



# **NAST**

## **Annual Report**

### **1989**

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**NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY**  
**Republic of the Philippines**

# **1989 Annual Report**

**NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY  
TAPI Bldg., DOST Compound  
Bicutan, Taguig, Metro Manila**

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## Message

The year 1989 has kept the Academicians and the entire staff of the NAST quite busy in performing the mandates of the Academy.

The Academy played an important role in the formulation of the science and technology action plan for the country.

It has performed key roles in the formulation of the biosafety guidelines which are now being implemented and the scientific career system which will be launched in the forthcoming National Science and Technology Week (NSTW) by President Corazon C. Aquino herself.

The Academy was also instrumental in the preparation and subsequent drafting of the guidelines for the collection of biological specimens which will soon be finalized.

This year, the Academy moves to its new site at the Technology Application and Promotion Institute (TAPI) building. It has been provided with adequate furnishings not only for the staff but also for the officers and members of the Executive Council and the Academicians as well.

With the acquisition of a new vehicle and the repair of another, the Academy has gained additional mobility.

To further strengthen our research and development capability, ten (10) research fellowships were granted to the members of the Academy.

There are now 38 living Academicians and 9 of whom are National Scientists.

Realizing the role of media in promoting science awareness and uplifting of science literacy, fora for science writers were sponsored by NAST. In those sessions, experts from different agencies and representatives from the major new networks discussed important national issues confronting our contemporary society.

The challenging task now of the Academy is the formulation of the rice self-sufficiency action program in cooperation with the Department of Agriculture (DA) and Department of Science and Technology (DOST).

Lastly, I would like to thank Secretary Ceferino L. Follusco and the rest of the officers and staff of the Department of Science and Technology (DOST) for their splendid cooperation and assistance in making the Academy function efficiently and effectively with the minimum of red tape.

  
DIOSCORO L. UMALI  
President

## NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY 1989 Annual Report

### Profile

The National Academy of Science and Technology (NAST) was created on December 17, 1976 through Presidential Decree No. 1003-A, as amended, primarily to serve as a recognition body for outstanding achievements in science and technology and to provide meaningful incentives to those engaged in scientific and technological research. In 1982 through Executive Order No. 818, the Academy was formally charged with the function of advisory body to the President of the Philippines and the legislative branch of government on matters concerning science and technology in the country. The Academy was also tasked to undertake other activities expected of an academy of Science such as (a) establishment of linkages with other academies of science and equivalent organizations abroad; (b) investituting and awarding new Academicians, National Scientists and other awardees; (c) publications of selected works of Academicians; (d) subsidizing travels of Academicians to present scientific papers or perform important functions at international conferences;(e) motivating the youth towards careers in science and technology through various awards such as: The Outstanding Young Scientist (OYS) Award (given every year to not more than ten young scientists below 40 years of age) and participation in the Third World Academy of Sciences (TWAS) in identifying young, talented scientists in the basic sciences. A science talent search is also undertaken annually among university level students and graduates, not over 28 years of age who are either active in R & D work or intend to pursue careers in the sciences.

Pursuant to its advisory role, the Academy also renders advisory services to the science community, the Academe and non-governmental institutions on matter concerning science and technology. The Academy is tasked to promote free scientific inquiry and improve the scientific climate in the country though relevent policy recommendations. To perform this role, the Academy convenes annual scientific meetings, roundtables conferences, informal discussions and other consultative meetings on policy matters of national and international importance and addresses them to policy makers in government.

ON PROMOTION AND RECOGNITION

*National Scientists:*

Academician Paulo C. Campos was conferred the rank and title of National Scientist by President Corazon C. Aquino in simple rites at the Malacañang Palace on August 1, 1989. His conferment brought to nine (9) the total number of living National Scientists.



*Academician P. Campos conferred the rank and title of National Scientist, Malacañang Palace, August 2, 1989.*

In the same ceremonies, six (6) young scientists were given Outstanding Young Scientists (OYS) awards for exemplary contributions in their respective fields (Table 1).



*OYS awarding ceremonies, Malacañang Palace, August 2, 1989.*

### *ASEAN Talent Search:*

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. His entry was entitled "Thin Layer Densitometric Quantification of Rotenoids in Various Philippine Derris Species". Mr. Dobouzet received US\$1,000 cash award donated by UNESCO and a Presidential Trophy. The other finalists who won consolation cash awards of P2,000 and a medallion each were Charlotte M. Chiong, PGH; Lucile V. Abad, PNRI; Nelson Villarante, Siliman University; and John D.C. Anonuevo, PGH (Table 2).



*First Philippine National Science Talent Search finalists, PICC January 10, 1989.*

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. Sidiq Handono (Indonesia), and Mr. Mohammad Said Bin Mahat (Malaysia) (Table 3). The winners shared the US \$1,000 cash prize for first place donated by UNESCO. In addition, each received an ASEAN Trophy.



