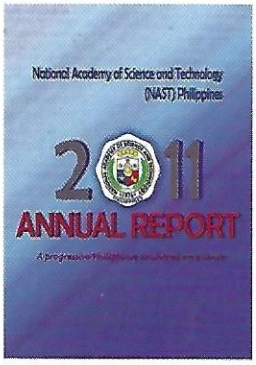
National Academy of Science and Technology (NAST) Philippines

2011 ANNUAL REPORT

A progressive Philippines anchored on science



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ISSN 0119-4267
National Academy of Science and Technology, Philippines
Annual Report 2011

Published by the
National Academy of Science and Technology, Philippines
3rd Level, Science Heritage Building
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A progressive Philippines anchored on science

PRESIDENT'S MESSAGE

On behalf of the National Academy of Science and Technology, Philippines (NAST PHL), I humbly present our accomplishments and challenges for 2011 through this Annual Report. Two eminent members of the Academy were conferred the National Scientist Rank and Title; Academician Raul V. Fabella, (Economics) and Academician Bienvenido F. Nebres, S.J. (Mathematics). Also, three (3) distinguished scientists were elected to the Academy: Dr. Ernesto J. Del Rosario (Physical Chemistry), Dr. Aura C. Matias (Industrial Engineering), and Dr. Agnes C. Rola (Agricultural Economics). Dr. Eduardo R. Mendoza (Mathematics) was elected Corresponding Member. Further, the Academy continues to give recognition to young scientists, outstanding scientific papers, and outstanding book/monograph.

The Academy conducted roundtable discussions and scientific fora which encourage stakeholders' active participation in discussing timely and relevant S&T issues and concerns like water management, climate change, energy, agricultural productivity, food security, biotechnology and biosafety, to name a few. The Annual Scientific Meeting, steered by the Agricultural Sciences Division, focused on theme "Meeting the Challenges of Agricultural Productivity, Competitiveness and Sustainability."

The succeeding pages of this annual report document the details of the Academy's activities and accomplishments.

ACADEMICIAN EMIL Q. JAVIER, Ph.D
President

EXECUTIVE SUMMARY

The National Academy of Science and Technology, Philippines, in pursuance of its vision of "a progressive Philippines anchored on science," humbly presents this Annual Report for CY 2011.

The Academy continues its primary mandate of giving awards to Filipino scientists and scientific and technological endeavors aimed at advancing the state of Philippine science and technology. For 2011, two eminent scientists of the Academy were conferred with the Order of National Scientist; they are Academician Raul V. Fabella (Economics) and Academician Bienvenido F. Nebres, SJ (Mathematics). In addition, three (3) new Academicians were elected to the Academy. These were: Dr. Ernesto J. del Rosario (Physical Chemistry), Dr. Aura C. Matias (Industrial Engineering), and Dr. Agnes C. Rola (Agricultural Economics). Dr. Eduardo R. Mendoza (Mathematics) was invested as the new Corresponding Member.

Exemplary young scientists and researchers were also recognized for their significant contributions to the Philippine science and technology through the Outstanding Young Scientist Awards, TWAS Award for Young Scientists in the Philippines, NAST Talent Search for Young Scientist. As the highest award giving body in science and technology, the Academy was tasked to handle the annual NSTW Award of the Department of Science and Technology (DOST). Two awards were given this year, the Outstanding Research and Development Award for Applied Research (Julian A. Banzon Medal) and the Outstanding Science Administrator Award (Dioscoro L. Umali Medal).

On the other hand, the whole science community mourned the demise of the country's distinguished pediatrician, National Scientist Fe del Mundo.

Through its advisory function, the Academy was able to intensify public awareness, understanding and appreciation of the role of science and technology in national development. Recommendations and resolutions emanating from roundtable discussions, scientific fora and conferences on various relevant and timely topics like agriculture, biotechnology and biosafety, genetic engineering, energy, climate change, among others, were forwarded to concerned agencies.

The theme "Meeting the Challenges of Agricultural Productivity, Competitiveness and Sustainability" of the 33rd Annual Scientific Meeting focused and built upon the Philippine Agriculture 2020, which is a strategic plan developed out of a series of consultations and workshops convened by the NAST among the various stakeholders of the agriculture and fisheries sector.

Under the Scientific Linkages, Academy members attended and participated in international and local fora. They also actively participated as board members of some international organizations.

The Philippine Science Heritage Center was able to get its much needed support from the DOST through the GIA-funded project "Improvement of Exhibits and Facilities of the PSHC and Its Services: Phase 2 Strengthening the PSHC as an Alternative Learning institution for Science."

These achievements and accomplishments of the Academy and its individual members would not be possible without the unwavering support and enduring trust of the whole scientific community. We are pleased to present these accomplishments as part of our commitment in making our country a better place through science and technology.

RECOGNITION FUNCTION

The NAST PHL recognizes and provides incentives to Filipino scientists and researchers for outstanding achievements in scientific research and development.

NATIONAL SCIENTIST. The Order of National Scientist is the highest honor given to a Filipino scientist. Nominees should receive 60 percent of the votes of the full membership of the NAST before being recommended for conferment to the President of the Republic of the Philippines.

ACADEMICIAN. Election to the Academy is by peer recognition. Resident Filipino scientists elected as Academicians shall have demonstrated and earned distinction in independent research and significant innovative achievements in basic and/or applied sciences as manifested by their published works in recognized scientific and technical journal.

CORRESPONDING MEMBER. Corresponding membership is conferred on non-resident Filipino scientists who have made exemplary contributions to the advancement of science and technology. Aside from possessing the same qualification as the Academicians, Corresponding Members have continuing connections and contributions to Philippine science. They should regularly come to the Philippines to practice their fields of expertise. Filipino citizenship and residency requirements are waived as long as the first three qualifications are met.

HONORARY MEMBER. To recognize exceptional outstanding contributions to science and technology, the Academy established the Honorary Membership which may be conferred on recipients of internationally recognized prestigious scientific awards such as the Nobel Prize, the Food Prize and the like, who come to the Philippines to deliver a lecture for the Academy.

National Academy of Science and Technology AWARDS.

The following are the major recognition awards undertaken by the NAST:

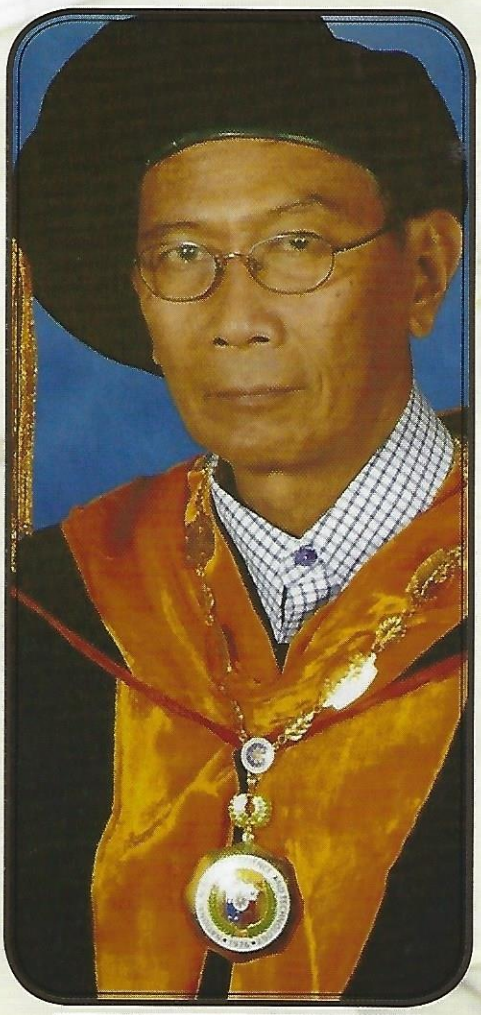
- Outstanding Young Scientist (OYS) Award
- Third World Academy of Sciences (TWAS) Prize for Young Scientists in the Philippines
- NAST-Hugh Greenwood Environmental Science Award
- NAST Talent Search for Young Scientists
- Outstanding Scientific Paper Award
- Outstanding Book/ Monograph Award

National Science and Technology Week AWARDS.

- Outstanding Science Administrator Award (Dioscoro L. Umali Medal)
- Outstanding Research and Development Award (Eduardo A. Quisumbing Medal for basic research and Julian A. Banzon Medal for applied research)
- Outstanding Technology Commercialization Award (Gregorio Y. Zara Medal)

Raul V. Fabella

NATIONAL SCIENTIST for ECONOMICS



On 27 July 2011, His Excellency Benigno S. Aquino III conferred the Order of National Scientist to Dr. Raul V. Fabella during the Opening Ceremonies of the National Science and Technology Week at the SMX Convention Center, Pasay City.

Dr. Fabella is recognized for his outstanding accomplishments and remarkable contributions as a scientist, researcher, mentor, leader, collaborator and administrator in the field of economics at the University of the Philippines Diliman (UPD) and throughout the country. His pioneering works on novel analytic constructs turned out to be useful for problems in economics. His research interests are varied and include micro-economic phenomena that can be modelled formally using game theory such as the theory of teams and partnerships, rent seeking and lobbying games and regulatory games. Other interests include the East Asian model, real exchange rate measurement, problems at the boundary between the state and the market such as market and government failures, economic history outcomes, among others.

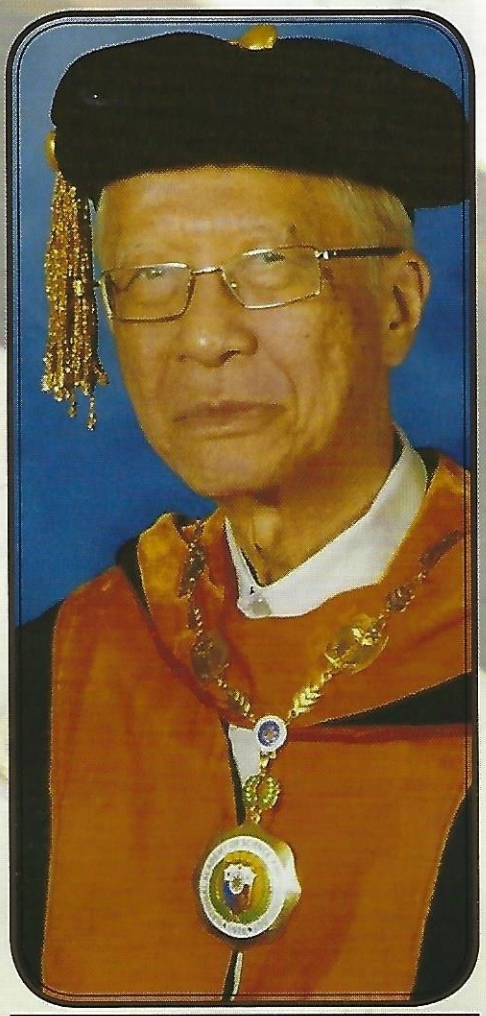
His involvement in many policy battles such as the controversial NBN-ZTE scandal, the looming fiscal crisis, J2K Crisis, exchange rate policy, tax and public expenditure policy, currency overvaluation, and CARP, to name a few, has provided strong, intellectual rigor and evidence-based perspectives. He has put his talents to work for the achievement of development and good governance in the Philippines.

Dr. Fabella also contributed to such diverse topics as the welfare effects of lobbying and rent-seeking, the efficiency of teams and partnerships, informal business networks, the properties of contracts under weak governance, and the mathematical properties of the concave family of functions, among others, as reflected in a sizeable publications record. A special research interest is the effect of weak state governance on efficient policymaking. Over several years, he has published in leading economics journals, such as the Southern Economic Journal, Journal of International Money and Finance, International Economic Review, as well as Public Choice and Journal of Public Economics.

Bienvenido F. Nebres, S.J.

NATIONAL SCIENTIST for MATHEMATICS

On 25 October 2011, His Excellency Benigno S. Aquino III conferred the Order of National Scientist to Fr. Bienvenido F. Nebres, S.J., during the Conferment Ceremonies at the Rizal Hall, Malacañan Palace, Manila.

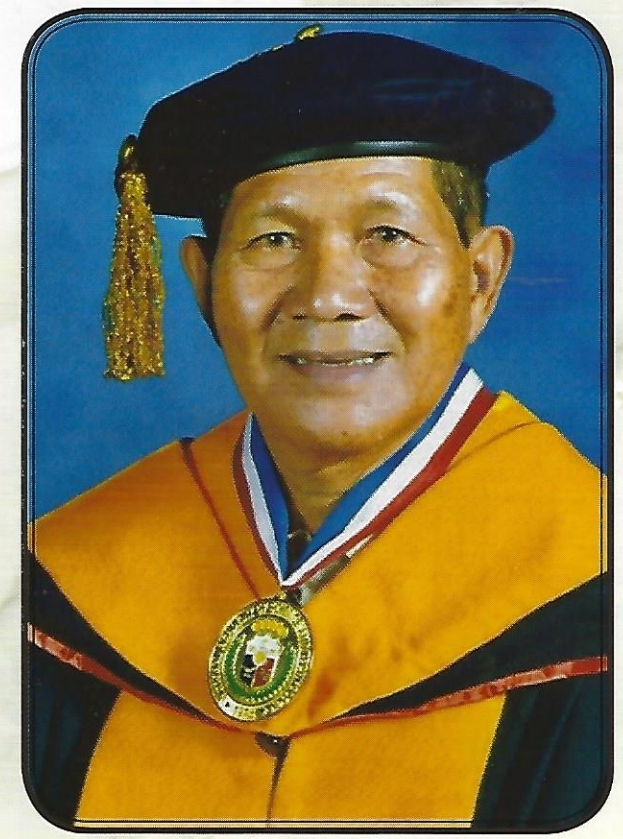


Fr. Nebres is recognized for his distinctive leadership in the formulation and implementation of a long-term plan for the development of the natural sciences and mathematics, including the establishment of the Ph.D. Consortium program in the basic sciences among the leading universities in the country. His research and publications in mathematical logic and mathematics education, and his vision and plan for graduate study and research in mathematics, notably in graph theory and combinatorics, analysis, and algebra, in the Philippines, has resulted in the publication of some 32 scientific and technological papers.

He is the only Filipino Ph.D. in the field of Mathematical Logic — one of the purest branches of Mathematics, and of central importance to the foundations of mathematics.

He has worked through the years to find effective ways of improving education in the public school system. He chaired the Project Advisory Group for the Engineering and Science Education Project (ESEP) of the DoST. He directed the development of the Division Elementary Development Plans (DEDP) of the Third Elementary Education Project (TEEP) of the then Department of Education, Culture and Sports (DECS, now the Department of Education or DepEd). He helped in the establishment of the Ateneo Center for Educational Development (ACED), an institution dedicated to developing and implementing effective ways of improving education in the public schools and which now works through the local governments and the local DepEd with over 400 public schools in Quezon City, Paranaque, Valenzuela, Nueva Ecija, La Union and other parts of the country. He is also the co-founder of Pathways to Higher Education, Philippines, an organization that aims to help academically-gifted but financially disadvantaged students enter college and finish their college education.

ACADEMICIANS



ERNESTO J. DEL ROSARIO, Ph.D.
(Physical Chemistry)

In recognition of his outstanding research contributions in physical chemistry and industrial biotechnology. As the country's leading expert in biofuels, he is known for his pioneering R&D work on novel and practical ethanol fermentation processes using various substrates such as saccharine and novel starch substrates and agricultural wastes. He designed and optimized pretreatment and saccharification processes for lignocellulosic materials. He also studied the preparation and application of important enzymes needed for bioethanol production such as alpha-amylase, glucoamylase, cellulose and xylanase. His other researches are on organic polymers, decolorization of alcohol distillery effluent, development of fermentation processes for the production of food yeast on coconut water or rice straw acid hydrolysate, and development of membrane-based processes for local industry applications.

AURA C. MATIAS, Ph.D.
(Industrial Engineering)

In recognition of her superior contributions as a researcher, mentor, and professional in the field of industrial engineering, including engineering education, sustainable development, and environmental management. Her involvement in various governmental projects has been characterized by both application of her skill and her creativity in generating new knowledge that form the basis of government policy formulation and decision-making structures. Her mentoring capabilities have been highly regarded to encompass not only the field of industrial engineering but other engineering disciplines as well.

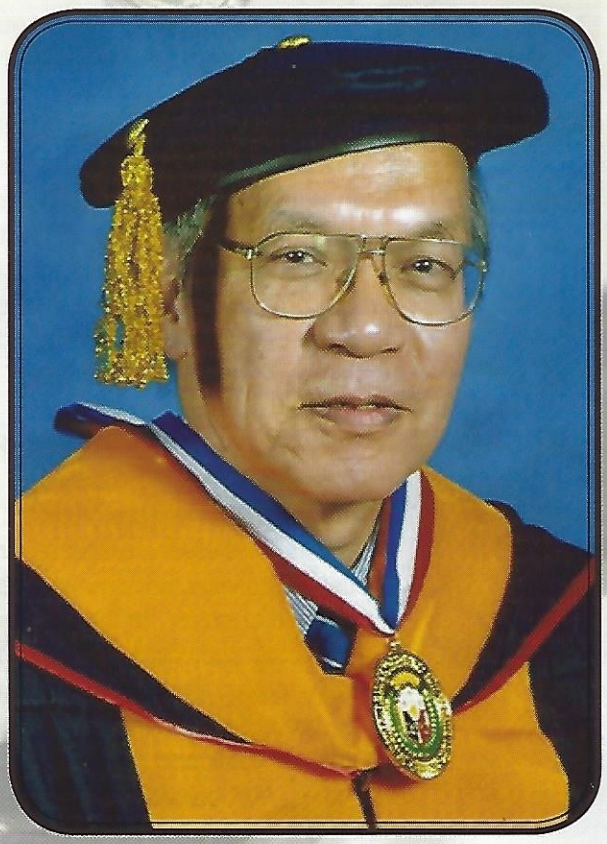
AGNES C. ROLA, Ph.D.
(Agricultural Economics)

In recognition of her important contribution to the field of agricultural economics and policy in the development of a framework for estimating the externalities surrounding agricultural production. She studied the impacts of pesticide use on farmers' health, the results of which were instrumental in the ban on most toxic pesticides and a shift towards Integrated Pest Management. Her long years of field research in the uplands plus watershed-level analysis investigated the sources and consequences of tensions between economic growths, the commercialization of agriculture and the evolution of institutions and policies for the management of natural resources in the uplands.

CORRESPONDING MEMBER

EDUARDO R. MENDOZA, Ph.D.
(Mathematics)

In recognition of his outstanding scientific achievements in mathematics and systems biology and demonstrated dedication to the development of science in the Philippines. His Ph.D. dissertation led to significant advances in several fields, such as the Cuspidal Cohomology Problem and Serre's Modularity Conjecture for quadratic number fields. His main construct has been called the "Mendoza complex". In 1997, he received the Microsoft President's Award for his outstanding work in ICT. Since 2002, he has applied his expertise in mathematics and informatics in the interdisciplinary applications of Theory of Complex Systems and Systems Biology as he joined the Ludwig Maximilian University in Munich, where he is currently Senior Research Scientist at the LMU's Faculty of Physics. Since 2003, he has actively mentored numerous students and young faculty members within the Philippine mathematics and science communities.



NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY AWARDS

THE OUTSTANDING YOUNG SCIENTISTS AWARD

This is given to young Filipino scientists (must not be 41 years old within January to December in the year of the award) who have made significant contributions to science and technology. For 2011, 11 young Filipino scientists received the award.

NATHANIEL C. AÑASCO, Ph.D.
(Fisheries Science)

In recognition of his important contributions in determining the presence, distribution, and effects of agricultural pesticides, ballast water treatment chemicals, spilled oil, and other marine pollutants on the coastal ecosystems which are important factors in the effective integrated management system of the Philippine coastal zones. His technical expertise in the assessment and monitoring of water quality, extent of marine pollution, and marine productivity in the country's important fishing grounds are significant contributions to both fisheries and environmental sciences.

CLARO N. MINGALA, Ph.D.
(Infectious Diseases)

In recognition of his significant studies on the immunology of water buffaloes by evaluating the immune responses at the molecular level, providing the baseline information necessary for the development of DNA-based technologies in the production of vaccines, diagnostic tools, and therapeutic agents. His studies also include epidemiological assessment and diagnostic identification of important water buffalo diseases such as Trypanosomiasis, Mastitis, Cryptosporidiosis and viral diseases.

