



National Academy of
Science and Technology

**12 TH
ANNUAL
SCIENTIFIC
MEETING**

**PHILIPPINE INTERNATIONAL
CONVENTION CENTER
(PICC)**

Roxas Boulevard, Manila

July 11, 1990

8:00 A.M.

PLENARY SESSION

Meeting Room 4

10:30 A.M. "Sustainable development in
search of *heroes*" **Academician Gelia T.
Castillo**
University Professor
UP Los Baños

Discussants:

Mr. Sixto K. Roxas

President

SKR Managers and Advisory Incorporated

Mr. Ernesto D. Garilao

Executive Director

Philippine Business for Social Progress

Dr. Ma. Socorro H. Gochoco

Associate Professor

UP School of Economics

Chairman and Moderator: **National Scientist Alfredo V. Lagmay**

12:00 Noon **L u n c h**

SCIENTIFIC SESSIONS

MATHEMATICAL, PHYSICAL AND ENGINEERING SCIENCES Function Room A

Chairman and Moderator: Academician Bienvenido O. Juliano

- 1:30 "Numerical simulation of
airflow over mountains" **Israel G. Bentillo***
*Department of Meteorology
and Oceanography
College of Science
UP Diliman*
- 2:00 "Which bipartite graphs
are singular?" **Severino V. Gervacio***
*MSU-Iligan Institute of Tech-
nology, Iligan City*
- 2:30 "High pressure sap displacement
for treating green timber poles" . . . **Felino R. Siriban***
*Forest Products Research and
Development Institute
Department of Science and
Technology
College, Laguna ,*
- 3:00 B r e a k
- 3:30 "Pseudoscanning in optical
microscopy" **Cesar Saloma* and
Noel Mediodia**
*National Institute of Physics
College of Science
UP Diliman*

*Paper reader

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- 4:00 “Starch digestability and
glycemic response to extruded
high amylose rice noodles” **Leonora N. Panlasigui***,
Lilian U. Thompson,
David JA Jenkins,
Bienvenido O. Juliano,
Consuelo M. Perez and
Suk Yiu
*Department of Food
Science and Nutrition
College of Home Economics
UP Diliman*
- 4:30 “Some components of the
absolute of the flowers of
Jasminum sambac (L.) Ait.” **National Scientist Luz**
Oliveros-Belardo*,
Roger M. Smith and
Milagros P. Ocampo
*Philippine Women’s University
Manila*

*Paper reader

BIOLOGICAL SCIENCES
Meeting Room 4

Chairman and Moderator: Academician Magdalena C. Cantoria

- 1:30 "The postharvest physiology and biochemistry of the 'carabao' mango" **Ma. Concepcion C. Lizada***
*Postharvest Horticulture
Training and Research Center
College of Agriculture
UP Los Banos*
- 2:00 "The pathology of cadmium poisoning" **Annabelle A. Herrera* and
Corazon Monica D. Baylosis**
*Institute of Biology
College of Science
UP Diliman*
- 2:30 "Effects of delta-9-tetrahydrocannabinol (marijuana) and diacetyl morphine (heroin) on human chromosomes" . **Academician Dolores A.
Ramirez*, M.C.R. Nierras
and S.M. Madrid Scheller**
*Institute of Plant Breeding
College of Agriculture
UP Los Banos*
- 3:00 B r e a k
- 3:30 "Environmental mutagenesis: Soil studies" **Academician Clara Y. Lim-
Sylvianco*, V.P. Inofinada,
M.V. Botuyan and R.
Casareno**
*College of Science
Institute of Chemistry
UP Diliman*

*Paper reader

4:00 “The variability in the holothurin
of Philippine holothurians”

Glorina N. Poscidio*
*Institute of Biology
College of Science
UP Diliman*

4:30 “Biologically active peptides
from *Conus quercinus*, a worm
hunting species”

**Fe C. Abogadie, Cecilia A.
Romilo, Gloria P. Corpuz
and Academician Lourdes
Cruz***
*Marine Science Institute
College of Science
UP Diliman*

*Paper reader

SOCIAL SCIENCES
Function Room B/C

Chairman and Moderator: Academician José Encarnación, Jr.