*ASEAN Talent Search Winners and Judges with the President of the Academy.*

*Academician Benefits:*

Gratuities and life pensions were increased beginning this year. This represents the second increase given to Academicians since the establishment of the Academy.

During the year, five (5) Academicians were provided travel assistance to be able to participate in international conferences (Table 4). Ten availed of research fellowship grants to finance their respective research projects and activities (Table 5). Five Academicians received full-time fellowship. The Academy also provided incentive awards to 22 scientists who presented papers during the 11th Annual Scientific Meeting at the Hotel Nikko Manila Garden on July 12, 1989.

*Deaths:*

National Scientist Gregorio T. Velasquez died on July 29, 1989 in New York, USA. A state funeral was held for him and he was buried at the Libingan ng mga Bayani on August 8, 1989.

**ON PROMOTION AND DEVELOPMENT OF  
INTERNATIONAL LINKAGES**

The Academy hosted three foreign scientists who served as judges in the First ASEAN Talent Search: Drs. Anne Pedersen, University of Syracuse and Chairman, Committee on Science Communication and Education, Pacific Science Association; John B. Free, University College, Cardiff, Wales; and David H. Rendell, Memorial University of Newfoundland, Canada.



*ASEAN Talent Search International Board of Judges.*

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.

The Academy has requested for Dr. A.V. Cohen as plenary speaker in the Regional Seminar/Workshop on Biotechnology scheduled for December 1990 under the TWAS Lectureship Scheme. Representations have also been made with the British Council through Mr. Hugh Salmon, director of its Manila Office for a museum specialist in connection with the NAST National Science Center project.

Linkage with the Israel Academy of Science may be established soon. Its president, Dr. Jostner, is among the plenary speakers invited for the coming Seminar/Workshop on Biotechnology.

Academician P. Campos represented the Academy in the 6th Pacific Science Inter-Congress at Valparaiso, Vina 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.

### ON PUBLICATIONS

The following publications were released during the year:

- 1988 Transactions
- Academy News
- NAST Brochure
- Genetic Toxicology by Academician Clara Y. Lim-Sylianco
- Fragmentos by Academician Encarnacion Alzona
- Articles on Various Subjects by Academician Paulo C. Campos
- Inventory of Philippine Insects, Vol. 1 by Academician Clare R. Baltazar

### THE 11TH ANNUAL SCIENTIFIC MEETING

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. Acad. 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 Councils, namely: Academicians P. Campos, Magno, Lagmay, Banzon (posthumous), C. Velasquez, Mijares, Favila, Salcedo (posthumous) and Santos were given recognition during the annual meeting.

Twenty scientific papers were presented in the scientific sessions on Mathematical, Physical and Engineering Sciences; Biological Sciences; Health Sciences; Social and Agricultural Sciences (Table 6). About 480 participants attended the scientific meeting.



*NAST Annual Scientific Meeting. Secretary Follosco, Keynote Speaker, Hotel Nikko Manila Garden, July 12, 1989.*

## **ON ADVISORY ACTIVITIES**

The Academy conducted policy consultations on the implementation of biosafety guidelines in the Philippines leading to the draft Executive Order creating the National Biosafety Committee. A series of conferences led to a national consultation on July 7, 1989 at PIDS, NEDA sa Makati Building and to the presentation by the proponents before the Science and Technology Coordinating Council (STCC) at the Malacañang Palace on September 21, 1989.

Pending approval by Pres. Aquino, DOST has started to fund the initial implementation of the guidelines on biosafety in the Philippines.

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 rice problem being coordinated by NAST President Dioscoro L. Umali, aim to come up with a "white paper" on rice self-sufficiency."

The Academy participated in the discussions on the science career system which the Academy had initiated five years ago. The Science Career Council is working on plans to implement the system nationwide.

National Scientist Fe del Mundo, through a research fellowship from the Academy, conducted a series of roundtable conferences on pediatric health concerns (Table 7).

The Academy linked with the Philippine Foundation of Science and Technology (PFST) in its Science Centrum project, to encourage and take advantage of private sector participation. The Academy assisted the PFST in preparing a draft bill to reconcile the bills filed in the Senate and the House on similar science projects.

The Academy was alert on issues with S & T relevance. It issued statements on: SB 1133 by Sen. Shahani entitled "Establishment and Appropriating Funds Thereof for the National Science Center" ; on Housebill by Congresswoman Starke entitled "An Act creating the Philippine Rubber Research and Development Board" and on PD 997 entitled "Conferring Civil Service Eligibilities on Scientific and Technological Specialists". In addition, the Academy issued a position paper with respect to the retention of the US bases in the Philippines.