MUDJEKEEWIS D. SANTOS, Ph.D.
(Applied Marine Biosciences)

In acknowledgment of his outstanding work in utilizing molecular biology and biotechnology for food security and conservation in fisheries to increase aquaculture productivity and for proper management of capture fisheries for its sustainable use to enhance the opportunities for fisherfolk livelihood and the fisheries industry in contributing to sustainable development and poverty alleviation; for his important studies and reviews in the understanding of blood formation in humans and other vertebrates which established the true identity of the well-studied chicken Myelomonocytic Growth Factor (cMGF); and for his important work on the protocol for the polyclonal anti-recombinant IgM antibody, the physically largest antibody in the human circulatory system, which is useful and cost-effective with tremendous promise for future development of other cell surface markers badly needed in studying blood cells in fish.

WAREN N. BATICADOS, Ph.D.
(Veterinary Medicine)

In recognition of his significant contributions in the molecular research and detection of significant animal diseases caused by protozoans and *Rickettsia* specifically trypanosomosis, babesiosis, neorosporosis, and ehrlichiosis, using molecular techniques and biotechnology, which prompted rapid diagnosis for timely and proper intervention against the diseases cited. His (and co-workers) twin works on the *Trypanosoma congolense* L3000 and the *T. brucei rhodesiense* have contributed to a better understanding on how trypanosomes, major human pathogens, evade the host's immune responses. His recent studies on the livestock dilemmas in the country have established appropriate protocols on the quick diagnosis of infectious diseases through molecular detection, PCR, and recombinant DNA technology.

JUAN CARLOS T. GONZALEZ, M.Sc.
(Zoology)

In acknowledgment of his superior contributions in biodiversity research and conservation which led to the discovery of new species of vertebrates including *Gallirallus calayanensis* and *Platymantis diesmosi* and for his implemented researches that led to the establishment of localized conservation programs for key areas in the Philippines (*i.e.*, South Luzon, Polillo, Cebu, and Mindoro) regarded to be global hotspots for biological diversity in collaboration with other conservation organizations across the world; and for his involvement in the advancement of conservation initiatives and expansion of applications of biological conservation focused on preserving the exceptionally rich biological diversity of the country.

REGINA C. SO, Ph.D.
(Chemistry)

In recognition of her significant contributions in the design and faster synthesis of biologically important unique sphinganine-containing glycosphingolipid analogs used in elucidating the relationship between the structure of glycosphingolipids and the type of immune response they generate. Presently, her research group delves on the preparation of novel functionalized materials for natural products separation, environmental and biomedical sensors and devices. She is a founding member of Global Young Academy, where she is a member of Science Education and Science and Society group.

CHRISTOPHER P. MONTEROLA, Ph.D.
(Physics)

In recognition of his significant contributions in the fields of complex networks, self- organization, nonlinear forecasting, granular matter, physics education and psychophysics. His work on complex networks analysis demonstrated that neural networks can benefit from ambient noise in both temporal and spatial processing of information and provided understanding of the crack propagation in woven fabrics and multilevel marketing. He and co-workers demonstrated mathematically that self-organization such as herding of animals, firing of neurons, avalanche dynamics in granular materials can be achieved even in dissipative environment, in contrast with prevalent views. Further, he showed that nonlinear forecasting tools such as neural networks combined with statistical filtering techniques can be used in accurate forecasting of the behavior of undecided population in an opinion poll, hit songs, chalk use and author attribution, as well as for information propagated in a classroom. His latest research focused on the use of physics and statistical tools to quantify human-related behavior.

JOSEPH M. PASIA, Ph.D.
(Social Economic Sciences-Applied Mathematics)

In recognition of his significant contributions to the study of evolutionary computation and its applications in the field of operations research, finance, and health care. His research involves the analysis, design and implementation of evolutionary algorithms for optimization problems in transportation and logistics, scheduling, and financial portfolio selection. Using his training in mathematical optimization, he has found solutions to real-life problems such as vehicle routing and flowshop scheduling problems. With collaborators, he developed a risk-group oriented chronic disease progression model for breast cancer patients. In his various researches, he developed sophisticated metaheuristic methods to obtain insights and good solutions to these problems which do not have exact solutions. His research outputs have been published in various national and international refereed journals.

ALLAN N. SORIANO, Ph.D.
(Chemical Engineering)

In recognition of his significant research activities in the field of chemical engineering, particularly on thermo-physical and transport property characterization and correlation development for industrially-important solvent systems. His works on ionics liquids and alkanolamines are essential in the design of absorption processes for carbon dioxide capture and sequestration technology.

JOSE BIENVENIDO MANUEL M. BIONA, Ph.D.
(Mechanical Engineering)

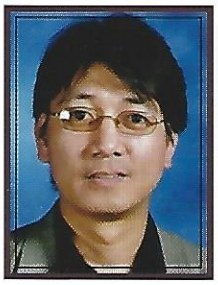
In recognition of his scientific work on the development of vehicle drive cycles and testing protocols as well as life cycle assessment (LCA)-based dynamic energy and emissions models for evaluating alternative motor vehicle propulsion. These models and methodologies have been significant in developing transport technology and policy evaluation for the Philippines.

CARLO P. MAGNO, Ph.D.
(Educational Psychology)

In recognition of his important research works on metacognition, self-regulation, and student achievement which explain ways how individuals find solutions to problems, control negative emotions, achieve critical and scientific thinking, speak and write in a second language, develop beliefs about learning, and value learning; for introducing modern test theory as an alternative to the use of classical test theory among educators; for his professional association in developing educational and psychological assessment in the country wherein he was able to advocate improvement on the practice of assessment among educators and the value of assessment in teaching and learning; and by demonstrating how sound scientific psychology, dedicated professional work, and passion for the Filipino learners can create ways to improve our educational system that are responsive to the Filipino learner's needs and aspirations.

TWAS PRIZE FOR YOUNG SCIENTIST IN THE PHILIPPINES

This is given to outstanding young Filipino scientist by the NAST PHL and the Third World Academy of Sciences (TWAS). He or she must be less than 40 years old on the day of the awarding.



MARLON N. MANALO, Ph.D.
(Chemistry)
Institute of Chemistry, College of Arts and Sciences
University of the Philippines Los Baños

In recognition of his important researches on the utilization of nuclear magnetic resonance (NMR) spectroscopy associated with computational methods to probe the solution structure of proteins and nucleic acids which are considered as novel and significant in the emerging field of bioinformatics, molecular biology, and materials science in which the findings could offer more insights into the relative strength of hydrogen bonding (H-bonding) interactions in DNA and RNA which may allow prediction of sites that are rigid or flexible and therefore aid in understanding binding interactions; the results and trends observed in these works may help in correlating the structure and stability of nucleic acids with its nucleotide sequence and in explaining structure-activity relationships which can be useful in disease diagnostics and in understanding the molecular basis of disease.

NAST-HUGH GREENWOOD ENVIRONMENTAL SCIENCE AWARD

This award recognizes outstanding scientific and technological research works that contribute to environmental protection and conservation.

LEONARDO L. CO
(Botany)
Institute of Biology, University of the Philippines Diliman
(Posthumous)

In recognition of his outstanding botanical expertise in biodiversity profiling of Philippine forests, tree planting activities, species identifications of Philippine specimens in several herbaria, including his intricate, long-term mapping and studies of the forest trees in Palanan, Isabela by which the information on forest composition and dynamics could help us understand the spatial and temporal scale of natural forest processes thereby coordinating the global and national needs of biological conservation with the local demands for social and economic development; for his pioneering and seminal work in compiling and publishing the first authoritative manual on medicinal plants (A Manual on Some of Philippine Medicinal Plants, 1977) in the country aimed at popularizing local herbal medicines and the production of medicines from readily available and accessible materials; for imparting his expertise in the Cordillera region to establish community-based health programs, including training the local health workers on the use of medicinal plants and the practice of acupuncture for indigenous villages in Abra, Apayao, Benguet, Kalinga, Mountain Province, and Ifugao; and for generously sharing with colleagues, students and the environmental agencies of government his knowledge of Philippine plants.

NAST TALENT SEARCH FOR YOUNG SCIENTISTS

This is a project of the NAST PHL that encourages young people (must not be more than 35 years old within January to December in the year of the award) to pursue a career in science.

CHRISTOPHER P. MONTEROLA, Ph.D.
First Prize

In recognition of his novel and pioneering work on the experimental simulation of landslides using modeling, simulation, and experiment which demonstrated the observed statistics of landslides occurrences in a small-scale, tabletop set up, which has the potential of testing the effectiveness of mitigating measures in a modest scale in the mitigation and an in-depth understanding of the dynamics of a catastrophe. His contribution to Physics education research through both simulation and experiments on actual physics lecture classes in showing that seating arrangement matters and that cooperation within groups combined with competition among groups can boost student's performance, factors that were never introduced yet to Physics education.

FLORDELIZA H. BORDEY, Ph.D.
Second Prize

In recognition of her exemplary knowledge in the areas of economics, agriculture and database software(s) which facilitated the completion in the drafting of the "Roadmap for Philippine Staple Food Self Sufficiency for 2011-2016" of the Aquino Administration. Her novel work in total factor productivity in agriculture will constitute as basis for policy makers in agriculture to promulgate policies that will increase productivity, profitability, and farmer's welfare.

JAYMEE R. ENCABO, M.Sc.
Third Prize

In recognition of her important work on the detection methods in assessing the tungro virus infection in tolerant rice cultivars, which accounted to 90% yield losses for infected rice harms. Her study aimed at enabling future researchers to have baseline information relevant to breeding tungro-resistant rice varieties.

OUTSTANDING PUBLICATION AWARDS

OUTSTANDING SCIENTIFIC PAPER AWARDS

"Weathering of basaltic rock and clay mineral formation in Leyte, Philippines" (by Victor B. Asio and Reinhold Jahn). ISSN 0031-7454 The Philippine Agricultural Scientist 90 (2): 222-230 (2007).

"Selection of high ethanol-producing Saccharomyces cerevisiae strains, their fermentation properties, and genetic differentiation based on rep-PCR and mt rDNA-PCR" (by Irene G. Pajares, Francisco B. Elegado, Jose Paulo V. Magbanua, and Asuncion K. Raymundo). ISSN 0031-7683 Philippine Journal of Science 138(1):37-48 (2009).

"A partial expressed sequence tag (EST) library of the economically important red alga Eucheuma denticulatum (N.L. Burham) F. C. Collins and Hervey" (by Paulina S. Aspilla, Anna Angela Camille B. Antonio, Giuseppe C. Zuccarello, Nina Rosario L. Rojas). ISSN 2094-2818 Philippine Science Letters 3(1):109-120 (2010).

"A primal-dual island search method for total variation-based image restoration" (by Marrick C. Neri and Michael C. Hintermuller);

"Smooth asymptotics for the price of a DIC barrier option" (by Jose Maria L. Escaner and Oliver Ian C. Wee). ISSN 0115-6926 Matimyas Matematika 30 (2-3): 23-31 (2007).

"Analysis of colonic histopathological images using pixel intensities and hough transform" (by Laurence A. Gan Lim, Raouf N.G. Naguib, Elmer P. Dadios, Jose Maria C. Avila). ISSN 2094-2818 Philippine Science Letters 3(1) (2010).

"The Philippines in the world of the influenza pandemic of 1918-1919" (by Francis A. Geologo). Philippine Studies 57 (2): 261-282 (2009).

"Measuring market risk using extreme value theory (EVT)" (by Jose Oliver Q. Suaiso and C. Dennis S. Mapa). The Philippine Review of Economics XLVI (2): 91-121 (2009).

OUTSTANDING BOOK/MONOGRAPH AWARD

Farm Management: Approaches and Tools in a Changing Environment (by Corazon T. Aragon, Antonio Jesus A. Quilloy, Salvador P. Catelo, Julieta A. Delos Reyes, Alessandro A. Manilay, Marilyn M. Elauria, and Cesar B. Quicoy). ISBN 978-971-547-285-2, Published by UPLB, 2010.

Production Networks, Trade Liberalization, and Industrial Adjustment in the Philippines, Vol I: Industry Studies (by Ponciano S. Intal, Jr., Gerardo L. Largoza, Rizalino N. Malabed, and Paulo Jose M. Mutuc). ISBN 978-971-555-532-6, Published by Angelo King Institute, 2010.

Production Networks, Trade Liberalization, and Industrial Adjustment in the Philippines, Vol II: Institutions and Policies (by Ponciano S. Intal, Jr., Marissa C. Garcia, and Miguel Roberto V. Borromeo). ISBN 978-971-555-533-3, Published by Angelo King Institute, 2009.

Production Networks, Industrial Adjustment, Institutions and Policies, and Regional Cooperation: Country Cases and Regional Papers (by Ponciano S. Intal Jr., Marissa C. Garcia, and Miguel Roberto V. Borromeo). ISBN 978-971-555-531-9, Published by Angelo King Institute, 2009.

Philippine Human Development Report 2008/2009: Institutions, Politics and Human Development (by Toby C. Monsod, Cynthia Rose Banzon-Bautista, and Emmanuel S. De Dios). ISSN 0118-6361, Published by Human Development Network, 2009.

Teaching and Learning in the Health Sciences (by Erlyn A. Sana). ISBN 978-971-542-573-5, Published by University of the Philippines Press, 2010.

Kalusugang Pampubliko sa Kolonyal na Maynila (1898-1918): Heograpiya, Medisina, Kasaysayan (by Ronaldo B. Mactal). ISBN 978-971-542-612-1, Published by University of the Philippines Press, 2009.

NATIONAL SCIENCE AND TECHNOLOGY WEEK (NSTW) AWARDS

For 2011, no winners were proclaimed for Eduardo A. Quisumbing Medal for Outstanding Research and Development Award in Basic Research and Gregorio Y. Zara Medal for Outstanding Technology Commercialization Award.

THE OUTSTANDING SCIENCE ADMINISTRATOR AWARD (DIOSCORO L. UMALI MEDAL)

LUIS REY I. VELASCO, Ph.D.
Chancellor
University of the Philippines Los Baños

In recognition of his sterling commitment, dedication, leadership, and his meritorious service as a researcher, mentor, and administrator particularly for serving as Chancellor of the University of the Philippines Los Baños (UPLB) for two successive terms. Under his management, UPLB made major investments in the development of its land endowments for income generation, such as the establishment of a citronella plantation, rubber plantation, and recently, plans for alternative energy-generating projects and water impoundment facilities. Under his stewardship, a number of privately funded research and development projects were implemented, including nature conservation, biofuel research, commercialization of postharvest technology and organic farming. He also took initiatives in the establishment of centennial professorial chairs and centennial awards via faculty and staff welfare projects, and steered the university in bringing public service to unparalleled heights by pushing for the implementation of activities that promote distinctive excellence across the university.

THE OUTSTANDING RESEARCH AND DEVELOPMENT AWARD FOR APPLIED RESEARCH (JULIAN A. BANZON MEDAL)

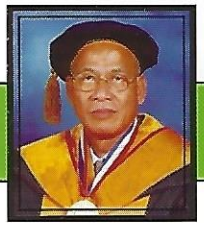
LORENZA GONZALEZ-LIRIO, Ph.D.
Department of Biology, College of Arts and Sciences
Benguet State University

In recognition of her successful research and development work on Job's tears (*Coix lacryma-jobi* Linn), a neglected tropical food plant belonging to the grass family. Her documentation of the diversity of the wild and cultivated varieties of Job's tears (locally known as tigbi, adlay, ag-gey, ag-dey, etc.), her studies on the propagation of the plant, survey of traditional uses, and contributions to product diversification of Job's tears can provide the basis for alternative livelihood and economic opportunities for people in rural areas. The wild type can be made into ornaments (earrings, bracelets, necklace, rosaries. or curtains) and the cultivated varieties can be utilized as food (high-fiber nutritious cookies, cereal gruel, tea, and wine similar to tapey) and as herbal medicine traditionally used to cure some ailments such as wounds and urinary tract infections. Her commercialization of Job's tears food products, active information campaign to popularize the plant, and training of farmers on cultivation methods have already provided some communities of Benguet an alternative food and income source.

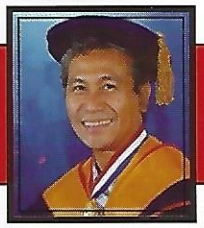
BENEFITS OF NATIONAL SCIENTISTS AND ACADEMICIANS

RESEARCH FELLOWSHIP

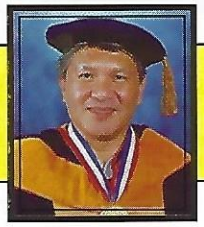
Academician Christopher C. Bernido
Research on Analytical Models for Industrial System



Academician Eufemio T. Rasco, Jr.
Monograph on *Nypa fruticans*



Academician Fernando P. Siringan
Sampling and Characterization of Mercury Pollution at Selected Mining Sites in the Philippines



Academician Guillermo Q. Tabios III
Assessment of Mining Activities, Practices and Governance Issues in Relation to Mercury Pollution at Selected Sites in the Philippines

Academician Filemon A. Uriarte, Jr.
Monograph on Understanding Corporate Social Responsibility

Academician Reynaldo B. Vea
A Review of Flood Control Measures in Metro Manila

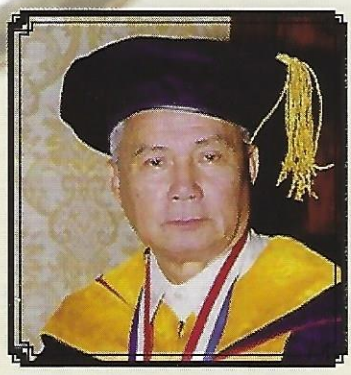
Academician Ruben L. Villareal
Building a Science Culture in Laguna with Los Baños as Pilot through Improved Math and Science Education (Phase 2)

RECOGNITION AND AWARDS RECEIVED BY MEMBERS

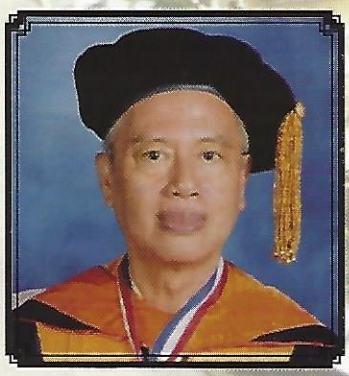
NS Fe V. del Mundo
Grand Collar
(*Maringal na Kwintas*)
of the Order of the
Golden Heart
11 August 2011

Acd. Ramon C. Barba
Discoro L. Umali
Achievement Award for
Agricultural Development

NS Lourdes J. Cruz
Third World Academy of
Sciences (TWAS) Fellow



Acd. Angel C. Alcala
Gregorio Y. Zara Award
for Basic Research,
Philippine Association for the
Advancement of Science, Inc.

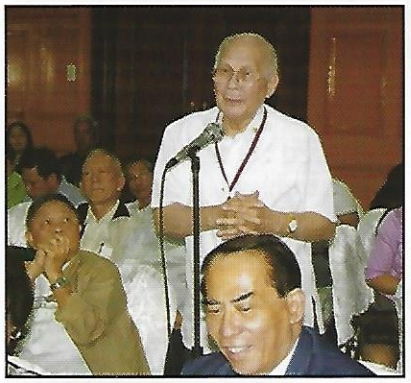


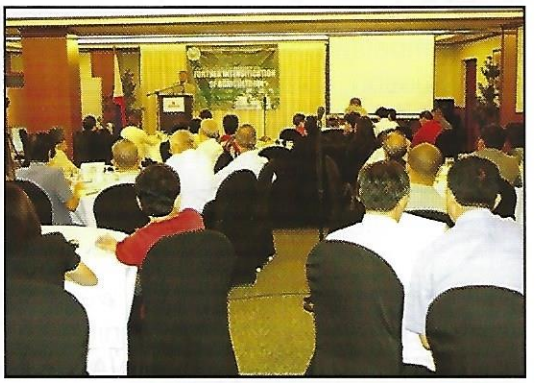
Acd. Salcedo L. Eduardo
National Research Council
of the Philippines (NRCP)
Achievement Award in
Veterinary Medicine

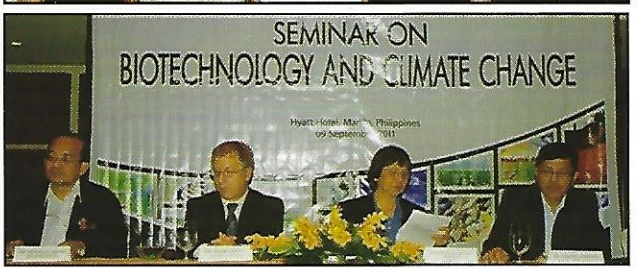
Acd. Evelyn Mae
Tecson-Mendoza
Concepcion D. Dadufalza
Award for Achievement,
University of the
Philippines System

ADVISORY FUNCTION

Through its advisory activities, the NAST PHL heightens public awareness, understanding and appreciation of the role that science and technology plays in national development. The conduct of fora and roundtable discussions has encouraged public participation in open discussions of a wide range of topics on important S&T issues, such as biotechnology and biosafety, genetic engineering, intellectual property rights, information and communications technology, ethics, water, waste management, climate change, aging, agriculture, biotechnology, energy, science education, population, among others.