- 1:30 “Hedonic model estimation:
Application to consumer demand
for rice grain quality” **Corazon L. Albansi*,
F.A. Lantican, B. Duff
and I.G. Catedral**
*Cotton Research and Devel-
opment Institute
Pangasinan*
- 2:00 “Coping mechanisms of
Filipino households in different
agro-ecological settings” **Nina Consorcia T. Castillo***
*Department of Social Sciences
College of Science
UP Los Baños*
- 2:30 “Social systems and food crisis:
A study of its social, political
and economic determinants,
a case study of Negros” **Violeta Lopez-Gonzaga***
*Social Research Center
La Salle College
Bacolod City*
- 3:00 B r e a k
- 3:30 “A descriptive model of cropping
decision making: Application to
crop diversification in irrigated
rice farms” **Anna Miren Gonzales-Intal*
and Jaime B. Valera**
*Department of Agricultural
Education and Rural Studies
College of Agriculture
UP Los Baños*
- 4:30 OPEN FORUM

*Paper reader

AGRICULTURAL SCIENCES
Meeting Room 7

Chairman and Moderator: Academician Faustino T. Orillo

- 1:30 "Industrializing the Philippine countryside: Some prospects and possibilities" **Ruben C. Villareal***
College of Agriculture
UP Los Baños
- 2:00 "Experiences and directions of farming systems research and development in the Philippines" **William D. Dar***
Bureau of Agricultural Research
Department of Agriculture
Quezon City
- 2:30 "Comparative cohort life and reproductivity tables of *Cercospora arachidicola* Hori and *Phaeoisariopsis personata* (Berk. and Curt.) Von Arx on peanut" **Rodolfo A. Paningbatan***
and Oscar S. Opina
Department of Plant Protection
Visayas State College of Agriculture
Baybay, Leyte
- 3:00 **B r e a k**
- 3:30 "The utilization of *Azolla* in the Philippines: Biological problems and solutions" **Pacifico C. Payawal***
Institute of Biological Sciences
College of Arts and Sciences
UP Los Banos

* Paper reader

4:00 “On-farm systems study on the performance of *Pueraria phaseoloides* Benth. and *Centrosema pubescens* Benth. as enriched fallow vegetation for *Imperata cylindrica* Beauv. — dominated natural fallows”

Rolando B. Hipe*, Nadine M. Tabiongan, Eleodoro N. Lapasanda, Melchor E. Monreal, Jr., Nemesio A. Gonzales, Yolanda C. Labor, Epimaco C. Sotto and Teresita J. Lago
*Department of Agriculture
Region 8, Tacloban City*

4:30 “Branch cutting propagation of *Bambusa blumeana*, *Bambusa vulgaris*, *Dendrocalamus merrilianus*, *Gigantochloa levis*, and *Bambusa vulgaris* var. *striata* using indolebutyric acid”

Manuel.L. Castillo*
*Department of Forestry
Visayas State College of
Agriculture
Baybay, Leyte*

*Paper reader

HEALTH SCIENCES
Meeting Room 8

Chairman and Moderator: Academician Edito G. Garcia

- 1:39 "Malaria: Research and operational issues" **Nelia P. Salazar* and Maximino N. Santos**
*Research Institute for Tropical Medicine
Department of Health
Manila*

Discussants:

Dr. Lilian de las Llagas
*Professor of Entomology
UP Institute of Public Health*

Dr. Maximino Santos
*Director
Malaria Control Services
Department of Health
Manila*

OPEN FORUM

3:00 B r e a k

- 3:30 "Pneumonia in children: Implications for preventions" **Thelma Tupasi***
*Tropical Disease Foundation
Makati*

Discussants:

Dr. Elvira Sto. Niño-Dayrit
*Director
Maternal and Child Health Care Services
Department of Health
Manila*

Dr. Melecia Velmonte
*Department of Medicine
UP-PGH*

OPEN FORUM

* Paper reader

POSTER PAPERS

Foyer and Corridor
8:00–8:30 A.M. and Break Periods

1. “A technique for calculating kiln schedule modifications to reduce kiln drying time for some Philippine lumber species”
Audimar P. Bangi, E.D. Bello and G. Bramhall
*Department of Forestry
Visayas State College of Agriculture
Baybay, Leyte*
2. “A study of the structural behavior of coconut lumber as a truss frame”
Agnes M. Pasco
*Philippine Council for Advanced Science and Technology Research and Development
Department of Science and Technology*
3. “MBE grown compound semiconductor hetero-structures and the photo-luminescence spectral of a GaSb/ AlSb SLS”
Antonio B. Villaflor
*Materials Science Group
National Institute of Physics
College of Science
UP Diliman*
4. “Micropropagation of tropical pines I. *Pinus caribaea* morelet”
Saturnina C. Halos and Nancy E. Go
*Natural Science Research Institute
UP Diliman*