For science literacy and awareness, the Academy conducted monthly science literacy fora for science writers of the print media. Featured were experts from different agencies (Table 8). Representatives from the major dailies regularly attended these sessions. The Academy also co-sponsored (with PNSS) Science Policy Forums for the benefits of the legislators and other policy makers.



*Science Literary Forum, Casino Español.*

ON ADMINISTRATIVE MATTERS

President Corazon C. Aquino, appointed the new (1989-1992) Executive Council on May 2, 1989 (Table 9). the following officers were then elected by the Academy: Academician Umali, President; Academician Dayrit, Vice-President and Academician Soriano, Secretary.



*Newly appointed NAST Executive Council with President Corazon C. Aquino, Malacañang, May 22, 1989.*

The Executive Council appointed new chairmen for the five (5) Divisions (Table 10). Academicians involved in various committees are listed in Table 11.

The NAST Secretariat was augmented by three (3) new recruits and two (2) on detail from DOST agencies. Two regular personnel resigned (Table 12).

The Academy transferred its offices to the Mezzanine Floor of the TAPI building in the DOST complex. It now has separate offices for the President, the Bureau members and the Executive Director. An ample amount from the 1989 budget was realigned to renovate the new office and acquire new set of furnitures. In addition, it was able to repair its IRRI-donated pick-up vehicle from realigned funds. During the year, the Academy acquired a new utility vehicle, copier, scanner and macintosh personal computer.

The Academy also received from the Asia Foundation some 25 books on various science subjects and will continue to receive 50 titles annually.

The Caravan Travel Agency and Jet Travel Agency were chosen as the official travel agents for the Academy.

# TABLES

Table 1. 1989 OUTSTANDING YOUNG SCIENTIST AWARDEES

Name	Present Position	Degree/s	Specialization
EFREN C. ABAYA (Engineering)	Chairman and Associate Professor <i>Department of Electrical Engineering College of Engineering UP Diliman, Quezon City</i>	Ph.D. University of Texas at Austin 1982	Data Communications
CANDIDA B. ADALLA (Entomology)	Assistant Professor <i>Department of Entomology CA, UPLB</i>	Ph.D. UPLB 1981	Insect Resistance
ALFINETA FERMINA B. ZAMORA (Agronomy)	Researcher and Laboratory Head <i>Tissue Culture and Propagation Section Institute of Plant Breeding UPLB</i>	M.S. UPLB 1977	Tissue Culture
CHRISTOPHER C. BERNIDO (Physics)	Associate Professor <i>National Institute of Physics College of Science UP Diliman, Quezon City</i>	Ph.D. State University of New York at Albany 1982	Theoretical Physics
VIRGINIA C. CUEVAS (Botany)	Assistant Professor <i>Institute of Biological Sciences CAS, UPLB</i>	Ph.D. UPLB 1987	Organic Fertilizer
MARY ANN D. LANSANG (Medicine)	Head, Department of Epidemiology and Biostatistics <i>Research Institute for Tropical Medicine (RITM) Alabang and Assistant Professor College of Medicine UP-PGH, Manila</i>	M.D. UP-PGH 1978	Clinical Epidemiology

Table 2. Finalists in the First Philippine National Science Talent Search held at the Philippine International Convention Center (PICC) On January 10, 1990

Name	Office	Title of Entry
Charlotte Chiong, M.D.	UP-PGH	The lateral nasal wall in Filipinos: A study based on 50 consecutive cadaver dissections
Lucille V. Abad	PNRI	Composition of the enzymatic and acid hydrolyzate of gamma-irradiated rice straw
John DC. Anonuevo	UP-PGH	The efficiency, safety and acceptability of high fiber rice bran diet (darak) in the control of diabetes mellitus
Nelson Villarante	Siliman University	In-vitro assay of anti-microbial plants in herbal medicine
Joseph G. Dobouzet	UPLB	Thin layer densitometric quanification of rotenoids in various Philippine Derris species

**Table 3. Participants in the First Asean Talent Search held at the  
Philippine International Convention Center (PICC) on January 31 to February 2, 1989**

<b>Name</b>	<b>Office</b>	<b>Title of Entry</b>
Mohammed Said bin Mahat	Rubber Research Institute of Malaysia Jalan Ampang Kuala Lumpur, Malaysia	Industrial Microbiology: (a) Polybag latex preservation, (b) Development of a new latex preservation system, and (c) Assessment of NR seals
Sidiq Handono	Achmed Yani Institute of Technology Bandung, Indonesia	Microcomputer partial modulation for isolated area television transmission system without link station
Joseph G. Dobouzet	Department of Horticulture College of Agriculture UPLB, College, Laguna Philippines	Thin layer densitometric quantification of rotenoids in various Philippine Derris species