33rd ANNUAL SCIENTIFIC MEETING

Meeting the Challenges of Agricultural Productivity, Competitiveness and Sustainability

13-14 July 2011

The 33rd Annual Scientific Meeting of the NAST focused and built upon *Philippine Agriculture 2020*, a strategic plan developed out of a series of consultations and workshops convened by the NAST among the various stakeholders of the agriculture and fisheries sector.

Through a series of RTDs and related activities, the NAST examined and discussed critical issues and concerns vital to the ability of a modern agricultural sector to meet the challenges of greater productivity, enhanced global competitiveness, and sustainability and resilience in the face of deteriorating and declining availability of natural resources, as well as climate change. The outcomes were presented and discussed in the ASM Plenary Sessions.

Senator Francis N. Pangilinan, chair of the Senate Committee on Agriculture and Food and the Committee on Social Justice and Rural Development keynoted the event. He recognized the importance of science and technology in the development of the country and challenged the men and women of science to look for solutions to the country's problem on food security. Experts on the abovementioned fields shared their insights and experiences in the 7 plenary sessions of the meeting. Acd. Emil Q. Javier discussed Philippine Agriculture 2020 in session 1, Acd. Rafael D. Guerrero III talked about the management of our marine frontier in session 2, Acd. Ruben L. Villareal tackled the further intensification of agriculture in session 3, Corresponding Member Reynaldo L. Villareal discussed the sustainability of organic agriculture in session 4, Acd. Arsenio M. Balisacan talked about strengthening the agricultural supply chains in session 5, Acd. Rodel D. Lasco discussed the sustenance of ecological services for agricultural productivity, sustainability and competitiveness in session 6, and Dr. Marlowe U. Aquino explained the imperatives of extension, e-information, communication and statistics in agricultural development.

The event was organized by the NAST Agricultural Sciences Division and co-chaired by National Scientist Dolores A. Ramirez and Acd. Javier. More than 700 scientists and researchers from key institutions and agencies attended the event.

Part of the two-day program were the ceremonies for the investiture of the new Academicians and Corresponding Member, recognition for the Outstanding Young Scientists (OYS), TWAS Prize for Young Scientists in the Philippines, NAST Talent Search for Young Scientists, Outstanding Scientific Papers, Outstanding Books and Monographs and NAST-Hugh Greenwood Environmental Science Award.

The resulting recommendations were summarized into the *Resolutions on Meeting the Challenges of Agricultural Productivity, Competitiveness, and Sustainability*, which were presented by Acd. Javier to DoST Secretary Engr. Mario G. Montejo, as represented by Undersecretary Fortunato T. dela Peña, and DA Secretary Proceso Alcala through Bureau of Agricultural Research Director Nicomedes P. Eleazar. The NAST envisioned that the resolutions be used by the current administration as a guide to assist concerned departments and agencies in preparing and implementing the roadmap for the agricultural sector.

Republic of the Philippines
NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY, PHILIPPINES
Department of Science and Technology

33rd Annual Scientific Meeting
MEETING THE CHALLENGES OF AGRICULTURAL PRODUCTIVITY,
COMPETITIVENESS, AND SUSTAINABILITY
July 13-14, 2011 ~ Manila Hotel

RESOLUTIONS ON MEETING THE CHALLENGES OF AGRICULTURAL PRODUCTIVITY, COMPETITIVENESS, AND SUSTAINABILITY

WHEREAS, the majority of Filipinos specifically in the countryside are heavily dependent on agriculture, accounting for about 14% of the gross domestic product, 6-8 percent of exports and 37% of employment;

WHEREAS, the science community, led by the National Academy of Science and Technology, Philippines, recognizing the pivotal role of modernizing agriculture in achieving the national development goals of poverty alleviation, global competitiveness, food security and sustainability has crafted a medium term strategic plan for agriculture and natural resources entitled Philippine Agriculture 2020 (PA 2020);

WHEREAS, the Department of Agriculture, DA-Bureau of Agricultural Research, Department of Science and Technology through the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development and Philippine Council for Aquatic and Marine Resources Research and Development and other concerned agencies are starting to take cognizance of and adopt the recommendations in PA 2020;

NOW, THEREFORE, the National Academy of Science and Technology, Philippines on its 33rd Annual Scientific Meeting recommends the following actions to be addressed accordingly by the appropriate offices and agencies:

Office of the President and Legislative Bodies;

a) Enactment of a Comprehensive National Land Use Plan Law, Lands Administration Reform Law and the establishment of the Lands Administration Authority (LAA) under the Department of Environment and Natural Resources for an integrated, unified, synchronized system of land use planning at all levels. LAA will integrate the functions of Lands Registration Authority, Registry of Deeds, Lands Management Bureaus, Lands Management Services and National Mapping Resources Information Authority (NAMRIA);

b) That the Comprehensive Agrarian Reform Program (CARP) be phased-out by 2014 as planned, and the residual functions and staff be integrated with DA and respective LGUs and the parcelization of CLOAs to individual titles be completed;

Office of the President, Department of Budget and Management (DBM), Department of Finance (DoF), Department of Agriculture (DA);

a) Creation of a Small Farmers Fund combined with Farm Insurance with single digit interest rates (subsidized credit and insurance for small farmers/fisherfolks);

b) Upgrade and a regularize the budget and resources of DA bureaus and agencies commensurate with their mandated functions;

Department of Environment and Natural Resources (DENR) and Department of Interior and Local Government (DILG);

a) Immediate completion of cadastral maps to delineate forestlands, protected areas and ancestral domains;

b) Facilitating and expediting the completion by LGUs of their respective comprehensive land use plan (CLUPs) to serve as an integrating framework in the management of resources;

Department of Agriculture (DA);

a) Comprehensive external review of the National Irrigation Authority (NIA), its mandate, functions, performance, future plans and programs;

b) Exploring the possibility of allowing Irrigators Associations to keep the majority of irrigation fees, of providing incentives for them to organize their associations, pay and collect water fees and properly maintain and manage irrigation systems;

c) Rationalize allocation of government spending to different crops to reflect their relative importance in the agriculture sector value added. In particular, increase of government support for conservation and development of the country's fisheries resources;

Department of Science and Technology (DoST) and Department of Agriculture (DA);

a) Raise the share of agricultural R&D to 1% of GVA of agriculture;

Further resolved as it is hereby resolved that we, members of the scientific community, strongly support the following initiatives:

a) The convergence initiative being pursued among Department of Agriculture (DA), Department of Agrarian Reform (DAR) and Department of Environment and Natural Resources (DENR) to maximize the investment and initiatives in the countryside and in preparation for the phase-out of DAR in 2014;

b) The rationalization and redirection of National Food Authority (NFA) in particular, the increase in the share of rice imports by the private sector at the same tariffs as state imports;

c) Re-filing and immediate passage of the following legislative bills: An Act Strengthening the Animal Industry and Veterinary Services in the Philippines; the National Land Use Act of the Philippines; Land Administration Reform Act; and Agricultural Education Act.

PRE-ASM DISCUSSIONS AND CONSULTATIONS

In preparation for the 33rd Annual Scientific Meeting, roundtable discussions and consultation meetings with different government agencies concerned with Philippine agriculture were conducted from January to June 2011. Results and recommendations from these activities were incorporated in the commissioned papers presented during the ASM.

SSD

Are We Done with Agriculture?
20 January 2011; Traders Hotel Manila, Pasay City, Metro Manila
Organized by the Social Sciences Division
Focal Person: National Scientist Mercedes B. Concepcion
Speakers: Acd. Raul V. Fabella (NAST SSD and UP Diliman School of Economics); Acd. Arsenio M. Balisacan (NAST SSD and UP Diliman School of Economics); Dr. Agnes C. Rola (College of Public Affairs, UP Los Baños); and Undersecretary Jerry E. Pacturan (Department of Agrarian Reform)
Moderator: Academician Ruben L. Villareal
Highlights: To help improve the agriculture sector, the following courses of action were suggested: (1) Dismantle NFA's rice procurement program and control over rice imports; (2) Replace rice support program with direct income support for small farmers & CARP beneficiaries; (3) Secure access to food of poor non-farming (urban) households through expanded CCT & other social protection schemes; (4) Put additional investments in irrigation facilities; including rehabilitation of old systems and improvement of the irrigation social infrastructure; (5) Enact the national land use law to protect productive farm lands and the watershed areas; (6) Strengthen the rice seed industry so farmers can have access to high quality seeds in a timely manner; (7) Sustain the gains of the agrarian reform program by strengthening the institutional support system, including the extension and support services to the beneficiaries of the CARP; and (8) To undertake program beneficiaries development despite limited resources, DAR integrates efforts and complements thrusts.

ASD

Managing our Marine Frontier
07 February 2011; Traders Hotel Manila, Pasay City, Metro Manila
Organized by the Agricultural Sciences Division
Focal Person: Academician Rafael D. Guerrero III
Speakers: Cesar P. Pagdilao (OIC-Executive Director, DoST-PCAMRD), Gil A. Adora (Assistant Director, DA-BFAR), Melchor M. Tayamen (Chief, DA-BFAR National Seaweeds Technology Center), and Noel C. Barut (OIC-Interim Executive Director, NFRDI)
Highlights: The RTD aimed to (1) assess the status of marine fisheries of the country; (2) identify issues related to productivity, sustainability and competitiveness; and (3) recommend actions on policy related to marine fisheries. The foci were mariculture of seaweeds, mariculture parks, deep sea fisheries and coastal fisheries. The importance of creating a Department of Fisheries was reiterated to take care of all the issues related to the fisheries sector.

Further Intensification of Agriculture

21 February 2011; Traders Hotel Manila, Pasay City, Metro Manila

Organized by the Agricultural Sciences Division

Focal Person: National Scientist Benito S. Vergara

Speakers: Dr. Rodrigo B. Badayos (Director, Agricultural Systems Cluster, UP Los Baños), Dr. Pompe C. Sta Cruz (Professor, UPLB), Dr. Victor B. Ella (Professor, Institute of Agricultural Engineering, UPLB), Dr. Emiliana Bernardo (Chair, Insect Resistance Management Advisory Team, Department of Agriculture), Dr. Cezar P. Mamaril (Consultant, Philippine Rice Research Institute), Dr. Arnold R. Elepaño (Associate Professor and Director, Institute of Agricultural Engineering, UPLB), Acd. Evelyn Mae Tecson-Mendoza (Chair, NAST Chemical, Mathematical and Physical Sciences Division) and Dr. Victor S. Luis Jr. (Consultant, EcoGov)

Highlights: To further intensify the country's agricultural sector, the following courses of action were suggested: (1) enhance sustainability of arable land; (2) confront the food security issue, through massive infusion of capital; (3) availability of scholarship grants to facilitate training/graduate studies of the concerned research staff; (4) better coordination among agencies, organizations and other entities that develop, manage, and use water resources in the country; and (5) enhance the grains business operations of farmers' cooperatives.

How Sustainable is Organic Agriculture?

14 March 2011; Hyatt Hotel Manila, City of Manila, Metro Manila

Organized by the Agricultural Sciences Division

Focal Person: Corresponding Member Reynaldo L. Villareal

Speakers: Dr. Charito P. Medina (National Coordinator, Magsasaka at Siyentista Tungo sa Pag-unlad ng Agrikultura), Edgardo S. Uychiat (President, Negros Island Sustainable Agriculture and Rural Development Foundation, Inc.), Dr. Angel L. Lambio (Professor, College of Agriculture, UP Los Baños), Andry K. Lim (Founder, Tribal Mission Foundation International, Inc.), Lara G. Vivas (Senior Science Research Specialist, Bureau of Agriculture and Fisheries Products Standards), Antonio de Castro (Vice-President, Organic Producers and Traders Association), and Dr. Oscar Gutierrez (Food and Drug Regulation Officer, Food and Drug Administration)

Synthesizer: Dr. Reynaldo E. dela Cruz (Retired Professor, UPLB)

Highlights: Some of the recommendations were (1) intensification of research to compare the benefits and advantages of organic and conventional farming, including extension programs; (2) utilization of microorganisms like mycorrhiza to increase plant's growth and nutrient absorption rate; (3) enforcement of regulation, certification and standards; and (4) raising funding support on initiatives related to this with the involvement of small players in the agricultural sector.

Agricultural Extension, e-Information, Communication and Statistics

03 May 2011; Traders Hotel Manila, Pasay City, Metro Manila
Organized by the Agricultural Sciences Division
Focal Person: Academician Libertado C. Cruz
Speakers: Asterio Saliot (Director, DA-Agricultural Training Institute), Dr. Agnes C. Rola (Dean, UPLB College of Public Affairs), Dr. Patricio S. Faylon (Executive Director, DoST-Philippine Council for Agriculture, Forestry and Natural Resources Research and Development), Dr. Mary Ann Sayoc (General Manager, East-West Seed, Inc.) and Dr. Virginia Cuevas (UPLB Vice Chancellor for Community Affairs)
Synthesizer: Dr. Marlowe Aquino (PhilRice)
Highlights: Some of the recommendations include (1) making sure that agricultural extension programs are effective and efficient, (2) government should have a good coordinating agency to oversee the implementation of programs related to agricultural extension, (3) good monitoring and evaluation (M&E) scheme should be in place to address loopholes and inefficiencies (4) creation of an external review board that will look into the different agricultural development programs to be included in the proposed law on extension, (5) involving the private sectors in agricultural extension works, and (6) the active involvement of the SUCs in building capabilities among the agricultural extension workers to continuously develop models or strategies of doing extension.

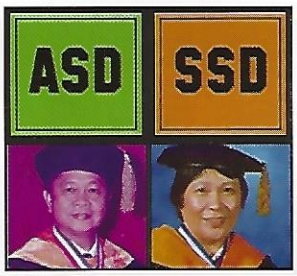
Sustaining Ecological Services

11 April 2011; Hyatt Hotel Manila, City of Manila, Metro Manila
Organized by the Agricultural Sciences Division
Focal Person: Academician Rodel D. Lasco
Main Paper: Sustaining Ecological Services for Agricultural Productivity, Sustainability and Competitiveness
Speakers: Acd. Lasco (NAST ASD and Philippine Coordinator, World Agroforestry Centre Philippines), Dr. Rex Victor O. Cruz (Dean, College of Forestry and Natural Resources, UPLB), Dr. Felino P. Lansigan (Professor, Institute of Statistics, UPLB), Dr. Agnes C. Rola (Dean, College of Public Affairs, UPLB) and Acd. Guillermo Q. Tabios III (Professor, Department of Civil Engineering and Director of the National Hydraulic Research Center)
Discussants: Water and soil - Vicente S. Paragas (Executive Director, National Water Resources Board) and Engr. Samuel M. Contreras (Chief, Soil Conservation and Management Division, Bureau of Soils and Water Management); Biodiversity, climate change and governance policy - Dr. Theresa Mundita S. Lim (Director, DENR-Protective Area and Wildlife Bureau), Dr. Rogelio N. Concepcion (Consultant, House and Senate Committees on Agriculture and Fisheries Modernization) and Dr. Neric Acosta (Vice-President for Mindanao, Liberal Party of the Philippines)
Highlights: To help sustain the ecological services, the following were suggested: (1) Connectivity between the terrestrial and aquatic ecosystems, and freshwater aquatic and marine ecosystems (which are very important since the Philippines is an island), should be discussed; (2) There is a need to have a base map where we can identify 12-15 protected areas and the government should stand for no-mining-policies in these areas; (3) Use location-specific, cost-effective and science-based climate change adaptation (CCA) strategies and options; (4) The government must fully engage the NAST. Science must return, and be re-streamed into the entire bureaucracy for policy-making; (5) There is a need to develop a "new" science to help keep up with the changing society; and (6) There is a need for good governance, science based-policies, capacity building, and investments in data collection because agricultural production ultimately depends on ecological services.

Strengthening Agricultural Supply Chains
23 May 2011; Hyatt Hotel Manila, City of Manila, Metro Manila
Organized by the Social Sciences Division
Focal Person: Academician Arsenio M. Balisacan
Speakers: Salvador S. Salacup (Assistant Secretary for Fisheries, Department of Agriculture), Dr. Larry N. Digal (Professor, UP Mindanao) and Dr. Flordeliza Lantican (Dean, UPLB College of Economics and Management)
Discussants: Roberto C. Amores (President, Philippine Mango Exporters Foundation, Inc.) and Antonio L. Tiu (Chairman of the Board, Chief Executive Officer and President, MUSX Corporation)
Moderator: Academician Raul V. Fabella (NAST SSD)
Highlights: It aimed to determine the status of small agricultural producers vis-à-vis the modern supply chains; identify the critical constraints to linking small producers to the modern supply chains; identify constraints and opportunities where science and technology intervention is needed; and recommend policies and institutional arrangements that will promote effective science and technology intervention where it is needed.

SSD

OTHER ADVISORY ACTIVITIES



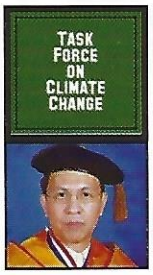
CARPER and Beyond
24 October 2011; Hyatt Hotel Manila, City of Manila, Metro Manila
Collaborators: Department of Science and Technology (DoST), College of Public Affairs and Development (CPAf) of UP Los Baños and the AGHAM Party-List
Lead Persons: Academicians Ruben L. Villareal and Agnes C. Rola

The discussion aimed to determine: (1) the sustainability of the welfare of beneficiaries of the Comprehensive Agrarian Reform Program (CARP); (2) the potential impacts of CARP in increasing agricultural productivity; and (3) the sustainability of gains from CARP. The resource person was Dr. Cielito F. Habito, director of the Ateneo Center for Economic Research and Development (ACERD), Ateneo de Manila University (AdMU). He tackled inclusive growth, poverty reduction and farm income increase during the implementation of CARP, agrarian reform impacts on investments, productivity, incomes, poverty and satisfaction ratings, and policy implications and imperatives.

Panel discussants included Department of Agrarian Reform (DAR) Assistant Secretary for Support Services Herminia San Juan; Dr. Prudenciano U. Gordoncillo, chair of the Department of Agricultural Economics (DAE) of UPLB College of Economics and Management (CEM); Danilo Carranza, representative of Katarungan/Rights.net; Atty. Eduardo F. Hernandez, landowner representative of the Presidential Agrarian Reform Council (PARC); and Carmina B. Flores-Obanil, NGO-PO representative from Focus on the Global South. Dr. Linda M. Peñalba, professor at the UPLB-CPAf, synthesized the discussions. NAST President Academician Emil Q. Javier delivered the opening remarks, while National Scientist Dolores A. Ramirez, chair of the AS Division, gave the closing remarks. Dr. Josefina T. Dizon, professor at UPLB-CPAf, served as the moderator and master of ceremonies.

After the roundtable discussion, the following recommendations were formulated:
(1) the government must shift from the top-down management to a well-run devolved system;

(2) there should also be support for capacity-building and empowerment of LGUs and communities. It is also important to uphold transparency and accountability in agriculture budget reform;
(3) enabling and empowering small farmers financially is important to address issues in farm credit/ finance;
(4) heighten information dissemination on product and technology options and widen farm transport options to include cost-effective alternatives;
(5) the government should increase and maintain the small scale irrigation systems manageable by farmers;
(6) the government must look into the "controversial lands" or "problematic lands" owned by popular individuals that remain to be untouched; and
(7) it is not agrarian reform per se that is the only problem, the government must look into its governance towards agricultural concerns/ issues.

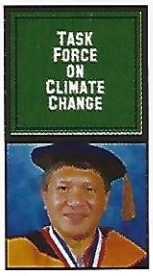


CLIMATE CHANGE SERIES
Socio-Economic Research on Climate Change in the Philippines: Where We Are and Where We Are Going

17 August 2011; Traders Hotel Manila, Pasay City, Metro Manila
Collaborators: Southeast Asian Regional Centre for Graduate Study and Research in Agriculture (SEARCA), DoST-Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD)
Lead Person: Academician Rodel D. Lasco

The discussion aimed at presenting and validating results of socio-economic researches on climate change, identifying gaps on future research directions and determining policy implications. Invited experts included Dr. Asa Jose Sajise, assistant professor at the UPLB-CEM, who presented the current status of socio-economic researches on climate change from published evidence-based literature and building on the study done by Briones in 2010; Adelaida M. Mamonong, project coordinator of the United Nations (UN) Habitat Philippines, who talked about the Cities and Climate Change Initiative (CCCI) project in Sorsogon City; Dr. Linda M. Peñalba, associate professor at the UPLB-CPAf, who presented several enabling laws that emphasize the role of LGUs as front liners in disaster risk reduction and management, community participation, disaster preparedness, creation/mobilization of calamity fund, creation of implementing structures, and vulnerability assessment; and Dr. Ma. Victoria Espaldon, dean of the UPLB School of Environmental Science and Management, represented by Rico Ancog, project development specialist of SEARCA, who presented the assessment of the vulnerability of farmers in Tanuan, Batangas to climate change. Dr. Mercedita A. Sombilla, manager of the SEARCA Research and Development Department, served as the master of ceremonies and moderator.