*Paper reader

5. "Extruder as a reactor for bioconversion" **Chay B. Pham and J. C. Cheftel**
National Institute of Biotechnology and Applied Microbiology
UP Los Baños
6. "Use of hydrogen peroxide as source of oxygen for transport of tilapia fingerlings" **Rafael D. Guerrero III and Luzviminda A. Guerrero**
Aquatic Biosystems
Bay, Laguna
7. "Ovarian structure and follicular population in water buffaloes (*Bubalus bubalis*)" **Frederick O. Smith, F.A. Adriano, P.G. Duran, E. Atabay, S.S. Jha, T. Niwat, P. Serra and L.C. Cruz**
Central Luzon State University
Muñoz, Nueva Ecija
8. "Different levels of jackbean (*Canavalia ensiformis*) leaf meal in broiler diets" **Francisco M. Basuel and Joel L. Reyes**
Isabela State University
Echague, Isabela
9. "Modular method of sugpo farming: An alternative to the traditional and/or intensive method" **Pepito M. Fernandez**
Institute of Aquaculture
UP Visayas
10. "Organic tablet formulation for improved seedling growth of reforestation species" **Mercedes Umali-Garcia, Venerando U. Garon, Roberto E. Belen and Nicanor E. Gandez**
Department of Forest Biological Science

*College of Forestry
UP Los Banos*

11. "Salt tolerance in cotton" **Leonilla M. Tolentino,
M.E. Baroga, Y.L. Abrina,
J.C. Unciano and E.D.
Orpia, Jr.**
*Cotton Research and
Development Institute
Polomolok, Cotabato*
12. "A locally manufactured
continuous passive motion
machine for the hip and knee
joints" **Rafael Cruz-Bundoc**
*2337 Juan Luna Street
Gagalangin, Tondo
Manila*
13. "Use of an IBM-PC Compatible
computer as an intelligent
interface between the oxicap
4700 monitor and the anesthesiol-
ogist – A preliminary study" **Manuel V. Silao, Herman
Tolentino and
Angel M. Gomez**
*Department of Anesthe-
siology
UP-PGH*
14. "State of the art: community health
volunteerism in the Philippines" **Theresita R. Lariosa and
Noemia Generoso-Silverio**
UP-PGH
15. Consensus on Priority Pediatric
Health Concerns in the
Philippines" **National Scientist Fe del
Mundo**
*Children's Medical Center
Quezon City*

NAST ACTIVITIES IN 1989



Academician Paulo C. Campos was conferred the rank and title of National Scientist by President Corazon C. Aquino in simple rites at Malacañang on August 1, 1989. His conferment brought to nine the total number of living National Scientists.



In the same ceremonies, six (6) young scientists were given Outstanding Young Scientists (OYS) awards for exemplary contributions in their respective fields. They were: Efren C. Abaya (Engineering), Christopher C. Bernido (Physics), Candida B. Adalla (Entomology), Alfinetta Bustrillos Zamora (Agronomy), Mary Ann Lansang (Medicine) and Virginia C. Cuevas (Botany).



Mr. Joseph G. Dobouzet, instructor in the Department of Horticulture, UPLB, was adjudged winner of the First Philippine National Talent Search on January 10, 1989 entitling him to represent the Philippines in the First ASEAN Talent Search.

The International Board of Judges for the ASEAN Talent Search declared a three-way tie for first place. The winners include Mr. Joseph Dobouzet (Philippines), Mr. Sidig Handono (Indonesia), and Mr. Mohammad Said bin Mahat (Malaysia). The Academy hosted three foreign scientists who served as judges in the First ASEAN Talent Search.

Dr. V.R. Balasubrahmanyam of the Indian National Botanical Research Institute, Lucknow was likewise a visiting scientist under the NAST-Indian National Science Academy linkage.