**Table 4. RECIPIENTS OF TRAVEL SUPPORT**

<b>Grantee</b>	<b>Division</b>	<b>Conferenc Attended</b>	<b>Purpose</b>
CLARA Y. LIM-SYLIANCO	Mathematical, Physical and Engineering Sciences	2nd Southeast Asian Workshop on Short Term Assays on Environmental Mutagens, Carcinogens and Tetrato-gens, Bangkok, Thailand February 6-17, 1989	Read paper entitled "Problems of Environmental Mutagenesis in the Philippines"
		Fifth Inter-Conference on Environmental Mutagens, Cleveland, Ohio July 10-15, 1989	Read paper entitled "Mutagenecity Activity of Organic Extracts from Street Soil Samples in Metro Manila"
ALFREDO V. LAGMAY	Social Sciences	Meetings on "Philosophy and the Human Future", Esalem Institute of Revisioning Philosophy Program, Univer-sity of Cambridge, U.K. August 8-11, 1989	Read paper entitled "Bodily Exposition Under ECG-Alpha: In Search of the Middle Way"
MAGDALENA C. CANTORIA	Biological Sciences	37th Annual Congress of the Society of Medical Plant Research, Braunschweig, West Germany September 11-14, 1989	
		20th Inter-Symposium of Essential Oils Wursburg, West Germany September 11-14, 1989	
		Nehru Centenary Celebration, New Delhi November 14-16, 1989	Read a paper entitled "Science and Tech-nology Development in the Philippines"
PRESCILLANO M. ZAMORA	Biological Sciences	Plant Resources of Southeast Asia First International Symposium, Jakarta Indonesia May 22-25, 1989	Read a paper entitled "Economic Ferns of the Philippines" Visited the Herbarium Bogoriense May 26-30, 1989
PAULO C. CAMPOS	Health Sciences	Federation of Asian Scientific Academies and Societies (FASAS) Council Meeting January 4-5, 1989	Represent the Academy
		6th Pacific Science Inter-Congress Valparaiso, Vina del Mar, Chile August 7-10, 1989	Represent the Academy
		FASAS Council Meeting Singapore December 1989	Represent the Academy

**Table 5. RESEARCH FELLOWSHIP GRANTS**

<b>Name</b>	<b>Division</b>	<b>Effectivity of Grant</b>	<b>Research Project/Activity</b>
Lourdes J. Cruz	Mathematical, Physical and Engineering Sciences	February 1/89 - January 31/90	Biochemical Assays for Paralytic Shellfish Poisons (PSP)
Tito A. Mijares	Mathematical, Physical and Engineering Sciences	June 1/88 - July 31/89	<ol style="list-style-type: none"> <li>1) The Normal Approximation to the Bartlett-Manda-Pillai Trace Test in Multivariate Analysis</li> <li>2) On the normal approximation to Lawley-Hotelling's <math>T_0^2</math></li> </ol>
Clara Y. Lim-Sylianco	Mathematical, Physical and Engineering Sciences	November 1/88 - October 31/89	Molecular Nutrition
Raymundo A. Favila	Mathematical, Physical and Engineering Sciences	November 1/89 - October 31/89 April 1/88 - March 31/89	Newer Methods in Higher Geometry (book) Metric Differential Geometry (book)
Fe Del Mundo	Health Sciences	May 1/89 - April 30/90	Consensus on Pediatric Health Concerns (Roundtable conferences)
Luz Oliveros-Belardo	Mathematical, Physical and Engineering Sciences	March 15/89 - March 14/90	<ol style="list-style-type: none"> <li>1) Phytochemical analysis of the ethyl acetate extract of <i>Cymbopogon cetrulus</i> (DC) Stpf for possible hypotency components</li> <li>2) <i>Polycia guilfoyly</i> for insecticidal property</li> <li>3) Gas liquid chromatography of some <i>Cymbopogon</i> and <i>Piperacia</i> plants</li> </ol>
Clare R. Baltazar	Biological Sciences	May 1/89 - April 30/90	Inventory of Philippine Insects: Order Lepidoptera (book)
Jose R. Velasco	Biological Sciences	September 1/89 - August 31/90	A Socio-Economic Study of Philippine Agriculture Development
Filomena F. Campos	Biological Sciences	November 1 - December 31/89	Technological Change and Women Towards 21st century
Joventino D. Soriano	Biological Sciences	October 1 - December 31/89	Inducing Mutations in Peanut: Varietal Tests and Inheritance Studies

**Table 6. PAPER PRESENTATORS AT THE 11TH ANNUAL SCIENTIFIC MEETING  
HELD AT THE HOTEL NIKKO MANILA GARDEN ON JULY 12, 1989**