NAST President Acd. Emil Q. Javier called on to the scientific community to put forward robust analysis so that science-based decisions can be made by the Executive and Legislative branches of the government concerning this very important issue.

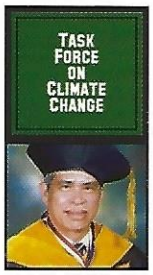


CLIMATE CHANGE SERIES: Climate Change and Water

16 November 2011; Traders Hotel Manila, Pasay City, Metro Manila
Lead Person: Academician Guillermo Q. Tabios III

The event's inputs came from Acd. Tabios; Ralph Allen Acierto, research fellow of the United Nations University - Institute of Sustainability and Peace and Rafaela Jane Delfino, research assistant at the World Agroforestry Centre (ICRAF) Philippines. After the roundtable discussion, the following courses of actions were recommended:
(1) there is a need for spatial and temporal downscaling results to regional or local climate characteristics;
(2) the government must put effort on defining the climate change scenarios which requires a concrete decision on what GCM is appropriate in the country;
(3) there must be a short-term and long-term study on climate change to assess or evaluate the effectiveness and impacts of specific climate change adaptation measures;

(4) a study on water management such as water supply or control of excess water should be conducted due to natural climate variabilities and uncertainties as well as uncertainties in ecosystem and socio-economic-political changes; and
(5) there is need for a continuous updating of climate change adaptation and mitigation measures.



CLIMATE CHANGE SERIES: Climate Change and Renewable Energy
22 November 2011; Hyatt Hotel Manila, City of Manila, Metro Manila
Lead Person: Academician Leonardo Q. Liongson

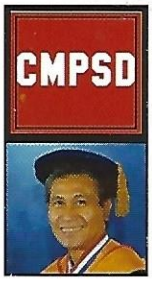
The discussion aimed to determine the tight and influencing interaction between climate change and energy. The inputs came from Professor Miguel T. Escoto of the Electrical and Electronics Engineering Institute, UP Diliman and Dr. Enrico C. Paringit, associate professor at the College of Engineering, UP Diliman. Dr. Raymond R. Tan, professor at the Department of Chemical Engineering, De La Salle University, was invited as reactor.

To further appreciate climate change and its relationship to renewable energy, the following courses of action were recommended:
(1) there is a need for a transition period and state on the mix of conventional energy with renewable while renewable technologies are under development;
(2) the selection of appropriate renewable energy technology must be in line with the sufficiency of the resource;
(3) use biomass residues rather than energy crops to address the demands of the current and future generation; and
(4) focus on technologies that have economics and social benefits to the Filipinos.

Advanced Energy Conservation Technologies
15 November 2011; Hyatt Hotel Manila, City of Manila, Metro Manila
Collaborators: DoST, Division VII of DoST-National Research Council of the Philippines, and AGHAM Party-List
Lead Person: Academician Alvin B. Culaba

The discussion aimed to come up with science-based solutions to the looming energy crisis in the country. Speakers were Freddy Goh, technical solutions manager of Philips Lumileds in Malaysia; Dr. Jose Azarcon Jr., senior energy expert of LAUDS Technologies Inc.; Engr. Myrna Campañano, division chief of the Lighting and Appliance Testing Laboratory of the Department of Energy; and Arch. Miguel Guerrero, founding member of the Green Architecture Advocacy Philippines (GAAP). Acd. Filemon A. Uriarte Jr. synthesized the discussions.

The recommendations were:
(1) awareness on LED must steadily be increased among the general public;
(2) conserve electricity through the use of alternative energy conservation technologies;
(3) energy standards and labelling programs must be established; and
(4) the term "sustainable" should be used instead of "green" for activities and technologies in conformity with nature.



Geological Hazards of SW Natib Volcano (Site of the Bataan Nuclear Power Plant)

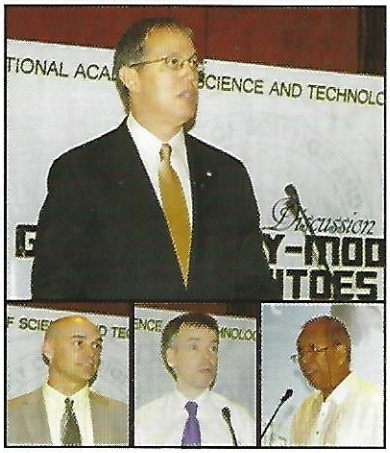
13 October 2011; Traders Hotel Manila, Pasay City, Metro Manila
Lead Person: Academician Fernando P. Siringan

The main speaker for the event was Dr. Alfredo Mahar Francisco A. Lagmay, professor at the National Institute of Geological Sciences, UP Diliman. He expounded on his paper entitled "*Geologic Hazards of SW Natib Volcano, Site of the Bataan Nuclear Power Plant (BNPP)*" which he co-authored with 15 other researchers. Invited experts who served as panel discussants were Dr. Alumanda M. dela Rosa, director of the DoST-Philippine Nuclear Research Institute; Dr. Sevillo D. David Jr., chief of the Lands Geological Survey, Mines and Geosciences Bureau, Department of Environment and Natural Resources (DENR); and Dr. Mario Aurelio, associate professor at the NIGS, UP Diliman.

Dr. Lagmay expressed his gratitude to the NAST PHL because the roundtable discussion served as a good venue for the healthy deliberation of studies done in connection with the BNPP.

Genetically Modified Mosquitoes and their Role in Dengue Control

12 September 2011; Hyatt Hotel Manila, City of Manila, Metro Manila
Lead Person: Academician Jaime C. Montoya



This discussion was conducted to explore possible strategies against dengue. Invited experts include: Dr. Anthony A. James, professor at the Department of Microbiology and Molecular Genetics and at the Department of Molecular Biology and Biochemistry of the University of California Irvine, who provided background information on the nature of dengue and the conventional methods of combating the disease, including the use of genetically modified (GM) mosquitoes; Dr. David M. Brown, project manager at the Department of Microbiology and Molecular Genetics of UC Irvine, who discussed the criteria for a successful testing and deployment of GMM products; and Dr. Luke Alphey, chief scientist of the Oxitec Ltd., a spin-off company of the University of Oxford, United Kingdom, who presented the technical side of developing the OX513A and OX3604C and similar strains, including their risk assessment and analysis with TPP features and project costs on the field use of GM mosquitoes. Panel discussants were Acd. Quintin L. Kintanar, chair of the NAST HSD; Dr. Nelia P. Salazar, biologist, epidemiologist and technical consultant of the DoH-Research Institute for Tropical Medicine; Dr. Reynaldo V. Ebora, director of the UPLB National Institute of Molecular Biology and Biotechnology; and Dr. Rosario Capeding, head of the Dengue Research Group of DoH-RITM.

To help understand the new technology on GM mosquitoes and help eliminate dengue cases in the Philippines, the following courses of action were recommended:
(1) This GM mosquito technology must be carefully studied, introduced and executed by experts;
(2) The challenge in dengue problem is to develop out-of-the-box solutions that should start at the grass roots level. All stakeholders should be included in the implementation of these solutions;
(3) The Biosafety Committee should look into the guidelines, requirements and regulatory system of the GMM technology;
(4) The scientific community should consider the availability of infrastructure and manpower for this technology. There must be an insect laboratory where experts can conduct experiments and enough number of personnel or a network of experts who will work on mosquitoes; and
(5) Communication and information dissemination are keys to public acceptance. There is a need to communicate the technology to the public to address all questions, major concerns and issues in the beginning of the implementation.

SCIENTIFIC LINKAGES FUNCTION

Among the mandates of the Academy is forging linkages with international academies of science, technology, engineering as well as with international and regional networks and local science organizations to promote closer scientific cooperation.

As of 2011, the Academy has maintained linkages with 29 science academies and institutions all over the world. These linkages have enabled the promotion of collaborative effort among Filipino and foreign scientists through the exchange scientists program. Access to research findings has been facilitated through the exchange of books and other scientific materials.

International Scientific Linkages
- Academy of Sciences Malaysia (ASM)
- Australian Academy of Sciences (AAS)
- Chinese Academy of Sciences (CAS)
- French Academy of Sciences (FAS)
- Indian National Science Academy (INSA)
- Korean Research Foundation (KRF)
- Malaysian Scientific Association (MSA)
- Pakistan Academy of Sciences (PAS)
- Royal Society of London (RSL)
- The Royal Swedish Academy of Sciences
- Turkish Academy of Sciences (TUBA)
- US National Academy of Sciences (US NAS)
- Korean Academy of Science and Technology (KAST)
- German Research Society (Deutshe Forschungsgemeinschaft or DFG)
- Philippine-American Academy of Science and Engineering (PAASE)

Affiliations to International Scientific Networks
- American Association for the Advancement of Sciences (AAAS)
- Association of Academies of Science and Engineering (AASA)
- ASEAN Council for Academies of Science and Engineering (ASEAN-CASE)
- Federation of Asian Scientific Academies and Societies (FASAS)
- Inter Academy Panel (IAP)
- Inter Academy Council (IAC)
- Inter Academy Medical Panel (IAMP)
- Third World Network of Scientific Organizations (TWNSO)

Local Scientific Linkages
- Center for Biomolecular Science Foundation, Inc. (CBMFS)
- Center for Fluid Dynamics (CFD)
- Outstanding Young Scientists, Inc. (OYSI)
- Philippine Association for the Advancement of Science (PhilAAS)

VISITING SCIENTIST

Dr. Varinderpal Singh
(15 November -05 December 2011)
NAST-INSA International Collaboration Exchange Program
Soil Scientist
Department of Soil Science
Punjab Agricultural University, Ludhiana,India

Dr. Varinderpal Singh is actively involved in the development of site-specific and need-based fertilizer nitrogen management strategies in the cereal crops. He has established fixed time variable nitrogen dose technology using leaf color chart (LCC) in rice. The LCC is a plastic, ruler-shaped strip containing four or more panels that range in color from yellowish green to dark green. It is an easy-to-use and inexpensive diagnostic tool for monitoring the relative greenness of a rice leaf as an indicator of the plant N status. He has also established need-based fertilizer nitrogen management technology in wheat using leaf color chart, chlorophyll meter and Green Seeker optical sensor. He is active in training extension specialists and farmers for the adoption of need-based fertilizer nitrogen management strategies in crops. He has published 12 peer-reviewed research papers and a review of article on said topics.

During his stay, Dr. Singh had a series of meeting with Filipino scientists who are involved in agricultural systems. He met with Professor Rodrigo Badayos and director Florentino Monsalud of the Agricultural Systems Cluster, Director Jose E. Hernandez of Institute of Plant Breeding, Crop Science Cluster and other scientists and students of the College of Agriculture, UP Los Baños. He also had fruitful talks with Dr. Roland Buresh and other scientists from the International Rice Research Institute (IRRI). He conducted a site visit to the Philippine Rice Research Institute (PhilRice) where he also presented his research work on nutrient management and met with Director Eufemio T. Rasco, Jr., Dr. Wilfredo Collado and other scientists.

CO-SPONSORED ACTIVITIES

OUTSTANDING YOUNG SCIENTISTS, INC.

The Outstanding Young Scientists, Inc. (OYSI) is a duly registered organization of the recipients of the Outstanding Young Scientist Award. The OYSI promotes awareness and appreciation of science towards developing a science culture; encourages and inspires young scientists to do innovative and relevant research; serves as a pool of experts and consultants in addressing current scientific and technical issues and concerns; and promotes the professional advancement of awardees by facilitating the sourcing of funds for research, and disseminating information on opportunities for their intellectual growth and career development.

On 04 March 2011, the OYSI was officially declared by the NAST as the PHILIPPINE ACADEMY OF YOUNG SCIENTISTS (a member of the Global Young Academy of the Inter-Academy Panel).

6th Annual Meeting and Scientific Convention
Theme: *Advancing Science and Technology Towards Achieving Agricultural Productivity, Sustainability, and Competitiveness*
12 July 2011, The Manila Hotel

The convention was opened with a welcome address from DoST Secretary Mario G. Montejo delivered by Assistant Secretary Ma. Lourdes P. Orijola. The keynote message was delivered by National Scientist Dolores A. Ramirez, Chair of the NAST Agricultural Sciences Division. Two plenary sessions followed, one by Dr. Candida Adalla on "Agribiotech Initiatives in the Philippines" and another by Dr. Leocadio Sebastian on "The Agrobiodiversity Framework for the Asia Pacific Region." In addition, several OYS members presented papers in three simultaneous technical sessions, one each on agriculture and life sciences, health and society and chemical, mathematical and engineering sciences.

The OYSI presented a special award to Academician Antonio Miguel Dans for his outstanding contributions and for bringing honor to the Society by being conferred with the rank and title of Academician by the NAST in 2010.

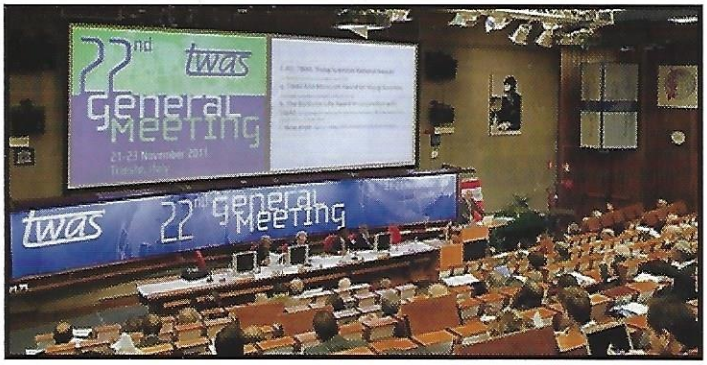
Since 2006, OYSI has been conducting the Annual Meeting and Convention to highlight the researches and work of its members and to keep abreast of developments in the research community in the country. It is also an opportunity for the members to renew and forge ties that could result to productive research collaboration among the members in support of the initiatives of the NAST.

3rd Regional Symposium and Workshop
11-12 November 2011, Puerto Princesa City, Palawan

The symposium and workshop was conducted with the theme "Harnessing Biodiversity for Sustainable and Resilient Ecosystems." The symposium was opened with a message from Governor Abraham Kahlil B. Mitra delivered by former Aborlan Mayor Celsa Adier.

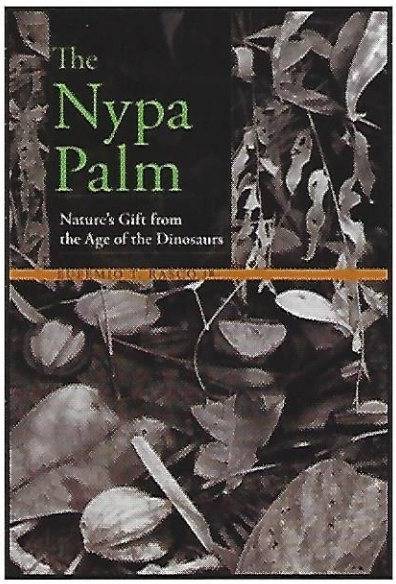
ATTENDANCE AT INTERNATIONAL CONFERENCES

Academician Evelyn Mae Tecson-Mendoza presented a paper on *Transgenic Crops in the Philippines: R & D, Applications and Challenges* in the BIT's Annual World Congress of Agricultural Biotechnology in Changchun, China on 28-30 October 2011.



Academician Emil Q. Javier represented the Academy at the 22nd TWAS General Meeting in Trieste, Italy on 21-23 November 2011. The renewal of the Memorandum of Agreement between NAST and TWAS was signed during the meeting.

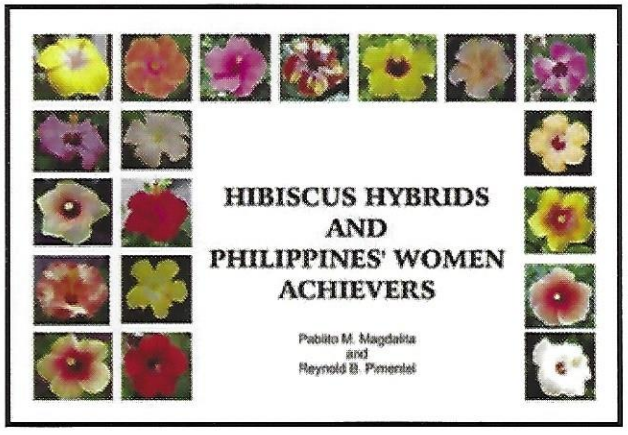
NEW PUBLICATIONS



The Nypa Palm
Nature's Gift from the Age of Dinosaurs
Academician Eufemio T. Rasco Jr.

Up until the early part of the 20th century, the nipa palm (*Nypa fruticans*) was in fact, a veritable "superstar" in the Philippines, and then considered "the world's cheapest source of alcohol." But like an aging superstar, nipa's popularity soon died down, eclipsed by that of sugarcane and cassava.

Why and how did nipa suffer such a fate? Was it fair? Does nipa have a role in modern times? These are just some of the questions that this book tries to answer. Written in a style that is accessible to the ordinary reader with little science background, the book provides a comprehensive review of the state of knowledge about one of the Philippine's most useful but underappreciated palm species.



Hibiscus Hybrids and Philippines' Women Achievers
Pablito M. Magdalita and Reynold B. Pimentel

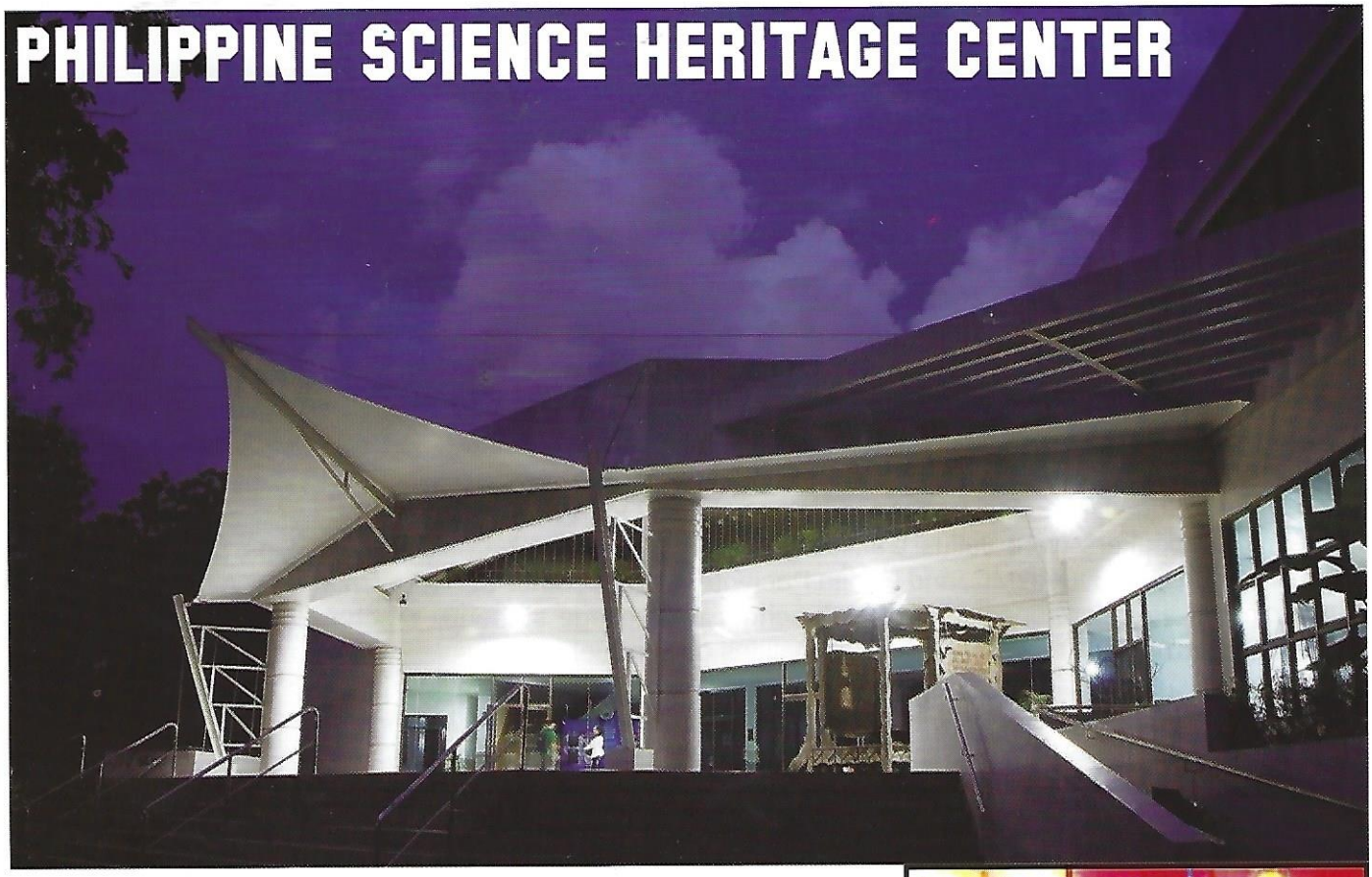
The book on "Hibiscus Hybrids and Philippines' Women Achievers" is a humble contribution of the authors to the Centennial Celebration of UP and to the NAST Agricultural Sciences Division.