Academician P. Campos represented the Academy in the 6th Pacific Science Inter-Congress at Valparaiso, Viña del Mar, Chile on August 7-10, 1989. He also represented the Academy as special guest of Dr. Sharma in the FASAS Council meeting held in Singapore in December 1989. Academician Cantoria represented the Academy in the Nehru Centenary Celebration in New Delhi, India on November 14-16, 1989.



The Academy held its 11th Annual Scientific Meeting on July 12, 1989 at the Hotel Nikko Manila Garden, Makati. Secretary Ceferino L. Follosco gave the keynote address. Academician Bienvenido F. Nebres, S.J. was plenary speaker and delivered a paper entitled "Building for the Year 2000: A report of the Presidential Task Force on S & T Development".

Members of the past Executive Council, namely: Academicians P. Campos, Magno, Lagmay, Banzon (deceased), C. Velasquez, Mijares, Favila, Salcedo (deceased) and Santos were given recognition during the annual meeting.

The Academy conducted policy consultations on the implementation of biosafety guidelines in the Philippines leading to the draft Executive Order creating a National Biosafety Committee.



The Academy resumed its activities in connection with the guidelines on collection of biological specimens.

The Academy conducted a series of roundtable conferences on the rice problems. The task force on the rice problem being coordinated by NAST President Dioscoro L. Umali, aims to come up with a "white paper" on rice self-sufficiency.

National Scientist Fe del Mundo, through a research fellowship from the Academy, conducted a series of roundtable conferences on pediatric health concerns.



For science literacy awareness, the Academy conducted monthly science literacy fora for science writers of the print media. Featured were experts from different agencies. Representatives from the major dailies regularly attended these sessions.



The Academy also co-sponsored Science Policy Forums with PNSS for the benefit of the legislators and other policy makers.



President Corazon C. Aquino, appointed the new (1989-1992) Executive Council on May 2, 1989. The following officers were then elected by the Academy: National Scientist Umali, President; Academician Dayrit, Vice-President; and Academician Soriano, Secretary.

ACADEMICIANS

Year Elected	Academicians	Specialty
1978	Paulo C. Campos, M.D.	Medicine
1978	Alfredo V. Lagmay, Ph.D.	Experimental psychology
1978	+Cecilio F. Lopez, Dr. Phil.	Philippine linguistics and Oriental studies
1978	Tito A. Mijares, Ph.D.	Statistics
1978	+Juan S. Salcedo, Jr., M.D.	Nutrition and public health
1978	+Alfredo C. Santos, Dr. Phil.	Pharmaceutical chemistry
1978	Dioscoro L. Umali, Ph.D.	Genetics and plant breeding
1978	Carmen C. Velasquez, Ph.D.	Parasitology
1978	+Gregorio T. Velasquez, Ph.D.	Phycology
1978	+Gregorio Y. Zara, D. Sc.	Engineering and inventions
1979	Encarnación Alzona, Ph.D.	History
1979	+Teodoro A. Agoncillo, Litt. D. (<i>b.c.</i>)	History
1979	José Encarnación, Jr., Ph.D.	Economics
1979	Pedro B. Escuro, Ph.D.	Genetics and plant breeding
1979	Raymundo A. Favila, Ph.D.	Mathematics
1979	+Francisco M. Fronda, Ph.D.	Animal husbandry
1979	Bienvenido O. Juliano, Ph.D.	Organic chemistry
1979	Melecio S. Magno, Ph.D.	Physics
1979	Fe del Mundo, M.D., M.A.	Pediatrics
1979	+Geminiano T. de Ocampo, M.D.	Ophthalmology
1979	+Eduardo A. Quisumbing, Ph.D.	Plant taxonomy
1997	+Jose N. Rodriguez, M.D.	Leprology
1979	+Casimiro del Rosario, Ph.D.	Pharmaceutical chemistry
1980	Luz Oliveros-Belardo, Ph.D.	Pharmaceutical chemistry
1980	Magdalena C. Cantoria, Ph.D.	Botany
1980	+Emerita V. de Guzman, Ph.D.	Plant physiology
1980	Conrado S. Dayrit, M.D.	Pharmacology, cardiology
1980	+Francisco O. Santos, Ph.D.	Agricultural chemistry
1980	Joventino D. Soriano, Ph.D.	Cytogenetics and mutation research
1980	Clara Y. Lim-Sylianco, Ph.D.	Biochemistry and Organic chemistry
1981	Clare R. Baltazar, Ph.D.	Systematic entomology
1981	+Julian A. Banzon, Ph.D.	Biophysical chemistry
1981	+Amando M. Dalisay, Ph.D.	Economics
1981	Benjamin D. Cabrera, M.D., M.P.H.	Medical parasitology and public health
1982	Emil Q. Javier, Ph.D.	Genetics and plant breeding
1983	Gelia T. Castillo, Ph.D.	Rural sociology
1983	Jose O. Juliano, Ph.D.	Nuclear chemistry and physics