Scientific Session	Presentors	Title of Paper
Mathematical, Physical and Engineering Sciences	Edgar E. Escultura Department of Mathematics, UP Diliman	Topological and algebraic structures of $R^{n+1}$
	Severino M. Gervacio College of Sciences and Mathematics Mindanao State University Iligan Institute of Technology, Iligan City	Minimizing the maximum differences between integer labels of adjacent vertices in a paper
	Claro T. Llaguno Institute of Chemistry, UP Diliman	A cubic equation for state for phase equilibrium calculations
	Felino P. Lansigan Statistical Laboratory Institute of Mathematical Sciences and Physics, UPLB	Use of simulation in evaluating potential yields and weather-related variability in crop production
	Alexis T. Belonio Department of Agricultural Engineering Central Philippines University, Iloilo City	Design and performance evaluation of a batch-type rice hull gasifier stove
Biological Sciences	Salcedo L. Eduardo College of Veterinary Medicine, UPLB	Scanning electron microscopy on the intergumental surfaces of adult <i>Gnathostoma deloresi</i> Tubangui 1925, a parasite of pigs in the Philippines
	Glorina N. Pocsidio Institute of Biology College of Science, UP Diliman	Determinations of toxicity on some coral reef crabs of La Union, Philippines
	Saturnina C. Halos Natural Sciences Research Institute College of Science, UP Diliman	Cellulose biodegradation studies: Application of recombinant DNA and protoplast fusion techniques
	Anabelle A. Herrera Institute of Biology, UP Diliman	Sublethal effects of Cadmium on ovarian morphogenesis in <i>Tilapia nilotica</i>
	Amelia P. Guevarra Institute of Chemistry College of Science, UP Diliman	Antimutagens from <i>Momordica charantia</i> Linn

## Scientific Session

## Presentors

## Title of Paper

## Health and Social Sciences

Lourdes J. Cruz  
Marine Science Institute  
Albert Hall, UP Diliman

Conotoxins: Specific blockers muscle sodium channel

Clara Y. Lim-Sylianco  
Institute of Chemistry  
College of Science  
UP Diliman

Inhibitory effects of amino acids on somatic and germ cell genotoxicity of some anticancer agents

Manuel M. Dayrit  
Department of Health  
San Lazaro Compound  
Rizal Ave., Manila

Epidemics of paralytic shellfish poisoning in the Philippines (1988-1989)

Dante B. Canlas  
School of Economics  
UP Diliman

Aggregate labor supply analysis: The Philippines

Quintin L. Kintanar  
Department of Health  
San Lazaro Compound  
Rizal Ave., Manila

Evolving, crafting and implementing the Philippine National Drug Policy and the Generic Act of 1988 - A model in Science and Technology policy making

Ma. Cynthia Rose Banzon-Bautista  
Department of Sociology  
UP Diliman

Determinants of success and failure in overseas migration: The case of returnees from the Middle East

Luis C. Dery  
UP - Baguio  
Baguio City

The era of the kris: Moro raids in Sorsogon and Kabikolan and their impact on Philippine History, 1571-1896

## Agricultural Sciences

Bernabe B. Cocjin  
West Visayas State University  
Iloilo City

Fresh coconut meat in poultry rations

Francisco M. Basuel  
Isabela State University  
Echague, Isabela

Varying levels of sabawil (*Mucuna pruriens* (L.) D.C.) leaf meal on growth performance of broilers

Cesar G. Demayo  
Int'l. Rice Research Institute  
College, Laguna

Electrophoretic analysis of genetic variation in brown planthopper *Nilaparvata lugens* (Stål.) (Homoptera: Delphacidae) and green leaf-hopper *Nephotettix virescens* (Distant) (Homoptera: Cicadellidae) in the Philippines

Table 7. ROUNDTABLE CONFERENCES ON HEALTH  
CONCERNS OF CHILDREN IN THE PHILIPPINES

1. Malnutrition in Pre-schoolers and Adolescents  
July 19, 1989  
Children's Medical Center Philippines (CMCP), Banawe, Q.C. (Jointly with the Nutrition Council of the Philippines)
2. Primary TB in Children  
August 20, 1989  
CMCP, Banawe, Q.C.  
(Jointly with the Chest Tripartite Association)
3. Pneumonia in Children  
October 18, 1989  
CMCP, Banawe, Q.C.  
(Jointly with the Department of Health)
4. Neonatal Infections  
November 27, 1989  
CMCP, Banawe, Q.C.  
(Jointly with the Research Institute for Tropical Medicine)
5. Amebiasis in Children  
May 14, 1989  
Philippine International Convention Center (PICC)  
(Jointly with the Philippine Medical Association)
6. Reaching Unserved Children  
September 20, 1989  
CMCP, Banawe, Q.C.  
(Jointly with the Department of Health)
7. Promoting Children Survival and Safe Motherhood  
November 7, 1989  
San Fernando, Pampanga
8. Promoting Child Survival and Safe Motherhood  
November 10, 1989  
Liliw, Laguna  
(Jointly with the Puericulture Center of Liliw)