GENDER AND DEVELOPMENT

As an activity of the Gender and Development (GAD) program of NAST, a *Science Information Forum on Changing Epidemiology of Population at Risk of HIV* was held on 16 November 2011 at the Traders Hotel Manila, Roxas Boulevard, Pasay City.

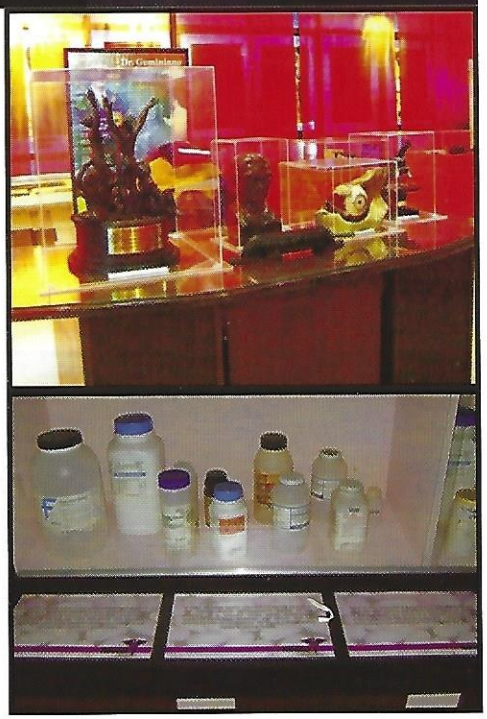
Dr. Edsel Maurice T. Salvaña, OYS 2010, of the Institute of Molecular Biology and Biotechnology, Institutes of Health, UP Manila served as the main speaker. He discussed the HIV prevalence rates in the Philippines and the unprecedented increase in recent years which indicate that a large epidemic is being foreseen. Multiple factors including poor condom use, increasing rates of casual sex, and misinformation, are ingredients for the widespread emergence of HIV. Financial consequences will be significant since the Philippine economy is increasingly driven by industries employing young people who are at risk, according to Dr. Salvaña.

PHILIPPINE SCIENCE HERITAGE CENTER



The Philippine Science Heritage Center was created under Republic Act 9107 to be the country's main repository of the contributions, achievements, and accomplishments of Filipino scientists in the field of science and technology. The Salinlahi Symposium Series, Meet Your Scientist and other similar programs are conducted to promote science culture, popularize and bring scientists to the realm of the general public, encourage young people to take science-based careers and circulate the richness of Philippine scientific heritage.

Under Phase II of the DoST-GIA project "Improvement of Exhibits and Facilities of the Philippine Science Heritage Center and Its Services", the galleries were modified to adjust to the ever changing needs of the students who visit the center to learn and gain new knowledge in the field of S&T.



MEET YOUR SCIENTIST

• On 17 March 2011, 57 high school students attended the activity at the PSHC audio visual room as part of their science field trip. Another MYS was conducted for the students of St. Jude Catholic School Manila. Through the activity, students were given an opportunity to be up close and personal with the people who have strong advocacy in science. This also served as a platform for creating awareness and appreciation on possible career options in science and technology for the students.

SALINLAHI SYMPOSIUM SERIES

TOPIC: The Role of Science and Technology in Natural Disaster Management

1. Regent Hotel, Naga City, Camarines Sur 17 February 2011

A total of 192 participants including the staff graced the event. Speakers were Dr. Esperanza O. Cayanan, Chief of Climatology and Agrometeorology at the Research and Development Section of PAGASA, who discussed the science of weather forecasting; Eduardo Laguerta, Resident Volcanologist of PHIVOLCS Legazpi City lectured on earthquake and its hazards; and Patrocinio S. Felizmenio, director of the Camarines Sur Science and Technology Center, who gave a brief presentation on DoST and its programs.

2. Bacolod City, Negros Occidental, 31 August 2011

Resource speakers were Ramil Atando, DoST-PHIVOLCS; Niño Relos, DoST-PAGASA; and Aletha Nogra, Office of Civil Defense. Angelli Cortez of DoST-SEI presented the DoST scholarships program.

3. Benguet State University, La Trinidad, Benguet, 27 October 2011

Resource speakers were Julius Galdiano, OIC, PHIVOLCS Sinait Station in Ilocos Sur, Olive Luces, Chairperson CAR-NDRRMC, and Renito Paciente, Asst. Weather Services Chief, PAGASA. A total of 169 participants attended, consisting of high school and college students, teachers, and local government unit representatives from different municipalities of Benguet.

TOPIC: The Role of Science and Technology in Climate Change Adaptation

1. Grand Regal Hotel, Davao City, 24 November 2011

The resource speakers were Emma D. Ares, PAGASA Weather Specialist; Dr. Carla B. Dimalanta, Professor, NIGS, UP Diliman; and Dr. Mudjekeewis D. Santos, OIC, Marine Fisheries Research Division, NFRDI, Department of Agriculture. Angelli Cortez from DoST-SEI gave a talk about the DoST scholarship programs.

5TH ANNUAL WORKSHOP ON UNDERSTANDING MODERN BIOTECHNOLOGY AND BIOSAFETY FOR SCIENCE TEACHERS AND TRAINERS

This was held on 01-02 June 2011. Two workshops were participated by more than 200 science teachers and trainers from the National Capital Region and nearby provinces.

PARTICIPATION IN ACTIVITIES OF S&T CENTERS AND MUSEUMS

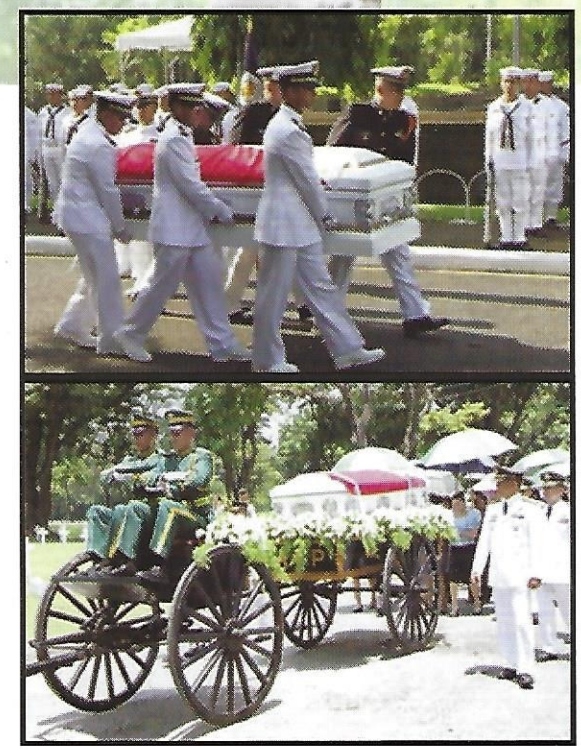
NAST Director IV Luningning Samarita and Planning Officer III Reihvelle Perez
* Annual Conference of the Association of Science and Technology Centers (ASTC) in Baltimore, Maryland, USA, on 14-19 October 2013.

* Annual Conference of the Asia-Pacific Network of Science and Technology Centres (ASPAC) in Guangdong Science Center (GDSC), Guangzhou, China on 18-21 May 2011

Mary Ann Escote and Ferdinand Gutlay
* International Museum Day Celebrations (Theme: *Museum and Memory*)
Organized by the SubCommittee on S&T Museums of the National Commission for Culture and the Arts
16-22 May 2011
Activities:
* Focus Group Discussion on Museum and Exhibit Practices (Nido Fortified Science Discovery Center, Pasay City, 19 May 2011)
* Workshop for the Ecology and Conservation of the Philippine Tropical Forests and Coral Reefs (Philippine Science Centrum, Marikina City, 20 May 2011)
* Exhibits Day (Pasay City, 21 May 2011)

IN MEMORIAM

NATIONAL SCIENTIST FE V. DEL MUNDO

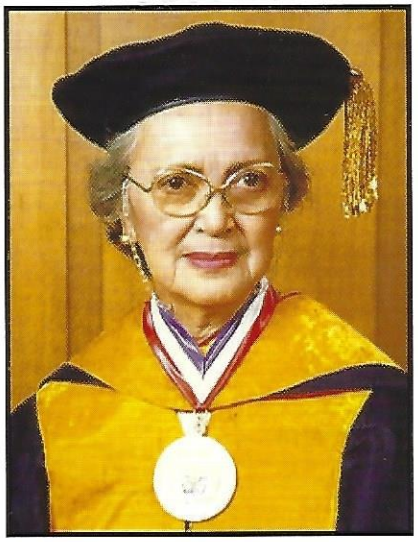


The country's distinguished Pediatrician and National Scientist, Dr. Fe V. Del Mundo passed away on 06 August 2011 at the age of 99. The NAST PHL joined the scientific community in mourning the demise of National Scientist del Mundo.

Her most significant researches dealt mainly with viral diseases, particularly those on polio-myelitis, rubeola, rubella, and varicella. She also invented two devices to help people in the rural communities. In 1973, she invented a simple inexpensive incubator made of bamboo that can be easily made for rural communities. She also developed an improvised bamboo radiant warmer and a photo therapy device that could cure babies with jaundice. These inventions reflected her interest in rural health, particularly those in underserved or unreached rural areas. She also formulated strategies to incorporate the ways of *hilot* or traditional midwife to the family planning and birth attending framework of health services in rural communities. In 1957, Dr. Del Mundo established the Children's Memorial Hospital (later renamed Dr. Fe Del Mundo Medical Center). To do this, Dr. Del Mundo sold her own home and personal effects. The hospital was expanded in 1966 with the establishment of an Institute of Maternal and Child Health, the first of its kind in Asia. The said hospital continues to admit thousands of children requiring quality medical help.

A woman of many firsts, Dr. Del Mundo was the first female and first Asian to be enrolled in Pediatrics at the prestigious all-male Harvard Medical School (1935-1940) as a Philippine Commonwealth scholar. She was also the first woman to head a government general hospital in the Philippines when she was appointed as director of the Manila Children's hospital (later renamed Dr. Jose R. Reyes Memorial Hospital) in 1943. She was also the first Filipino diplomate of the American Board of Pediatrics (1947), which introduced the Filipino women and physicians to the world. She was also the first Asian president of the Medical Women's International Association, holding this post from 1962 to 1966. In 1967, she became an Emeritus Fellow of the American Academy of Pediatrics. In the Philippines, she was a pioneering force in child health care. She was the founder and first woman president of the Philippine Pediatric Society, wherein she served from 1952 to 1955. She likewise founded the Philippine Medical Women's Association and became its first president. In 1972, she became the first woman president of the Philippine Medical Association, a first in the association's decade-long history. More than a decade after, she became the first Philippine delegate to the World Academy of Science in Trieste, Italy (1993).

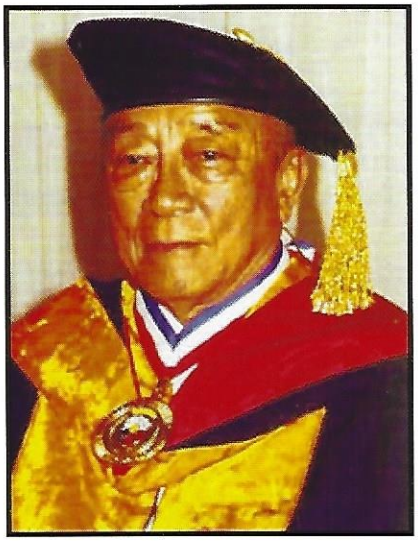
She was admitted to the National Academy of Science and Technology, Philippines in 1979, in recognition of her important contributions to science and the community as a pediatrician, teacher, researcher, humanitarian, and grand dame of Philippine Pediatrics and medicine. In 1980, Dr. Del Mundo became the first woman National Scientist when she was conferred the Rank and Title of National Scientist, the highest honor that the Philippine Government can bestow on a Filipino scientist for her outstanding contributions to science and technology.



ACADEMICIAN CARMEN LL. INTENGAN

Academician Carmen Ll. Intengan, a foremost Filipino authority in nutrition in the country, died on 23 January 2011, at the age of 95.

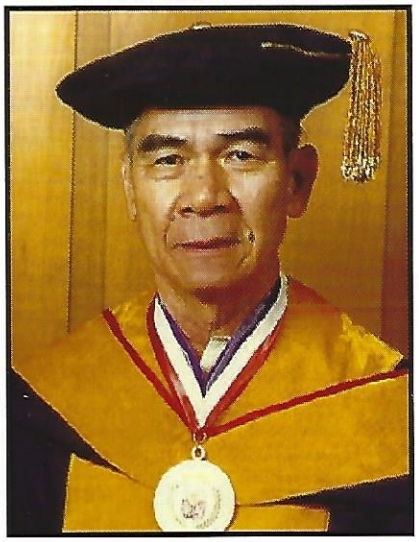
Acd. Intengan was known for her tireless devotion on the analysis of nutritional values of foodstuffs in the Philippines and their effects upon the human body, producing many scholarly works and papers of far-reaching values in upgrading public health, improving the nutrition of her fellowmen, and in creating awareness in the importance of good nutrition. Her valuable contributions to nation building covered continued researches and surveys in the field of nutrition results of which have been utilized in nutrition education for better health in the schools and community extension programs. She initiated the setup of nutrition laboratories at the Institute of Nutrition, now Food and Nutrition Research Institute (FNRI) of the DoST, to strengthen and extend its activities.



ACADEMICIAN LEOPOLDO S. CASTILLO

Academician Leopoldo S. Castillo, a renowned Filipino expert in the field of animal science joined his Creator on 15 July 2011 at the age of 89.

His outstanding pioneering researches in animal nutrition, particularly on the feeding values of indigenous and non-conventional feedstuffs such as root crops as sources of energy to replace corn in animal diets, other leaf meals to replace ipil-ipil leaf which contains the toxic constituent mimosine, and winged bean seed for the imported soybean oil meal for poultry and livestock had been recognized by various awarding bodies. His studies on feedstuff culminated in the publication of "Nutrient Composition of Some Philippine Feedstuffs", which became one of the most useful references in feed formulation which paved the way for the accelerated development of small and medium feed millers in the country. His researches on the use of indigenous materials for animal nutrition have been adopted not only in the Philippines but also in many developing countries all over the world.



ACADEMICIAN EDITO G. GARCIA

Academician Edito G. Garcia, an outstanding Filipino expert on immunology and parasitic infections passed away on 15 August 2011 at the age of 89.

He is recognized for his significant contributions to the body of knowledge on tropical parasites, in particular, *Schistosomiasis japonica*. With a team of co-workers, he implemented surveys that established the epidemiology of the *Schistosomiasis* disease in the Philippines. He led experimentations that improved diagnostic testing and made it more reliable. Academician Garcia tirelessly worked on the development of a vaccine against this parasitic disease, which up to this time continues to elude scientists.

THE ACADEMY MEMBERS

AGRICULTURAL SCIENCES DIVISION

NATIONAL SCIENTIST DOLORES A. RAMIREZ
Significant Positions Held
• Chair, NAST Agricultural Sciences Division
• Treasurer, NAST-Philippine Science Heritage Foundation, Inc.
• Chair, Board of Judges, NAST Talent Search for Young Scientists
• Member, Committee for the TWAS Award for Agricultural Sciences
• Chair, UPLB Committee on 2-year pre-baccalaureate program
• Member, UPLB Committees on Professorial Chair and Professorial Chair Oversight
• Member, DoST Biosafety Committee

ACADEMICIAN RAMON C. BARBA continues to advise projects on fruit production, particularly mango, tissue culture of horticulture crops and serves as a consultant in an agricultural and environmental consultancy firm.

ACADEMICIAN LIBERTADO C. CRUZ
Significant Positions Held
• Executive Director, Philippine Carabao Center
• Member, Technical Working Group, Philippines-India Technical Collaboration in Agriculture and Fisheries
• Member, Technical Working Group, Philippines-Brazil Technical Collaboration in Agriculture and Development
• Member, Technical Working Group, Philippines-Taiwan (MECO-TECO) Technical Collaboration in Agriculture and Fisheries with focus on Biotechnology
• Member, DA Biotech Program Technical Committee

On-going Researches
• Production of High-Genetics Dairy Water Buffaloes through the use of reproductive biotechniques (PCARRD-DoST funded) in collaboration with Frigorifico Allana Limited, India
• Marker-Assisted selection of dairy buffaloes (BAR/DA-Biotech funded project)
• Cryobanking of animal genetic resources (PL480 funded)
• Cryopreservation by Vitrification of Buffalo Oocytes by Slow Freezing and Vitrification Technique
• Ultra Rapid Vitrification of In-Vitro Mature Buffalo Oocytes by Minimum Volume Cooling Method
• Cryopreservation of Buffalo Embryos by Conventional Controlled-Rate Freezing: Comparison on the Effect of Glycerol and Ethulene Glucol-Based Protocols on Post-Warming In Vitro and In Vivo Development
• Enhancing Cryo-viability of In Vivo-Derived Goat Embryos by Optimizing Embryonic Stage and In-vitro Culture on Morula to Blastocyst Before Freezing

ACADEMICIAN ROMULO G. DAVIDE initiated and spearheaded, as Program Leader, the Corn-Based Farmer-Scientist RDE Training Program, which was adopted nationwide by the government under Executive Order 710, series of 2008. The program has reached the Mangyans in Mansalay, Oriental Mindoro and the Blaan of Alabel, Sarangani Province.

CORRESPONDING MEMBER LIWAYWAY M. ENGLE is a geneticist and former head of the Genetic Resources and Seed Unit of the Asian Vegetable Research and Development Center (AVRDC) - The World Vegetable Center in Taiwan.

ACADEMICIAN RAFAEL D. GUERRERO III
Significant Positions Held
• Chair, Board of Judges, Outstanding Aquatic Environment Projects, PAWB, Department of Environment

and Natural Resources
• Secretary, Philippine Fisheries Association, Inc.
• Columnist, Agriculture Magazine of the Manila Bulletin and MARID Agribusiness Digest
• Member, Board of Judges, Gawad-Saka Awards for Fisheries, DA
• Member, Editorial Board, Asian Life Sciences Journal of Biology
• Reviewer, Journal of Applied Soil Biology

On-going Researches
• Use of Vermicompost as Supplemental Feed for Broilers
• Production of Organic Tilapia (*Oreochromis niloticus*) in Freshwater Ponds with Vermicompost

NATIONAL SCIENTIST RICARDO M. LANTICAN
Significant Positions Held
• Member, NAST-TWAS (Third World Academy of Sciences) Award Committee for the Philippines
• Co-chair, NAST Scientific Publications Committee
• Member, Board of Judges, Outstanding Science Administrator Award (D.L. Umali Medal)
• Professor Emeritus, UP Los Baños
• Chair of 3 UPLB Committees that (1) assist the Chancellor in the choice of retiring faculty staff for appointment as Professor Emeritus; (2) assist the Chancellor in the choice of Professorial Chair Awards for UPLB staff; and (3) screen recipient faculty staff for Academic Development Fund assistance
• Member, STRP (Science and Technology/Review Panel) for the BPI and NCBP
• Member, Plant Variety Protection Board of the Philippines

Publications
• LANTICAN, R.M. 2011. Changing Views about the Universe. The Manila Bulletin (March 6 and March 13 issues)
• LANTICAN, R.M. 2011. The Anomalous Soybean Paradox. Malaya. (Sept 23 issue)
• LANTICAN, R.M. 2011. How to Break the Cycle of Food Import Dependence. Malaya. (Sept 23 issue)
• LANTICAN, R.M. 2011. Continuing Engagement of Alumni in University Activities. Horizon (The Official Newsletter of UP Los Baños)

ACADEMICIAN RODEL D. LASCO
Significant Positions Held
• Philippines Coordinator, World Agroforestry Centre (ICRAF)
• Affiliate Professor, University of the Philippines Los Baños

Publications
• LASCO, R.D., F.B. Pulhin, L.A. Bugayong, and M.D. Mendoza. 2011. An assessment of potential benefits to small holders of REDD+ components in the Philippines. Annals of Tropical Research, 33: 31-48.
• LASCO, R.D., C.M.D. Habito, R.J.P. Delfino, F.B. Pulhin & R.N. Concepcion. 2011. Climate Change Adaptation for Smallholder Farmers in Southeast Asia. World Agroforestry Centre, Philippines. 65p.
• Neufeldt, H., I. van de Sand, J. Dietz, M.H. Hoang, T. Yatich, R. LASCO and M. van Noordwijk. 2011. Section I. Climate change, climate variability and adaptation options. In How trees and people can co-adapt to climate change: Reducing vulnerability through multifunctional agroforestry landscapes. M. van Noordwijk, M.H. Hoang, H. Neufeldt, I. Öborn & T. Yatich (eds.) Nairobi: World Agroforestry Centre (ICRAF).
• Contributing Author to "Manton MJ, Heath L, Salinger J and Stevenson LA. 2011. Climate in Asia and the Pacific: A Synthesis of APN Activities. Asia-Pacific Network for Global Change Research. pp78".