+ deceased

1983	+Hilario D.G. Lara, M.D., Dr. P.H.	Public Health
1983	Bienvenido F. Nebres, S.J., Ph.D.	Mathematics
1983	Faustino T. Orillo, Ph.D.	Mycology and plant pathology
1983	Jose R. Velasco, Ph.D.	Plant physiology
1985	Quintin L. Kintanar, M.D., Ph.D.	Environmental medicine
1985	Quirino O. Navarro, Ph.D.	Nuclear chemistry
1985	+Gregorio F. Zaide, Ph.D.	History
1987	Solita Camara-Besa, M.D., M.S.	Biochemistry
1987	Filomena F. Campos, Ph.D.	Cytogenetics
1987	Lourdes J. Cruz, Ph.D.	Biochemistry
1987	Edito G. Garcia, M.D.	Medical parasitology
1987	Carmen Ll. Intengan, Ph.D.	Nutrition
1987	Dolores A. Ramirez, Ph.D.	Biochemical genetics
1987	Benito S. Vergara, Ph.D.	Plant physiology
1987	Prescillano M. Zamora, Ph.D.	Plant anatomy-morphology
1988	Ricardo M. Lantican, Ph.D.	Genetics and plant breeding

NATIONAL SCIENTISTS

Year Conferred	National Scientist	Specialization
1978	+Juan S. Salcedo Jr., M.D.	Nutrition and public health
1978	+Alfredo C. Santos, Dr. Phil.	Physical chemistry
1978	+Gregorio Y. Zara, Dr. Sc.	Engineering and inventions
1980	Fe del Mundo, M.D.	Pediatrics
1980	+Eduardo A. Quisumbing, Ph.D.	Plant taxonomy
1982	+Geminiano T. de Ocampo, M.D.	Ophthalmology
1982	+Casimiro del Rosario, Ph.D.	Physics
1982	+Gregorio T. Velasquez	Phycology
1983	+Francisco M. Fronda, Ph.D.	Animal husbandry
1983	+Francisco O. Santos, Ph.D.	Agricultural chemistry
1983	Carmen C. Velasquez, Ph.D.	Parasitology
1985	+Teodoro A. Agoncillo, Litt. D. (<i>b.c.</i>)	History
1985	Encarnación A. Alzona, Ph.D.	History
1985	+Hilario D.G. Lara, M.D., Dr. P.H.	Public health
1986	+Julian A. Banzon, Ph.D.	Biophysical chemistry
1986	Dioscoro L. Umali, Ph.D.	Genetics and plant breeding
1987	Luz Oliveros-Belardo, Ph.D.	Pharmaceutical chemistry
1987	José Encarnación, Jr., Ph.D.	Economics
1988	Alfredo V. Lágmay, Ph.D.	Experimental psychology
1989	Paulo C. Campos, M.D.	Medicine

+ deceased

The Executive Council of the Academy for 1989-1992

National Scientist Dioscoro L. Umali	—	President
Academician Conrado S. Dayrit	—	Vice-President
Academician Joventino D. Soriano	—	Secretary
Academician Magdalena C. Cantoria	—	Member
National Scientist José Encarnación, Jr.	—	Member
Academician Bienvenido O. Juliano	—	Member
Academician Faustino T. Orillo	—	Member

1990 ASM Program Committee

Academician Solita Camara-Besa
Academician Gelia T. Castillo
Academician Conrado S. Dayrit
National Scientist Alfredo V. Lagmay
Academician Melecio S. Magno
Academician Tito A. Mijares
Academician Faustino T. Orillo
Academician Dolores A. Ramirez
Academician Joventino D. Soriano
Academician Prescillano M. Zamora