Table 8. 1989 SCIENCE LITERACY FORUMS

Date	Topic	Speaker/Reactor
January 26, 1989	Hazardous waste management	Engr. Marissa David Solid and Toxic Waste Division Environmental Management Bureau Department of Environment and Natural Resources  Dr. Arcadio Quimio International Rice Research Institute UP, Los Baños
March 30, 1989	Regulations and monitoring of processed foods sold in the market	Dr. Cecille B. Gonzales Director Bureau of Foods and Drugs
	Regulations and monitoring of meat and meat products sold in the market	Dr. Bernardo D. Resoso Director National Meat Inspection Commission Bureau of Plant Industry
	Regulations and monitoring of fruits and vegetables sold in the market	Dr. Lydia Crisostomo Chief, Laboratory Service Division Bureau of Plant Industry
	The consumer's views: health hazards on foods sold in the market	Sis. Mary John Mananzana Founding Member Consumer Union of the Philippines
April 27, 1989	Population	Dr. Corazon M. Raymundo Director Population Institute UP Diliman, Quezon City
	Food security and agriculture	Dr. Burton T. Onate Los Baños, Laguna
	Deforestation and its social implications	Mr. Nestor T. Baguion Forest Biological Sciences Institute College of Forestry, UPLB
	Declining productivity of natural resources base	Dr. Enrique P. Pacardo Director Institute of Environmental Studies and Management UP Los Baños

<b>Date</b>	<b>Topic</b>	<b>Speakers</b>
April 27, 1989	Pollution of air, water and land	Ms. Elenadia V. del Rosario Chief, Environmental Education Section Environmental Management Bureau Department of Environment and Natural Resources
May 17, 1989	The Philippine food and nutrition situation, 1987	Dr. Rodolfo F. Florentino Director Food and Nutrition Research Institute  Ms. Gracia M. Villavieja Chief Nutrition Intervention and Modeling Assessment Division, FNRI  Mrs. Josefina A. Magbitang Officer-in-Charge Biomedical Nutritional Research Division, FNRI  Mrs. Celeste C. Tanchoco Project Leader Phase B - Anthropometry Clinical Survey  Mrs. Miriam D. Kuison Chief, Nutrition Standards and Management Division, FNRI Phase C - Biochemical Survey
June 29, 1989	Climatic changes and their effects	Dr. Roman L. Kintanar Administrator PAGASA
	Climatic changes and the effects in agriculture	Dr. Danielito T. Franco Associate Professor Department of Land and Water Resources Engineering and Agro-Industrial Technology UP Los Baños
	Climatic changes and the effects in forestry	Dr. Tonie O. Balangue Professor Forest Resources Management
	Warming of the atmosphere	Academician Melecio S. Magno President Philippine National Science Society
July 27, 1989	The leading edges for aquaculture of the Philippines	Dr. Rafael Guerrero III Executive Director Philippine Council for Aquatic Marine Resources

Date	Topic	Speaker/Reactor
July 27, 1989	National perspective on the issue	Dr. Arsenio S. Camacho Director Bureau of Agricultural Research Department of Agriculture
	International perspective on the issue	Dr. Roger J.V. Pullin Director Aquaculture
August 31, 1989	Techno-transfer projects for countryside development	Mrs. Guillermino C. Manalac Chief Rural Technology and Information Division Industrial Technology Development Institute
September 28, 1989	Vitamin C labeling in commercial fruit juices	Ms. Aurea V. Lontoc Senior Science Research Specialist Food and Nutrition Research Institute
	Storage stability of ascorbic acid in orange juice drinks	Ms. Geronima V. Reyes Science Research Specialist I Food and Nutrition Research Institute
November 29, 1989		Academician Quintin L. Kintanar Reactor on Policy Assistant Secretary Department of Health
		Dr. Cecille P. Gonzales Reactor on Policy Director, Bureau on Food and Drug Department of Health
		Dr. Rodolfo F. Florentino FNRI Stand Director Food and Nutrition Research Institute
December 14, 1989		Representative Manufacturing Practices Magnolia Products Division
		Representative Manufacturing Practices RFM Corporation
		Sis. Mary John Mananzana Consumer Stand Citizen's Alliance for Consumer Protection