ACADEMICIAN EUFEMIO T. RASCO, JR.
Significant Positions Held
• Executive Director, Philippine Rice Research Institute (PhilRice)
• Editor-in-Chief of Banwa (Journal of UP Mindanao)

On-going Researches
- Propagation of *Nepenthes truncata*
- Weed management in a banana plantation
- Biology of nipa and its potential for alcohol production

NATIONAL SCIENTIST TEODULO M. TOPACIO, JR. chairs the National Advisory Committee for Animal Disease Control and Emergency (recognized by the World Organization for Animal Health, OIE) to the DA Secretary. NS Topacio is currently teaching the graduating interns of the UP College of Veterinary Medicine Veterinary Teaching Hospital at UP Diliman and UP Los Baños Stations. He is actively participating in the rabies vaccination programs of dogs and cats in Quezon City, in coordination with the Rotary Club of Quezon City Circle and the TMT Foundation.

NATIONAL SCIENTIST BENITO S. VERGARA served as project leader of the selection of tropical crops with industrial potential funded by Mama Sita Foundation, Senator Ramon Magsaysay and the PCAARRD-DoST.

CORRESPONDING MEMBER REYNALDO L. VILLAREAL serves as the coordinator for Asia Transnational Learning Program of Cornell University, which established the Cornell University distance learning modules for Biotechnology in the UP Open University and the Leyte State University. He is an Adjunct Professor of Plant Breeding and International Agriculture at the College of Agriculture and Life Sciences, Cornell University, Ithaca, New York, USA. He is also a retired principal scientist of the CIMMYT Wheat Program in Mexico. He is also a consultant on rice and wheat breeding in Asia, Mexico and Middle East.

ACADEMICIAN RUBEN L. VILLAREAL continues the NAST advocacy on the improvement of science and math education by giving lectures all over the country.
Significant Positions Held
- Co-focal person, RTD on Further Intensification of Agriculture: A must to meet the challenges of agricultural productivity, sustainability and competitiveness, NAST
- Chair, 33rd Annual Scientific Meeting (ASM) Resolutions Committee, NAST
- Member, Board of Judges, Outstanding R&D Award (Eduardo Quisumbing Medal for Basic Research and Julian Banzon Medal for Applied Research)
- Member, DoST Scientific Career System
- Consultant, Crop Science Cluster, UPLB College of Agriculture
- NAST Focal Person, Building a Science Culture in Laguna with emphasis on Math
- Member, Asia Rice Foundation, Inc.
- Member, UPSILON Foundation, Inc.
- Member, UPLB Committee on Naming of Streets and Buildings
- Member, PARRFI Board of Trustees
- Member, UPLB College of Agriculture Alumni Association Board
- Member, UPLB Alumni Association Board
- Member, Dioscoro L. Umali Foundation, Inc.
- Chair, Resource Generation Committee, Gawad Kalinga Los Baños Ville

BIOLOGICAL SCIENCES DIVISION

ACADEMICIAN EMIL Q. JAVIER
Significant Positions Held
- President, NAST
- Member, Science Career Council (Civil Service/DoST)
- Member, DA Secretary's Technical Advisory Group (DA STAG)
- Member, Board of Directors, Centro Escolar University (CEU)
- Member, Board of Directors, Del Monte Pacific Limited

• Chair, Asia Rice Foundation
• Board Member, International Service for the Acquisition of Agri-Biotechnology Applications (ISAAA), South East Asia Center-Philippines
• Head Advisor, Biotech Coalition of the Philippines
• Member, Board of Directors, Nutrition Center of the Philippines
• Member, Board of Directors, Philippine Foundation for Science and Technology
• Board Member, UP Los Baños Alumni Association, Inc.
• Member, Board of Trustees, Philippine Society of Youth Science Clubs (PSYSC)
• Chair, SATRE, Foundation, Inc.
• Vice President, D.L. Umali Foundation, Inc.
• Member, Board of Trustees, Asia Rice Foundation, Inc. (ARF)
• President, AGHAM Party list
• Member, D.L. Umali Award Search Committee

ACADEMICIAN ANGEL C. ALCALA

Significant Positions Held

• Member, National Climate Change Commission
• Co-Chairman, NAST Committee on Climate Change
• Chair, Board of Judges, NAST-Hugh Greenwood Environmental Science Award
• Member, Board of Judges, NAST Outstanding Research and Development Award
• Director, Silliman University Angelo King Center for Research and Environmental Management
• Chairman, CHEd National Biodiversity and Database Program
• Member, National Agriculture and Fisheries Education (NAFES) Board, CHEd
• Biodiversity Research Consultant, DENR-ICRMP Project : A National ICRM & Marine Biodiversity Research Agenda for the Philippines 2010-2012
• Chairman, Commission on Higher Education (CHED)- Technical Working Group on the Accreditation of Higher Education Institutions' Research Journals
• Member, Group of Experts, Ad Hoc Working Group of the Whole (AHWGW/GoE), for the United Nations Regular Process for Global Reporting and Assessment of the State of the Marine Environment, UNEP, UN Headquarters, New York, USA (2008-2012)

Publications

• Siler C.D., Diesmos A.C., Alcala A.C., Brown R.M. 2011. Phylogeny of Philippine slender skinks (Scincidae: Brachymeles) reveals underestimated species diversity, complex biogeographical relationships, and cryptic patterns of lineage diversification. Molecular Phylogenetics and Evolution 59(1):53-65.
• Bucol A.A., Averia L.T., Alcala A.C., and Cordova L. 2011. New records of birds for the Gigantes Islands, Iloilo Province, Philippines. Forktail 27 (2011):7-11.
• Brown R.M., Siler C.D., Oliveros C.H., Diesmos A.C. and Alcala A.C. 2011. A New gekko from Sibuyan Island, central Philippines. Herpetologica 67(4):460–476.
• Bucol A.A., Alcala A.C., Averia L.T., Alcala E.L. and Alcala M.L.R. 2011. Checklist of the herpetofauna of Siquijor Island, Philippines. The Philippine Scientist 48(2011):100-122.
• Siler, C.D., Fuiten, A.M., Jones, R.M., Alcala, A.C., Brown, R.M. 2011. Phylogeny-based species delimitation in Philippine slender skinks (Reptilia: Squamata: Scincidae) II: Taxonomic revision of Brachymeles samarensis and description of five new species. Herpetological Monographs (25) pp. 76-112.
• Alcala A.C., Bucol A.A., Diesmos A.A. and Brown R.M. 2012. Vulnerability of Philippine amphibians to climate change. Philippine Journal of Science 141 (1): 77-87.
• Lim T.M.S., Alcala A.C. and Bucol A.A. 2012. Progress in the Conservation of theTokay Gecko in the Philippines. Traffic Bulletin 24(1):7.
• Siler, C.D., Swab, J.C., Oliveros, C.H., Diesmos, A.C., Averia, L., Alcala, A.C., Brown, R.M. 2012. Amphibians and reptiles, Romblon Island group, central Philippines: Comprehensive herpetofaunal inventory. Check List 8 (3) pp. 443-462.
• Brown R.M.,.Diesmos A.C. Sanguila M.B., Siler C.D., Diesmos M.L.D. and Alcala A.C. 2012. Amphibian

conservation in the Philippines. Froglog 20(5):40-43.
• Alcala A.C.,Bucol A.A., Alcala E.L. and Brown R.M. 2012. Decreasing population size of the Philippine Limestone Frog, Platymantis insulatus. Froglog 20(5):44-45.
• Bucol AA, Alcala EL, and Alcala AC. 2012. The goby Trypauchenopsis intermedia Volz 1903 (Gobiidae) from the Philippines. Philippine Scientist 49(1):96-100.

On-going Researches
• Ecology of River Systems
• Establishment of ICRM Centers in Region V, VII and XI - DENR ICRMP Project with Silliman University 2010-2012
• Larval Dispersal and Connectivity of Marine Reserves in the Bohol Sea
• Effects of Climate Change on Fish Larvae, Coral Reefs, Mangroves and How Protection can Decrease their Vulnerability to Ocean Warming, Ocean Acidity, etc.
• Vertebrate Biodiversity of Siargao Island

Scientific/Technological Conferences/Seminars attended as Speaker with Papers/Lectures Presented
• Keynote Speaker, "Environmental Research and Higher Education ". Ritsumeikan Asia Pacific University Graduate Program for Environmental Opinion Leaders for the Asia Pacific (ENVOL) Program, Ritsumeikan Asia Pacific University, Beppu, Japan. January 22, 2011.
• Presented Conference Overview as Chairman, Steering Committee, International Conference on Biodiversity and Climate Change, with the theme: "Conserving Biodiversity Admidst Climate Change" . Philippine International Convention Center, Roxas Boulevard, Manila. February 1-3, 2011.
• Presented "Marine Environmental Protection" during the Asian Regional Forum (ARF) Seminar on the United Nations Convention on the Law of the Sea (UNCLOS), Mandarin Oriental Hotel. Manila, Philippines, March 8-9, 2011.
• Presented "Marine Biodiversity." 60th Anniversary and Convention of the Philippine Association for the Advancement of Science (PhilAAS), Centennial Hall, Manila Hotel, Manila. (Also awarding of the Gregorio Y. Zara Award for Basic Science Research), September 13, 2011.

Recognitions Received
• Leadership Award, Cebu Normal University Centennial Awards, Cebu Normal University, Cebu City, 27 June 2011
• Gregorio Y. Zara Award for Basic Science Research, Philippine Association for the Advancement of Science, Inc. (PhilAAS), 13 September 2011

ACADEMICIAN RHODORA V. AZANZA
Significant Positions Held
• Professor 12 and Scientist II (UP-MSI)
• Chair, CHEd Environmental Science Committee
• Member, Technical Panel on Science and Mathematics, CHEd
• Member, Special Technical Committee on Natural Sciences, DoST Scientific Career System
• Member, National Committee on Biosafety, DoST

Publications
• Baula, I.U., R.V. AZANZA, Y. Fukuyo and F.P. Siringan. 2011. Dinoflagellate cyst composition, abundance and horizontal distribution in Bolinao, Pangasinan, Northern Philippines. Harmful Algae 11, pp. 33-44.
• Santos, M.A.G. and R.V. AZANZA. 2011. Responses of Pyrodinium bahamanse var. compressum and associated cultivable bacteria to antibiotic treatment. Journal of Applied Phycology. DOI 10.1007/s10811-011-9701-4.
• AZANZA, R.V. 2011. Hypoxia, anoxia in fish kills. Manila Bulletin – Educators Speak. June 26, 2011.

Completed Researches

• Ecology and Oceanography of Harmful Algal Blooms in the Philippines (as Program Leader)
  - Biodiversity/Genetic Diversity of Selected HAB-Forming Species in the Philippines
  - Microbial Community (HAB) Species and Associated Bacteria Composition and Succession
  - Toxinology and Toxicology of Philippine Harmful Algal Blooms (HAB)/Species
  - Fish Kills, Algal Blooms and Eutrophication in the Tropics
  - Eutrophication, climate and algal blooms in the tropics
  - Historical sedimentation rate and radiometric fingerprinting of suspended-sediment in selected HAB areas
  - Stratification and Algal blooms in the tropics
  - Harmful algal bloom mitigation in the tropics

On-going Researches

• Development of Semi-Commercial Scale of Pyrodinium for Neosaxitoxin and Saxitoxin Production
• Extent Transfer of Alien Invasive Organisms in South/Southeast Asia Region by Shipping
• Program B: New and Improved Kappaphycus Varieties/Strains for Farming, Project 1: Strain Development/ Hybridization in Kappaphycus Utilizing Spores and Tissues

Scientific/Technological Conferences/Seminars attended as Speaker with Papers/Lectures Presented

• "Philippine Harmful Algal Blooms: Recent Progress and Concerns in Research and Management." IOC/ WESTPAC 8th International Scientific Symposium. Paradise Hotel, Busan, Republic of Korea, March 28-31, 2011.
• "*Pyrodinium* Blooms and their Impacts in Southeast Asia 1979-2011: East Asia HAB 7 Meeting, Bohol Tropics Resort, Tagbilaran City, Bohol, Philippines. November 17-19, 2011.
• "Understanding Harmful Algal Blooms Amidst Spatial and Temporal Variability in the Field." East Asia HAB 7 Meeting, Bohol Tropics Resort, Tagbilaran City, Bohol, Philippines. November 17-19, 2011.
• "Examining the Biological and Physical Processes Leading to the Bloom Formation of *Pyrodinium bahamanse* var. *compressum* In Sorsogon Bay using an Integrated Model." East Asia HAB 7 Meeting, Bohol Tropics Resort, Tagbilaran City, Bohol, Philippines. November 17-19, 2011.
• "Partial Sequencing of the *Pyrodinium bahamanse* var. *compressum* (meta) Genome using the 454 Next Generation Sequencing Technology: Preliminary Observations." East Asia HAB 7 Meeting, Bohol Tropics Resort, Tagbilaran City, Bohol, Philippines. November 17-19, 2011.
• "A Proteomic Approach to Study Algal Strains/Species Associated with Harmful Algal Blooms in the Philippines." East Asia HAB 7 Meeting, Bohol Tropics Resort, Tagbilaran City, Bohol, Philippines. November 17-19, 2011.
• "Philippine Seafood Poisoning Cases Confirmed by Clinical Sample Analyses." East Asia HAB 7 Meeting, Bohol Tropics Resort, Tagbilaran City, Bohol, Philippines. November 17-19, 2011.
• "Use of Clay Against HABs in the Philippines: Its Efficiency and Effects on Non-Target Organisms." East Asia HAB 7 Meeting, Bohol Tropics Resort, Tagbilaran City, Bohol, Philippines. November 17-19, 2011.
• "Seasonal Changes in the Phytoplankton in Tropical Marine Embayments." International Academic Workshop of South China Sea Oceanography. Qingdao, China. December 12-13, 2011.

Honors and Recognition Received

• UP Scientist II, Productivity Award

NATIONAL SCIENTIST CLARE R. BALTAZAR serves as honorary adviser to the Philippine Agricultural Scientist Journal.

ACADEMICIAN FILOMENA F. CAMPOS continues her advocacy on gender issues. She is also an active member of the Third World Network of Scientific Organizations (TWNSO).

ACADEMICIAN VERONICA F. CHAN

Significant Positions Held

- Professor Emeritus, College of Public Health, UP Manila
- Professor Emeritus, School of Medicine, Emilio Aguinaldo College (EAC)
- Professor of Medicinal Virology, UST Graduate School
- Associate Dean for Basic Sciences, School of Medicine, EAC
- College Secretary, School of Medicine, EAC
- Chairman, Department of Microbiology and Parasitology, School of Medicine, EAC

ACADEMICIAN GISELA P. CONCEPCION is a professor at the Marine Science Institute, UP DIliman where she teaches graduate courses and conducts marine natural products and other biomedical research.

Significant Positions Held

- Chair, NAST Website Committee
- President, Philippine-American Association for the Advancement of Science and Engineering (PAAASE)
- Co-founder and Co-editor, Philippine Science Letters
- Editor, Star Science

ACADEMICIAN SALCEDO L. EDUARDO

Significant Positions Held

- Curator (Parasitic Helminths), UPLB Museum of Natural History
- Faculty-in-Charge, Parasite Collection Center, College of Veterinary Medicine, UPLB
- Member, UPLB Academic Personnel Board
- Member, Editorial Board, Journal of Veterinary Science
- Member, Editorial Board, Philippine Agricultural Scientist
- Member, Editorial Board, Philippine Journal of Veterinary and Animal Sciences

Publications

- Desamero, M.J.M. & S.L. EDUARDO. 2011. Some ectoparasites from Philippine owls (Strigiformes: Strigidae) with description of a new louse species, *Kurodaia (Conciella) theresamunditae* Desamero & Eduardo (Amblycera: Menoponidae). Philippine Journal of Veterinary Medicine, 48(1); 27-34.
- Zabat, A.G. & S.L. EDUARDO. 2011. Some ectoparasites of the common Rousette bat (*Rousettus amplexicaudatus* Geofroy, 1810) (Mammalia: Chiroptera: Pteropodidae) from colonies in Batangas and Rizal, Philippines. Philippine Journal of Veterinary Medicine, 48(1); 53-56.
- EDUARDO, S.L. & F.D. Villa. 2011. A new species of *Procyrnea* Chabaud 1975 (Nematoda: Habronematidae) and redescription of two chewing lice (Mallophaga) from the Palawan hill myna, *Gracula religiosa palawanensis* (Passeriformes: Sturnidae), Philippines. Philippine Journal of Veterinary Medicine, 48(2); 77-85.

Completed Research

- *Pseudomenopon micosai* Eduardo, n. sp. and Two Other Previously Known Species of the Genus *Pseudomenopon* Mjöberg, 1910 (Mallophaga: Amblycera: Menoponidae) From Philippine Rallidae (Aves: Gruiformes).

On-going Researches

- Some Feather Mites of the Common Moorhen, *Gallinula chloropus lozanoi* Lletget, 1819 (Aves: Rallidae) in the Philippines
- Species of the Genera *Gastrothylax* Poirier, 1883 and *Carmyerius* Stiles and Goldberger, 1910 (Paramphistomoidea: Gastrothylacidae) Occurring in Philippine Ruminants
- Comparative Features of the Muscular Organs of Some Species of the Genus *Fischoederius* Stiles and Goldberger, 1910 (Trematoda: Paramphistomoidea: Gastrothylacidae) as Seen in Median Sagittal Section, with Remarks on the Geographical Distribution of Its Species

Honors and Recognition Received

- NRCP Achievement Award in Veterinary Medicine

• UP International Publication Award

CORRESPONDING MEMBER MANUEL M. GARCIA is an international consultant at the Gar-Del International/ Food Development Center.

ACADEMICIAN EDGARDO D. GOMEZ leads researches on marine biodiversity, conservation and utilization with local and international funding.

Significant Positions Held

• University Professor Emeritus, University of the Philippines
• Coordinator, Southeast Asia Center of Excellence, GEF, World Bank Coral Reef Targeted Research and Capacity Building for Management Program

ACADEMICIAN ASUNCION K. RAYMUNDO

Significant Positions Held

• Chair, NAST Task Force on Hazardous Waste
• Chair, NAST Bioremediation Research Team
• Professor 12, Institute of Biological Sciences, College of Arts and Sciences, UPLB
• Dean, College of Arts and Sciences, UPLB
• Chair, CHEd Technical Committee on Biology
• Member, IRRI Institutional Biosafety Committee
• Member, Evaluation Panel for Basic Research, UPLB
• Member, NSTW Outstanding Commercialization Awards Committee
• Chair, UPLB Basic Science Component Committee

Publications

• Lantican, NB, MGQ Diaz, JL Cantera, FL Delos Reyes III and AK Raymundo. 2011. Microbial community of a volcanic mudspring in the Philippines as revealed by 16S rDNA sequence analysis and fluorescence in situ hybridization. World J Microbiol Biotechnol. 27(4):859-867.

