects, funded by agencies such as DOST-PCAARRD, CHED, BFAR, DENR and other international organizations, highlight her interdisciplinary and applied approach to marine science. In addition to her research and academic contributions, Dr. Jimenez is recognized for her innovation. She is a co-inventor of the Speedy Sea Scanner, a submarine observation system with an image processing program designed for efficient seafloor monitoring. This invention was granted a patent in Japan (Patent No. 6855651) in 2021 (Mizuno et al., 2017), demonstrating her commitment to developing practical tools for marine research and environmental monitoring.

Her scholarly work has been published in reputable journals and platforms, including Elsevier, Springer, Ecological Informatics, Science of the Total Environment, and the Davao Research Journal (Abreo et al., 2018; Macusi et al., 2019). Her publications address topics such as shoreline change analysis, interactions between marine megafauna and plastic pollution, and innovative methods for seafloor habitat mapping. She has also contributed to knowledge dissemination through books and research outputs that highlight the ecological significance of coastal and marine environments.

Dr. Jimenez's contributions have been recognized through various awards and honors, including being named a Hall of Fame awardee as a DOrSU Presidential Awardee, receiving the Outstanding Agricultural Scientist Award, and receiving

commendations from the Bureau of Fisheries and Aquatic Resources. She has also received international fellowships, such as the Japan-East Asia Network of Exchange for Students and Youth (JENESYS) program in Japan, further reflecting her engagement in global scientific communities.

She maintains active membership in several professional organizations, including the Environmental Sustainability Rotary Action Group (ESRAG), National Shellfisheries Association (NSA), National Research Council of the Philippines (NRCP), Society of Marine Mammals (SMM), Professional Association of Diving Instructions (PADI), Asian Fisheries Society (AFS), Philippine Association of Marine Sciences (PAMS), National Network on Women in Fisheries in the Philippines, Inc. (NNWFP); Federation of Institutions for Marine and Freshwater Sciences (FIMFS), Philippine Association of Graduate Education (PAGE). These affiliations underscore her continued involvement in advancing marine science and environmental sustainability.

Beyond her professional achievements, Dr. Jimenez is widely respected for her mentorship and community engagement. She has guided generations of students and young researchers. Many of whom have pursued careers in marine science and environmental management. Known affectionately in coastal communities as “Mama Dugong” and as “Mama Turtle” because she is recognized for her advocacy for marine wildlife conservation and her deep connections with the communities she serves. Her approach to work and collaboration is guided by integrity and respect: “*True success*



Figure 2. Observing hatched pawikan (sea turtles) at Dahican Beach, highlighting coastal conservation efforts (A), example of 3D-claybricks used for reef restoration projects (B), mangrove tree planting activity conducted with BSES Green Pulse students (C), diving activity in Pujada Bay (D).

is achieved without stepping on others, and grows when we lift one another with grace,” she noted.

As she approaches retirement, Dr. Jimenez remains committed to continuing her work in research, environmental conservation, and institutional development. While she looks forward to new opportunities for engagement, she also acknowledges the emotional weight of transition: “I am excited for what lies ahead, yet a quiet sorrow lingers for all that I leave behind.” She envisions sustained engagement through advisory roles, international collaborations, and potential designation as Professor Emeritus. Her legacy lies not only in her scientific contributions but also in the institutions she helped build, the networks she established, and the people she mentored. Ultimately, her legacy is grounded in a philosophy that continues to inspire those who follow her path: “Love your work, and it will love you back—turning every effort into joy, and every limit into possibility.” This belief captures the essence of her life’s journey, one defined not only by achievement but by passion, purpose, and enduring commitment.

AI Disclosure

The authors declare that no Artificial Intelligence (AI) or AI-assisted technologies were used in the preparation of this manuscript.

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