<b>Date</b>	<b>Topic</b>	<b>Speaker/Reactor</b>
November 29, 1989	Philippine participants to the International Decade on Natural Disaster Production	Dr. Roman L. Kintanar Administrator, PAGASA
December 14, 1989	Disaster preparedness - Civil defense	Mr. Luis Grande, Jr. Executive Officer Civilian Defense Office
	Disaster preparedness system in the Philippines	Dr. Raymundo Punongbayan Director Philippine Institute of Volcanology
	Overview of radiation technology	Academician Quirino O. Navarro Director Philippine Nuclear Research Institute
	Radiation disinfestation of some agricultural products	Dr. Eugenia C. Manoto Chief Science Research Specialist Philippine Nuclear Research Institute
	Studies on the techno-economic feasibility of food irradiation in the Philippines	Mrs. Carmen O. Singson Senior Science Research Specialist Philippine Nuclear Research Institute
	Radiation sterilization of medical products, bone and tissue grafts	Mrs. Carmen O. Singson Senior Science Research Specialist Philippine Nuclear Research Institute

Table 9. EXECUTIVE COUNCIL MEMBERS

Academician Dioscoro L. Umali	-	President and Chairman
Academician Conrado S. Dayrit	-	Vice-President and Vice-Chairman
Academician Joventino D. Soriano	-	Secretary
Academician Jose Encarnacion, Jr.		
Academician Bienvenido O. Juliano		
Academician Magdalena C. Cantoria		
Academician Faustino T. Orillo		

Table 10. NAST DIVISION CHAIRMEN

Division	Chairman
Mathematical, Physical and Engineering Sciences	Acad. Bienvenido O. Juliano
Biological Sciences	Acad. Magdalena C. Cantoria
Health Sciences	Acad. Conrado S. Dayrit
Social Sciences	Acad. Jose Encarnacion, Jr.
Agricultural Sciences	Acad. Faustino T. Orillo

**Table 11. MEMBERSHIP IN COMMITTEES  
AND BOARD OF JUDGES****Philippine National Talent Search**

Academician Tito A. Mijares, Chairman  
 Academician Solita F. Camara-Besa  
 Academician Joventino D. Soriano  
 Academician Dolores A. Ramirez  
 Dr. Danilo Yanga  
 Dr. Angelito Lazaro

**ASEAN Talent Search**

Academician Carmen C. Velasquez, Chairman  
 Dr. Ahmed Zaharudin Idrus, Malaysia  
 Dr. Aprilani Soegiarto, Indonesia  
 Dr. Mohammed Yussaf bin Hj Mohidiin,  
 Brunei Darussalam  
 Dr. John B. Free, British Council  
 Dr. Anne Pedersen, Pacific Science Association  
 Dr. David Rendell, Youth Science Foundation  
 of Canada

**NAST Biosafety Committee**

Academician Pedro B. Escuro, Chairman  
 Academician Paulo C. Campos  
 Academician Dolores A. Ramirez  
 Academician Carmen C. Velasquez  
 Academician Faustino T. Orillo  
 Academician Ricardo M. Lantican  
 Academician Filomema F. Campos  
 Academician Joventino D. Soriano  
 Dr. Dely Gapasin, PCARRD  
 Dr. William G. Padolina, UPLB  
 Dr. Estrella Tuazon, BPI/DA  
 Ms. Beta Balagot, DENR  
 Mr. Romeo Fortes, PCAMRD

**Biosafety Organizing Committee  
(National Consultation)**

Academician Conrado S. Dayrit  
 Academician Dolores A. Ramirez  
 Academician Pedro B. Escuro  
 Academician Joventino D. Soriano  
 Academician Benito S. Vergara  
 Atty. Ricardo M. Lantican  
 Atty. Amelia C. Ancog  
 Dr. Apolinario D. Nazarea  
 Dr. Lydia Josen

**Seminar/Workshop on Biotechnology  
Organizing Committee**

Academician Paulo C. Campos, Chairman  
 Academician Dioscoro L. Umali  
 Academician Dolores A. Ramirez  
 Academician Benito S. Vergara  
 Dr. William G. Padolina, UPLB  
 Dr. Lydia Josen, ITDI/DOST  
 Dr. Ester Albano-Garcia, PCASTRD/DOST  
 Dr. Cesar P. Madamba, NAST

**Collection of Biological Specimens**

Academician Carmen C. Velasquez  
 Academician Joventino D. Soriano  
 Academician Prescillano M. Zamora  
 Academician Clare R. Baltazar  
 Academician Magdalena C. Cantoria  
 Academician Melecio S. Magno  
 Academician Dioscoro L. Umali  
 Atty. Amelia C. Ancog  
 Dr. Domingo Madulid, National Museum  
 Dr. Venus Calilung, UPLB  
 Ms. Beta Balagot, DENR

**Science Career Council (SCC)**

Sec. Ceferino L. Folloso, Chairman  
 Chairman Patricia Sto. Tomas, Co-Chairman  
 Academician Dioscoro L. Umali, NAST  
 Academician Melecio S. Magno, PNSS  
 Dr. Jose V. Abueva, UP