Completed Research

• Validation of a Polymerase Chain Reaction-Based (PCR) Technology for Detection and Monitoring of Ralstonia solanacearum (Smith) Yabuuchi et al Philippine Banana Strain (under the Creative and Research Scholarship Program of UP System)

ACADEMICIAN GAVINO C. TRONO is a well-published research leader on biodiversity, biology, and the development of the seaweed flora/resources of the Philippines.

Significant Positions Held

• Professor Emeritus, UP Diliman Marine Science Institute
• Member, National Research Council of the Philippines
• Member, Philippine Association in Marine Science, Inc. (PAMS)
• Member, Philippine Phycological Society, Inc. (PPSI)

Publications

• Ganzon-Fortes, E.T., G.C. TRONO, R.D. Villanueva, J.B. Romero and M.N.E. Montaño. 2011. 'Endong,' a rare variety of the farmed carrageenophytes Eucheuma denticulatum (Burman) Collins & Hervey from the Philippines. Journal of Applied Phycology. DOI:10.1007/s10811-011-9740-x

Completed Research

• Effects of Climate Change on The Structure and Diversity of Sargassum-dominated Seaweed Communities

On-going Research

• Development of Culture Technology for Halymenia durvillaei using spores. Funded by: Bureau of Agricultural

Research, Department of Agriculture. October 2011- September 2013 (2 years)

Scientific/Technological Conferences/Seminars attended as Speaker with Papers/Lectures Presented
• 11th National Symposium in Marine Science Development Academy of the Philippines, Tagaytay City, Cavite, 20-22 October 2011. *Paper presented:* Seasonality of the growth, reproductive periodicity, and biodiversity of *Sargassum*-dominated seaweed communities Poster: *Sargassum* (Sargassaceae, Phaeophyta) from Alabat Island, Quezon Province, Northeastern Philippines
• 4th National Phycological Symposium. The Marine Science Institute, Diliman, Quezon City, 15 August 2011
• Vulnerability Assessment Training and MPA Forum. Oracle Hotel and Residences, Katipunan Ave., Quezon City, 12-13 July 2011

CHEMICAL, MATHEMATICAL AND PHYSICAL SCIENCES DIVISION

ACADEMICIAN EVELYN MAE TECSON-MENDOZA continues her researches on the field testing of transgenic papaya with delayed ripening trait, and the biochemical and molecular studies on coconut oil and proteins and on the storage proteins of mungbean. Her advocacy in the teaching of biotechnology and scientific writing to teachers, students and researchers throughout the country continues.
Significant Positions Held
• Secretary, NAST Executive Council
• Chair, Chemical, Mathematical and Physical Sciences Division, National Academy of Science and Technology, NAST, 2003 to date
• Focal Person on Biotechnology, NAST
• Research Professor 12, Institute of Plant Breeding, College of Agriculture, UPLB
• Chair, Committee for Institutional Capacity Enhancement for Regulation and Research, DA-Biotech Program
• Chair, Program Management Committee, BS Agricultural Biotechnology Program, June 2010-to date
• Chair, Program Management Committee, UPLB Graduate School Molecular Biology and Biotechnology Program, Nov 2005 to date
• Chair, CA UPLB Ad Hoc Committee BS AgBiotech Curriculum Development
• Head, Crop Biotechnology Division, Crop Science Cluster, College of Agriculture, UPLB, June 2006 to date

Publications
• Tandang-Silvas, Tecson-Mendoza EM, Utsumi S, Mikami B, Maruyama N. Molecular design of seed storage proteins for enhanced food physicochemical properties. 2011. Annu. Rev. Food Sci. Technol. 2:59–73.
• Torio, M.A., Adachi, M., Garcia, R.N., Prak, K., Maruyama, N., Utsumi, S. and Tecson-Mendoza, E.M. (2011) Effects of engineered methionine in the 8S [alpha] globulin of mungbean on its physicochemical and functional properties and potential nutritional quality. Food Research International 44: 2984-2990. doi:10.1016/j.foodres.2011.07.010.
• Dela Cruz, R.Y., Laude, R.P., Diaz, M.G.Q., Laurena A.C., Mendioro, M.S., and Mendoza, E.M.T. 2011. Gene for actin is a suitable internal reference for relative RT-PCR-based Expression Analysis in Normal and Mutant 'Makapuno' Endosperms of Coconut (*Cocos nucifera* L.). Philipp. Agric. Scientist 94: 118-123.
• Bimpong IK, Serraj R, Chin JH, Ramos J, Mendoza EMT, Hernandez JR, Mendioro MS and Brar DS. 2011. Identification of QTLs for drought-related traits in alien introgression lines derived from crosses of rice (*Oryza sativa* cv IR 64) x *O. glaberrima* under lowland moisture stress. Journal of Plant Biology 54: 237-250.

On-going Researches
• Project Leader: Field Testing of Transgenic Papaya with Delayed Ripening Trait and Papaya Ringspot Virus (PRSV) Resistance Towards Commercialization ; DA Biotech
• Study Leader, Development of DNA Markers for Genetic Diversity Analysis, Fingerprinting and Sex Determination of Pili (Canarium ovatum); DA Biotech
• Study Leader, Molecular and Biochemical Basis of the Makapuno Coconut Endosperm, 2009-2012;

Funded by IPB, CA, UPLB

Scientific/Technological Conferences/Seminars attended as Speaker with Papers/Lectures Presented
Tecson-Mendoza EM. Transgenic Crops in the Philippines: R &D, Applications and Challenges. BIT's First World Congress of Agricultural Biotechnology 2011, October 28-30, 2011. Changchun, China

Honors and Recognition Received
2011 Concepcion D. Dadufalza Award for Achievement. UP System. December 13, 2011.

ACADEMICIAN JOSE MARIA P. BALMACEDA
Significant Positions Held
• Dean, College of Science, June 2011 to present (OIC, May 1-31, 2011)
• Member, UP Diliman Executive Committee, June 2011 to present
• Co-Chair, Executive Committee, Natural Sciences Research Institute, UP Diliman, June 2011 to present
• Member, Steering Committee, National Science Consortium, June 2011 to present
• Member, Steering Committee, DOST-UPD Enterprise Center for Technopreneurship, June 2011 to present
• Chair, Technical Committee for Mathematics, CHED, Jan 2011 to present
• Member, Special Technical Committee for Natural Sciences, Scientific Career Council, 2004 – present
• Coordinator for UP, Erasmus Mundus Mobility with Asia (EMMA) Consortium, 2009 to present
• Chair, Diliman Science Research Foundation, Inc., June 2011 to present
• Member, National Board of Directors, Mathematical Society of the Philippines, 1995 to present
• Associate Editor: Southeast Asian Bulletin of Mathematics, Science Diliman, Philippine Science Letters

Completed Research
• Extending Leonard triples to Leonard pairs (with J. Maralit), CHED-funded, completed in 2011

On-going Research
• A bilinear form and trace formulae in Leonard systems (with A. Paningbatan), CHED-funded

Scientific/Technological Conferences/Seminars attended as Speaker with Papers/Lectures Presented
• Regional Collaboration in the Natural Sciences: A Strategic Investment and Imperative, 2011 Chung Nam University International Symposium on Natural Sciences, Daejeon, South Korea, Nov. 9-11, 2011

Honors and Recognition Received
• UP Foundation Professorial Chair Award, January to December 2011
• Ernesto Santos and Remedios-David Santos Distinguished Service Award, UP Diliman Math Foundation, Inc., 2011.
• UP Diliman Math Foundation, Inc. Director's Meritorious Award, 2011.
• National Research Council of the Philippines Service Award, March 2011.

ACADEMICIAN CHRISTOPHER C. BERNIDO
Significant Positions Held
• Chair, NAST Scientific Publications Committee
• President, Central Visayan Institute Foundation
• Founding Director, Research Center for Theoretical Physics
• Member, Editorial Board, Communications on Stochastic Analysis
• Member, Editorial Board, Philippine Science Letters
• Reviewer, Mathematical Reviews (American Mathematical Society)
• Member, Advisory Board, The Philippine Scientist
• Member, Advisory Board, Philippine Education Research Journal

NATIONAL SCIENTIST LOURDES J. CRUZ is a Professor of Biochemistry at the Marine Science Institute,

UP Diliman. She continues her research on marine snail Conus toxins and other marine toxins. NS Cruz is the President of the Bataan Center for Innovative Science and Technology and Center for BioMolecular Science Foundation. She is also a prime mover of the Research Performance Evaluation project.

ACADEMICIAN FABIAN M. DAYRIT is a chemistry professor, Department of Chemistry, Ateneo de Manila University. He is also the current Director of the National Chemistry Instrumentation Center (NCIC). His research interests include coconut oil, natural products chemistry, nuclear magnetc resonance spectrometry and mass spectrometry.

ACADEMICIAN ERNESTO J. DEL ROSARIO is currently Professor Emeritus of Chemistry at the University of the Philippines Los Baños teaching graduate courses in Physical Chemistry and Enzyme Chemistry. He is presently involved in researches focusing on production of bioethanol from cellulosics and algae, development of digital photometric methods in chemical and post-harvest analyses, and heavy metal remediation using natural polymers.

NATIONAL SCIENTIST BIENVENIDO O. JULIANO

Significant Position Held

- Chair, NAST Election Committee
- Senior Expert, Philippine Rice Research Institute Los Baños
- Member, Editorial Board, Journal of Cereal Science
- Member, Editorial Board, Food Reviews International
- Reviewer, Journal of Cereal Science
- Member, Selection Committee for outstanding/pioneering papers in Philippine Agriculturist/Philippine Agricultural Scientist to commemorate 100th anniversary of the journal in 2011

Publications

- Tuaño APP, T Umemoto, N Aoki, Y Nakamura, T Sawada, BO Juliano. 2011. Grain quality and properties of starch and amylopectin of intermediate- and low-amylose indica rices. Philipp Agric Scientist 94:48-56.
- Tuaño APP, Z Xu, MB Castillo, CP Mamaril, RV Manaois, MV Romero, BO Juliano. 2011. Content of tocols, γ-oryzanol and total phenolics and grain quality of brown rice and milled rice applied with pesticides and organic and inorganic nitrogen fertilizer. Philipp Agric Scientist 94:74-79.
- Juliano BO, APP Tuaño, DN Monteroso, N Aoki, C Mestres, JBA Duldulao, KB Bergonio. 2012. Replacement of acetate with ammonium buffer to determine apparent amylose content of milled rice. Cereal Foods World 57 (Jan-Feb issue).

Completed Researches

- Trinidad TP, AC Mallillin, RR Encabo, RS Sagun, AdR Felix, BO Juliano. 2011. The effect of apparent amylose content and dietary fiber on the glycemic response of different varieties of cooked milled and brown rice. British J Nutr (submitted)
- Felix AdR, TP Trinidad, APP Tuaño, BO Juliano. 2011. Effect of starch properties on the satiety indexes of Philippine rice. Philipp Agric Scientist (draft)

Scientific/Technological Conferences/Seminars attended as Speaker with Papers/Lectures Presented

- Philippine Rice R&D Conference, PhilRice Central Expt Station, Muñoz, Nueva Ecija, March 15, 2011.
241st American Chemical Society National Meeting. Anaheim, CA, USA, "Effect of organic and inorganic fertilizers and pesticides on the content of antioxidants in brown rice" in Symposium "Effect of Agricultural Practices and Growing Conditions on Bioactive Compounds" (by Zhimin Xu).
- PhilRice-Rice Watch & Action Network-PRRM Policy Seminar and Workshop on Mainstreaming Brown Rice to Low- and Medium-Income Families, Clark Field, Pampanga Sept 29, 2011.
- PhilRice Workshop on Rice Postproduction Management Key Check and Best Practices, UPLB, Laguna, Dec 7-8, 2011.

Honors and Recognition Received

• Included in "Who's Who in the World 2012" 29th ed. 2011. Marquis Who's Who, New Providence, NJ
• Included in "2000 Outstanding Intellectuals of the 21st Century" 7th ed. Intern Biographical Centre, Cambridge, UK, 2011.
• Included in "Great Minds of the 21st Century" 5th ed. American Biographical Inst Inc, Raleigh, NC, USA 2011.
• Included in "Selected Personalities in Asia". Rendezvous Intern, South Shields, Tyne & Wear, UK 2011

ACADEMICIAN JOSE O. JULIANO is the president of Calamba Medical Center, Vice Chair of the Board of Directors and consultant of Interphil Laboratories and board members of several companies.

NATIONAL SCIENTIST CLARA Y. LIM-SYLIANCO is a Professor Emeritus in Biochemistry of the University of the Philippines.

CORRESPONDING MEMBER EDUARDO R. MENDOZA is a Senior Research Scientist at Ludwig Maximilian University and Adjunct Professor at the University of the Philippines in Diliman, Manila, and Los Baños campuses.

ACADEMICIAN MARCO NEMESIO C. MONTAÑO is a professor at the Marine Science Institute, UP Diliman. Most of his efforts were directed in giving advice to the seaweed processing industry. He initially gave guidance in formulating the standard specifications for carrageenan produced in the Philippines. The Standard Specifications were crucial to marketing the product to the international market. Efforts were also made to help convince the large carrageenan factories not to move to Indonesia.

Significant Position Held

• Chairman, Bureau of Product Standards Committee on Standard Specifications for Carrageenan, BPS-DTI

Publications

• Ganzon-Fortes, E.T., G.C. Trono, R.D. Villanueva, J.B. Romero & M.N.E. MONTAÑO. 2011. 'Endong,' a rare variety of the farmed carrageenophytes *Eucheuma denticulatum* (Burman) Collins & Hervey from the Philippines. Journal of Applied Phycology. DOI:10.1007/s10811-011-9740-x
• Villanueva, R.D., H.T. Yap & M.N.E. MONTAÑO. Reproductive effects of the water-accomodated fraction of a natural gas condensate in the Indo-Pacific reef-building coral *Pocillopora damicornis*. Ecotoxicology and Environmental Safety.74:2268-2274
• Puzon, J.J.M., G.C. Rivero, M.N.E. MONTAÑO & H.J.P. Alcantara. 5,5'-Dithiobis (2-Nitro-Benzoic Acid)-Reactive Biomolecules in the leaf Protoplasts of Cadmium Exposed *Eichhornia crassipes* (Mart.) Solms. and Mercury-Exposed *Chromolaena odorata* (L.f.) R.M. King et H. Robinson, Philipp Agric Scientist Vol. 94 No.3, 225-231.
• Villanueva, R.D., J.B. Romero, M.N.E. MONTAÑO & P.O. dela Peña. 2011. Harvest optimization of four *Kappaphycus* species from the Philippines. Biomass and Bioenergy 35(3):1311-1316.

Completed Researches

• Bench-scale production of fucoidan from Philippine brown seaweeds for use in mariculture and medicinal applications (Year 1)

On-going Researches

• Fucoxanthin from Marine Organisms of Bolinao, Pangasinan
• Bench-scale production of fucoidan from Philippine brown seaweeds for use in mariculture and medicinal applications (Year 2)
• Toxicity effects of discharged effluents from Malampaya Shallow Water Platform to selected marine organisms

Scientific/Technological Conferences/Seminars attended as Speaker with Papers/Lectures Presented

• Plenary Speaker, 46th BIOTA Annual National Convention and Scientific Sessions "Marine Biotechnology

in Seaweeds" Institute of Biology, University of the Philippines Diliman, 7-9 April 2011
• The farmed iota carrageenophytes: Milyon-milyon and Endong – It's Plant cross-section and carrageenan properties. Montaño MNE. 26th Philippine Chemistry Congress. Chemistry: Providing Solutions to Global Changes. April 13-15, 2011, Waterfront Hotel, Lahug, Cebu City, Philippines.
• Carrageenan composition of the newly-farmed carrageenophyte Milyon-milyon from Bohol, Philippines. Espita DML, Nieva JA, Tablizo FA, Montaño, MNE. 11th National Symposium in Marine Science: Coasts in the Midst of Climate Change. 20-22 October 2011. DAP Conference Center, Tagaytay City, Cavite, Philippines.
• Screening of Philippine Brown Seaweeds as a Source of Fucoidan. Nieva JA, Alcaraz AJG, Montaño, MNE. 11th National Symposium in Marine Science: Coasts in the Midst of Climate Change. 20-22 October 2011. DAP Conference Center, Tagaytay City, Cavite, Philippines.
• Comparison of sensitivity of gametes and early developmental stages of two sea urchin species exposed to oil and gas processing effluent. Lambio KAF, Alcaraz AJG, Espita DML, Salvador DMC, Tablizo FA, Bream JE, Montaño, MNE. 11th National Symposium in Marine Science: Coasts in the Midst of Climate Change. 20-22 October 2011. DAP Conference Center, Tagaytay City, Cavite, Philippines.
• Histopathology of the gill and liver rabbitfish (*Siganus sp.*) exposed to effluent from oil and gas processing facility. Salvador, DMC, Alcaraz AJG, Espita DML, Tablizo FA, Lambio KAF, Montaño, MNE. 11th National Symposium in Marine Science: Coasts in the Midst of Climate Change. 20-22 October 2011. DAP Conference Center, Tagaytay City, Cavite, Philippines.

Honors and Recognition Received
• TATAK UP Award, UP Alumni Association-Cebu Chapter, December 2011
• Most Outstanding Alumni, Carolinian Alumni Homecoming, University of San Carlos, Cebu City, April 2011

CORRESPONDING MEMBER AMADOR C. MURIEL is currently the director of Molecular Theory of Turbulence Project at the World Laboratory, CERN, Geneva, Switzerland. He is an expert in the area of statistical mechanics, turbulence, and theoretical physics.

ACADEMICIAN APOLINARIO D. NAZAREA as retired UP Diliman Professor, continues his research on vaccine design and the use of bioinformatics. He is also continuing his work on the biophysical effects of electromagnetic fields.

NATIONAL SCIENTIST BIENVENIDO F. NEBRES, SJ, continues his tireless quest for a better educational system for Filipinos.

CORRESPONDING MEMBER BALDOMERO M. OLIVERA is a distinguished professor of the Department of Biology, University of Utah. He specializes in biochemistry, neurobiology, conopeptides, and key signalling molecules in the central nervous system, ion channels and receptors.

ACADEMICIAN WILLIAM G. PADOLINA is the current Deputy Director General for Operations of the International Rice Research Institute (IRRI). He is also actively involved in the promotion of the applications of modern biotechnology, particularly in agriculture. He also serves in the boards of PIDS and PhilRice.
Significant Positions Held
• Chair, Agriculture and Food Panel, Commission on Science, Mathematics, and Engineering Education (COMSTE)
• Member, Board of Trustees, Philippine institute for Development Studies (PIDS)
• Member, Board of Trustees, PhilRice
• Editor-in-Chief, Philippine Journal of Science (PJS)

CORRESPONDING MEMBER EDUARDO A. PADLAN is a retired scientist of the National Institutes of Health in Maryland, USA, serves as visiting professor at UP Diliman, UP Los Baños, University of Santo Tomas, tirelessly giving lectures on protein structure and engineering and inspiring young students.

ACADEMICIAN CAESAR A. SALOMA is Chancellor at UP Diliman and Professor at the National Institute of Physics (NIP), College of Science. His field of interest is in photonics, signal processing, and complex adaptive systems.

ACADEMICIAN FERNANDO P. SIRINGAN is Professor at the Marine Science Institute, UP Diliman. He specialises in marine/coastal geology, sedimentology and seismic stratigraphy.

ENGINEERING SCIENCES AND TECHNOLOGY DIVISION

ACADEMICIAN CEFERINO L. FOLLOSCO is an engineer, technocrat, former DoST Secretary and President of Alpha Machinery, he continues to lecture and hold dialogues on productivity, technology and clustering all over the Philippines.

Significant Positions Held

- Member, Executive Council, NAST
- Chair, Engineering Sciences and Technology Division, NAST
- Chair, CL Follosco Group
- Commissioner, UNESCO Philippines
- Volunteer Consultant, Export Development Council
- Chair Emeritus, Philippines Foundation for Science and Technology
- Member, Congressional Commission for Science, Technology and Education; Technical Advisory Board; Advisor for Engineering Education and Energy
- Chair, Philippine Society of Agricultural Engineer Foundation
- Chair, Philippine Society of Mechanical Engineers Foundation
- Founding Chair and Director, Philippine Technology Development Ventures, Inc.
- Founding Chair and Director, Entrepinoy Volunteer Foundation, Inc.
- Founding Chair and Director, Philippine Quality and Productivity Movement
- Director, IMI Philippines (an Ayala Corporation)
- Chair, IMI Philippines Audit Committee
- Director, Wartsila Philippines and Wartsila Subic Corp. (Finnish Companies)
- Director, DLSU-AKI Institute of Economic Studies
- Member, DLSU Board of Engineering Advisors

ACADEMICIAN ELIEZER A. ALBACEA is a Professor at the Institute of Computer Science, UP Los Baños.

ACADEMICIAN ALVIN B. CULABA is a Professor of Mechanical Engineering and concurrently the Executive Vice President of the De La Salle University. He also serves as Special Adviser to the Secretary of Energy on matters relating to renewable energy, biofuels and energy conservation.

Significant Positions Held

- Focal Person on Energy, NAST
- President, National Research Council of the Philippines (NRCP)
- Chair, Division VII (Engineering and Industrial Research), NRCP
- Member, Presidential Coordinating Council for Research and Development (PCCRD)
- Member, Energy and Environment Expert Panel, Congressional Commission on Science & Technology and Engineering (COMSTE)
- Director, Center for Engineering and Sustainable Development Research (CESDR), De La Salle University, Manila
- Associate Editor, Philippine Science Compendium in Engineering and Industry Research
- Associate Editor, The International Journal for Manufacturing Science and Technology
- Co-editor, Journal of Sustainable Energy & Environment
- Member, Editorial Board, Philippine Science Letters

On-going Researches
- Optimization modeling of life cycle based bio-energy systems
- Optimization design of photo-bioreactors for micro-algae production
- Dynamic input-output modeling of nascent bio-energy supply chain
- Life cycle studies of energy systems for transport technology applications
- Health impacts of indoor air quality of hospitals in Metro Manila

CORRESPONDING MEMBER JOSE B. CRUZ, JR. is a distinguished Professor of Engineering and Professor of Electrical and Computer Engineering at the Ohio State University.

ACADEMICIAN ANGEL L. LAZARO III is a managing partner and CEO of Angel Lazaro and Associates Consulting Architects and Engineers and present Chair of the Board of Civil Engineering, Professional Regulatory Commission.

ACADEMICIAN LEONARDO Q. LIONGSON is an expert in the fields of hydrology and hydraulics for water supply, flood and sediment control and river basin management. He is an active officer of the Philippine Water Partnership for the promotion of Integrated Water Resources Management.
- Professor, Institute of Civil Engineering (ICE), University of the Philippines Diliman
- Chairman, Philippine National Committee, UNESCO International Hydrological Programme
- Chairman & Trustee, Philippine Water Partnership (PWP), affiliated with the Global Water Partnership (GWP)
- National Representative, International Association of Hydrological Sciences (IAHS)
- Editor-in-Chief, Philippine Engineering Journal

Completed Researches
- A Review of Hydrologic and Hydraulic Aspects of Flooding in Metro Manila, NAST Research Fellowship
- Hydraulic Analysis of a Cascade of Flood-Control Dams, 1 June 2010 – 31 May 2011, funded by UP Institute of Civil Engineering
- Flash Flood Analysis for Varied Morphology of Steep Catchments, 1 June 2010 – 31 May 2011, funded by UP Institute of Civil Engineering

ACADEMICIAN AURA C. MATIAS serves as Dean and Professor of Industrial Engineering at UP Diliman and as Executive Director at the National Engineering Center. She has actively participated in the drafting of the recommended standard minimum curricular guidelines and requirements for the undergraduate program in Industrial Engineering to be implemented in all engineering schools in the Philippines by the Commission on Higher Education (CHEd).

ACADEMICIAN GUILLERMO Q. TABIOS III is a Professor and Director of the National Hydraulic Research Center at UP Diliman. He also serves as group head for the Water Resources Engineering Group and his research interests includes Stochastic and Computational Hydrology and Hydraulics and Water Resources Systems Engineering.

ACADEMICIAN WILLIAM T. TORRES is an active participant in the formulation of government policies affecting the telecommunications industry, especially Value-added Services, such as Voice Over Internet Protocol and audio/video conferencing and streaming.

ACADEMICIAN FILEMON A. URIARTE, JR., a former DoST Secretary and currently Executive Director, ASEAN Foundation in Jakarta, Indonesia, authored a book on Solid Waste Management which was published by UP Press, and a book on Knowledge Management, which is awaiting publication. He is currently writing a book on biofuels, with emphasis on biodiesel and microemulsified hybrid fuel from plant oils.

ACADEMICIAN REYNALDO B. VEA, President of Mapua Institute of Technology, continues to do research on marine transportation engineering and naval architecture in addition to his administrative duties and

efforts to improve engineering and technology curricula in the country. He also helps in the advancement of the process of gaining Philippine membership in the Washington Accord, thus contributing towards Philippine competitiveness. He is also contributing to the formulation of plans for the semiconductor sector to be involved in research through the AECDI.

Significant Positions Held

- Chair, Technical Panel on Science, Technology and Engineering Education, Congressional Commission on Science & Technology and Engineering (COMSTE), February 2008 to present
- Member, Editorial Board, Philippine Science Letters
- Member, Executive Council, ASEAN Academy of Engineering and Technology (AAET)
- Philippine Infrastructure Development for New Economic Opportunities

HEALTH SCIENCES DIVISION

ACADEMICIAN QUINTIN L. KINTANAR

Significant Positions Held

- Member, Executive Council, NAST
- Chair, Health Sciences Division, NAST
- Vice-Chairman, Board of Trustees, Philippine Health Research and Development Foundation
- Chair, Special Technical Committee – Medical Sciences, Scientific Career Council, DoST-CSC Scientific Career System
- Member, Executive Board, DoH Pharmacopeia Organizations
- Member, Pesticide Policy and Technical Advisory Committee, Fertilizer and Pesticide Authority, Department of Agriculture
- Member, Board of Trustees, UP Medical Alumni Society

ACADEMICIAN RAMON F. ABARQUEZ, JR., a leading cardiologist in the country, delivers technical papers in many fora here and abroad on atherosclerosis, hypertension management and related topics.

ACADEMICIAN SOLITA F. CAMARA-BESA maintains her academic ties by being an active member of the Ethics Review Board of the Committee on Research Implementation and Development, College of Medicine, UP Manila.

ACADEMICIAN ANTONIO MIGUEL L. DANS is a Professor at the Department of Epidemiology, College of Medicine, UP Manila.

NATIONAL SCIENTIST ERNESTO O. DOMINGO, Vice-President and Trustee of the Philippine Cancer Society, has been deeply involved in cancer control, specifically cancer epidemiology, education and pain control. As senior adviser to the Health Policy Development Program of the UP School of Economics and US AID, he is involved in a wide-ranging review of the various program of the Department of Health. NS Domingo assists Senator Pia Cayatano in various health-related legislations as technical adviser.

ACADEMICIAN EDITO G. GARCIA, had maintained his interest in researches on schistosomiasis with fellow researchers from the Philippines and abroad.

ACADEMICIAN JAIME C. MONTOYA

Significant Positions Held

- Focal Person for the PSHC, NAST
- Executive Director, DoST-Philippine Council for Health Research and Development
- President, DoST-National Research Council of the Philippines
- Member, ICSU Regional Committee for Asia and the Pacific, 2009 - 2011
- National Focal Person, ASEAN Subcommittee on Biotechnology

• Philippine Representative, Asian Heads of Research Councils (ASIAHORCs)
• President, UP Medical Alumni Society
• Vice-President, Philippine College of Physicians
• Vice-Chair, National Vaccine Research Development Plan Committee
• Member, Advisory Board, National Institutes of Health
• Coordinator for MDG on AIDS, TB and Malaria
• Member, Board of Judges for the Outstanding S and T Awards

On-going Researches
• Molecular Epidemiology of Tuberculosis in a Suburban Filipino Community in the Philippines
• Molecular Epidemiology of Tuberculosis among Filipino HIV and non-HIV patients in the Philippines
• Molecular Epidemiology of Tuberculosis in Selected Tertiary Care Hospitals in the Philippines
• Molecular Epidemiology of Tuberculosis in Selected Prisons in the Philippines
• Molecular Epidemiology of *M. tuberculosis* isolates obtained from the National Drug Resistance Survey in Cebu, Philippine

ACADEMICIAN CARMENCITA D. PADILLA is currently Director, Institute of Human Genetics and the Newborn Screening Program of the UP Manila National Institutes of Health.

NATIONAL SCIENTIST PERLA D. SANTOS OCAMPO serves as the Chief Editor, Competency-based Philippine Textbook of Pediatrics and member, Advisory Board, UP Manila National Institutes of Health
Significant Positions Held
• Chair, Advisory Committee, National Institutes of Health Building Project
• Member, Advisory Board, National Institutes of Health
• Chief Editor, Competency-based Philippine Textbook of Pediatrics
• Honorary President, Philippine Society for Pediatric Gastroenterology, Hepatology and Nutrition
• Honorary President, Philippine Society for Developmental and Behavioral Pediatrics
• Honorary President and Chairman Emeritus, Philippine Association for the Gifted
• Honorary President, International Society of Tropical Pediatrics

Publications
• The Making of Physician – Scientists in the Philippines
• Nurturing Compassion in Filipino Medical Students
• Competency-based Philippine Textbook of Pediatrics
• ORT: New Insights to the New Treatment

ACADEMICIAN THELMA E. TUPASI is the President of the Tropical Disease Foundation and official NAST representative to the Women's Health and Education Program (WHEP) of the Inter-Academy Medical Panel.

SOCIAL SCIENCES DIVISION

NATIONAL SCIENTIST MERCEDES B. CONCEPCION, approved proposals on POPDEV submitted to PCPD for funding; guided statistical program on population and housing and participated in pilot testing of POPDEV Ed modules for Catholic Schools as well as public schools in Region 8.
Significant Positions Held
• Vice-President, NAST
• Chair, NAST Social Sciences Division
• Focal Person on Gender, NAST
• Member, NAST-Hugh Greenwood Environmental Science Award Committee
• Chair, NSCB Technical Committee on Population and Housing Statistics

• Chair, Program Committee, Philippine Center for Population and Development
• Eminent Person, Forum for Family Planning and Development

ACADEMICIAN ARSENIO M. BALISACAN is Dean of the UP School of Economics. He has authored several books and is well known for his work on poverty.

ACADEMICIAN ALLAN B. I. BERNARDO is currently University Fellow and Chair of the Counseling and Educational Psychology Department of the De La Salle University Manila. He maintains an active research and publication program in psychology and education.

Significant Positions Held

• Chair, Philippine Social Science Council, Inc.
• Ex-Officio, Board of Directors, Psychological Association of the Philippines
• Senior Adviser, Asian Association of Social Psychology
• Senior Adviser, ASEAN Regional Union of Psychological Societies
• Member, Committee on the Education of Psychologists, International Union of Psychological Science
• Member, Task Force on Quality Assurance, Commission on Higher Education (CHEd)
• Acting Chair, Technical Panel on Social Sciences and Communication, CHEd
• Chair, Technical Committee on Psychology, CHEd
• Member, Technical Working Group on the Journal Accreditation System, CHEd
• Editor, The Asia-Pacific Education Researcher
• Editor, Philippine Journal of Psychology
• Associate Editor, Asian Journal of Social Psychology
• Visiting Professor and Fulbright Fellow, Department of Psychology, Stony Brook University New York

Publications

• Bernardo, A. B. I. (in press). Talking about good and bad learners: Linguistic dimensions of implicit theories of intelligence. Electronic Journal of Research in Educational Psychology.
• Bernardo, A. B. I. (in press). Lost in translation? Challenges in using psychological tests in the Philippines. Silliman Journal.
• Barrios, A. L., & Bernardo, A. B. I. (in press). The acquisition of case marking by L1 Chabacano and L1 Cebuano learners of L2 Filipino: Influence of actancy structure on transfer. Language and Linguistics.
• Del Rosario, R. M., & Bernardo, A. B. I. (in press). Personal epistemologies and motivation in schools: The relationship between students' epistemological beliefs and intrinsic motivation in learning. Soonchunhyang Journal of Humanities.
• Ganotice, F. A., Bernardo, A. B. I., & King, R. B. (2011). Testing the factorial invariance of the English and Filipino versions of the Inventory of School Motivation with bilingual students in the Philippines. Journal of Psychoeducational Assessment. Published online December 2011, DOI: 10.1177/ 0734282911435459 (ISI)
• Liem, A. D., Martin, A. J., Nair, E., Bernardo, A.B.I., & Prasetya, P. H. (2011). Are basic values fully crystallized in middle adolescence? Evidence from Singapore, the Philippines, Indonesia, and Australia. Journal of Cross-Cultural Psychology, 42, 146-154. (ISI)
• Bernardo, A. B. I., & Gaerlan, M. J. M. (2011). Non-native English students learning in English: Reviewing and reflecting on the research. In R. Jaidev, M.L.C. Sadorra, J.O. Wong, M.C. Lee, & B.P. Lorente (Eds.), Global perspectives, local initiatives: Reflections and practices in ELT (pp. 1-9). Singapore: National University of Singapore, Centre for English Language Communication.
• Bernardo, A. B. I., Lising, R. H., & Shulruf, B. (2011). Validity of two language versions of the Auckland Individualism and Collectivism Scale with Filipino-English bilinguals.

On-going Researches

• Lay theories (Protestant work ethic) and intergroup processes between rich and poor socioeconomic groups
• Attitudes towards rich and poor persons in the Philippines: The role of system justifying beliefs
• Culture of poverty and the undeserving poor as lay beliefs that influence poverty-related cognitions
• Intergroup lay beliefs and attitudes related to the role of English in Philippine society and education

• Nomological network of locus of hope dimensions
• Perceived legitimacy of parental involvement in academic behaviors of Filipino students

Scientific/Technological Conferences/Seminars attended as Speaker with Papers/Lectures Presented
• Bernardo, A. B. I. (2011, December). Towards an outcomes-based and typology-based quality assurance system for Philippine higher education: Implications for SUCs. Development Academy of the Philippines Program for NEDA Regional Directors, Taal Vista Hotel, Tagaytay, Cavite.
• Bernardo, A. B. I. (2011, July). Social axioms and hope: Understanding the instrumental functions of social functions in the experience of hope. Symposium on Current Research on Social Axioms, Conference of Asian Association of Social Psychology, Kunming, China.
• Bernardo, A. B. I. (2011, July). Oppressive social beliefs underlie Filipinos' attitudes towards good and bad English speakers. Symposium of the International Association of Language and Social Psychology, Conference of Asian Association of Social Psychology, Kunming, China.
• Bernardo, A. B. I. (2011, April). Conflict resolution among non-equals: Preferences in conflict resolution strategies across socioeconomic groups in the Philippines. Colloquium Series, Department of Psychology, Santa Clara University, Santa Clara, California, USA.

Honors and Recognition Received
• Fulbright Fellowship (Advanced Research Award), US Department of State Bureau of Educational and Cultural Affairs, 2011
• Don Francisco Ortigas Jr. Distinguished Professorial Chair in Teacher Education, De La Salle University, 2011-2012.

NATIONAL SCIENTIST GELIA T. CASTILLO
Significant Positions Held
• Consultant, International Rice Research Institute
• Senior Adviser, CIP-Philippines
• Member, Executive Committee, Human Development Network
• Member, Board of Trustees, Philippine Rice Research Institute
• Member, Board of Trustees, Center for Agriculture and Rural Development – Mutually Reinforcing Institutions (CARD-MRI), Inc.
• Member, Board of Trustees, CARD Microfinance Development Institute (CMDI)
• Member, Board of Judges, Outstanding Rural Women, DA-NAFC
• Scientific Adviser, (Social Science) International Foundation for Science, Stockholm
• Member, Board of Judges, Gawad-Saka Awards, DA

Publications
• "Ang Mga Naiwan sa Pilipinas ay Mahalaga Rin!" (Remarks made on the Commemoration of the 150th Anniversary of Dr. Jose Rizal and the 160th Birth Anniversary of Gen. Paciano Rizal, Los Baños, Laguna, March 8, 2011.
• "CURE: Dream Platform for Those Left Behind." Comments made during the CURE (Consortium for Unfavorable Rice Environments) Tenth Review and Steering Committee Meeting April 18-20, 2011, Kathmandu, Nepal.
• "Not by Rice Alone!" Keynote presentation at the Underground Treasures: Root and Tuber Crops for Food, Nutrition and Livelihood Knowledge Fair, June 17, 2011 Discovery Suites Hotel, Pasig City.
• "Can We Achieve Food and Nutrition Security?" Address during the opening ceremonies of the 64th Annual Convention of the Philippine Association of Nutrition, July 7-8, 2011, Ilocos Norte Hotel and Convention Center.
• The "New Rice World" of GRiSP (Global Rice Science Program), IRRI, Oct. 3-7, 2011.
• CGIAR Evaluation Policy: A Commentary written for CIP-Philippines, Oct. 12, 2011.
• Toward Making a Dream Come True (Preface for Methodological Guidelines for FOOD STAR (Food Security through Roots and Tubers) Nov. 9-11, 2011 CIP-Philippines.

• What's in a Rice Crisis?: A Review of Newspaper Reports.
• The "Highs" and the "Lows" in the Caraga, Northern Mindanao, and Davao Regions Compared to the Philippine National Situation.

Scientific/Technological Conferences/Seminars attended as Speaker with Papers/Lectures Presented
• Workshop on the Cyber Village Project, IRRI, Feb 2, 2011.
• Community-based Monitoring System (CBMS) 7th National Conference, Moderator, Sofitel, Feb 8-9, 2011.
• Keynote Speaker, Underground Treasures: Root and Tuber Crops for Food Nutrition, and Livelihood Knowledge Fair, June 17-18, 2011.
• Global Rice Science Program (GRiSP Asia Review and Global Forum) Oct. 4-7, 2011.

Honors and Recognition Received
• Plaque of Appreciation from the Phil-Rice Agusan Branch – for graciously visiting Phil-Rice Agusan and sharing her precious time, ideas and experiences with the farmers, students, government officials and other participants in the Farmers' Field Day and Forum at Phil-Rice Agusan on Sept. 22, 2011.
• Silver Jubilee Ring – CARD MRI 25th Anniversary Salamat Po Inay, Dec. 10, 2011 In sincere appreciation to her Committed Service and Dedication to bring about social change and community development, thereby uplifting the lives of Filipino families.

NATIONAL SCIENTIST ONOFRE D. CORPUZ, former UP President, is the author of several books on history and political economy such as "An Economic History of the Philippines", "The Roots of the Filipino Nation" and "The Bureaucracy in the Philippines".

NATIONAL SCIENTIST RAUL V. FABELLA, former Dean, UP School of Economics, continues to be active in studying and leading discussions on issues related to the socio-economic status and development of the country.

ACADEMICIAN AGNES C. ROLA is a Professor and Dean of the College of Public Affairs at UP Los Baños. She is also a partner scientist of the Global Network for Climate Solutions (GNCS) coordinated by Columbia University, USA. She teaches data analysis and policy analysis to graduate students and has written extensively on the economics, institutional, and policy aspects of sustainable agriculture.

National Academy of Science and Technology
CONDENSED BALANCE SHEET
As of December 31, 2011
(in Philippine Peso)

ASSETS

Current Assets		
Cash	3,266,846.91	
Receivables	8,088,035.08	
Inventories	204,882.76	
Prepaid Insurance	17,912.34	11,577,677.09
Property, Plant and Equipment		
Property, Plant and Equipment	10,516,000.31	
Less: Accumulated Depreciation	3,178,593.34	7,337,406.97
TOTAL ASSETS		18,915,084.06

LIABILITIES AND EQUITY

Liabilities	
Current Liabilities	14,217,311.10
Equity	
Government Equity	4,697,772.96
TOTAL LIABILITIES AND EQUITY	18,915,084.06

EXECUTIVE COUNCIL

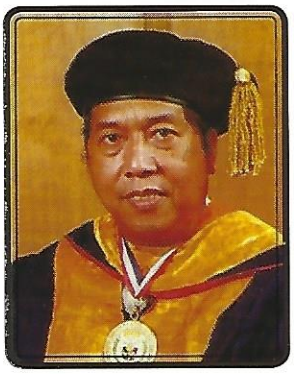
EMIL Q. JAVIER
President

MERCEDES B. CONCEPCION
National Scientist
Vice-President

EVELYN MAE TECSON-MENDOZA
Secretary

DOLORES A. RAMIREZ
National Scientist
Member

CEFERINO L. FOLLOSCO
Member



QUINTIN L. KINTANAR
Member

SECRETARIAT

LUNINGNING E. SAMARITA-DOMINGO
Director IV

OFFICE OF THE DIRECTOR

REIHVELLE A. PEREZ
Planning Officer III

VIRGINIA FRANCIA O. GAVICA
Administrative Aide VI

ROBERTO L. ARAT
Administrative Aide IV

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