**Roundtable Conference on the Rice Problem**

Academician Dioscoro L. Umali, Chairman  
 Academician Faustino T. Orillo  
 Academician Pedro B. Escuro  
 Academician Gelia T. Castillo  
 Dean Tirso Paris  
 Dr. Jerome Sison  
 Dr. Fermin Adriano  
 Dr. Cesar P. Madamba

**11th ASM Program Committee**

Academician Joventino D. Soriano, Chairman  
 Academician Tito A. Mijares  
 Academician Gelia T. Castillo  
 Academician Faustino T. Orillo  
 Academician Conrado S. Dayrit

**DOST NSTW Committee on Awards**

Academician Dioscoro L. Umali, Chairman  
 Dr. Pacita L. Zara, PCHRD  
 Prof. Fortunato T. dela Peña, TAPI  
 Dr. Leopoldo V. Abis, MIRDC  
 Dr. Pancracion V. Bawagan, FPRDI  
 Dr. Adoracion D. Ambrocio, PSHS  
 Dr. Cesar P. Madamba, NAST

**Table 12. STAFF RESOURCES AND DEVELOPMENT**

**Staff Addition**

1. Belinda M. Bermejo  
Position: Accountant III  
Effectivity of Appointment: January 16, 1989  
Status of Appointment: Permanent
2. Marissa P. Camposano  
Position: Cashier III  
Effectivity of Appointment: September 1, 1989  
Status of Appointment: Permanent
3. Joselito A. Hernandez  
Position: Driver/Messenger  
Effectivity of Appointment: September 1, 1989  
Status of Appointment: Casual
4. Redocindo L. Santillan - on detail from STII  
Position: Supervising Science Research Specialist  
Effectivity of Detail: May 2, 1989 to date
5. Rustica N. Cabrera - on detail from PNSS  
Position: Clerk  
Effectivity of Detail: July 1 to December 31, 1989

**Staff Resignation**

1. Imelda G. Huelgas  
Position: Cashier 1  
Date of resignation: February 16, 1989
2. Melito Lynch  
Position: Messenger/Driver (casual)  
Date of Resignation: May 31, 1989

**Staff Development**

**Foreign Travel:**

Cesar P. Madamba  
Position: Executive Director  
Date of Travel: April 17 - June 9, 1989  
Place: Penang, Malaysia  
Purpose: To attend the "Seminar on the Management of Science and Technology in Asean Countries"

**Attendance in Seminar/Workshops:**

1. Rosemarie S. Espino  
Position: Administrative Officer  
Title of Seminar: GACPA Seminar on Computer-Based Financial System  
Date: September 18-22, 1989  
Venue: Development of the Philippines
2. Belinda M. Bermejo  
Position: Accountant III  
Title of Seminar: (a) GACPA Seminar on Computer-Based Financial System  
Date : October 23-27, 1989  
Venue: Development Academy of the Philippines  
  
(b) New Tax Laws and Regulations and Withholding Tax  
Date: October 21, 1989  
Venue: Holiday Inn Hotel, Manila
3. Luningning E. Samarita  
Position: Media Researcher and OIC, Technical Services Division  
Title of Seminar: Seminar/Workshop on Research and Information Utilization  
Date: October 2-6, 1989  
Venue: Asian Institute of Journalism
4. Abdulrackman E. Mama  
Position: Information Editor II  
Title of Seminar: Seminar-Workshop on Micro CDS/ISIS for Beginners (Operational Level)  
Date: October 16-18, 1989  
Venue: National Engineering Center University of the Philippines
5. Ferdinand C. Gutlay  
Position: Clerk (casual)  
Title of Seminar: Transparency in Records Management  
Date: October 9, 1989  
Venue: National Library Auditorium
6. Marissa P. Camposano  
Position: Cashier III  
Title of Seminar: Seminar/Workshop on the Technique and Method of Transfer, Removal and Termination of Property Accountability in Government  
Date: November 18, 1989  
Venue: Manila Garden

SUMMARY OF NAST BUDGET CY 1989

Particulars	Appropriation	%	Expenses	%	Savings
A. By function/Activity					
PROMOTION AND RECOGNITION OF SCIENTIFIC AND TECHNOLOGICAL EFFORTS AND ACHIEVEMENT	5,769,000	72	4,731,128	65	1,037,872
ADVISORY SERVICES	128,000	2	177,600	2	(49,600)
INTERNATIONAL LINKAGES	614,000	8	596,407	8	17,593
GENERAL ADMINISTRATION	1,510,000	18	1,803,379	25	(293,379)
TOTAL	<u>8,021,000</u>	100	<u>7,308,514</u>	100	<u>712,486</u>
B. By Expense Class					
PERSONAL SERVICES	814,000	10	831,412	11	(17,412)
MAINTENANCE AND OTHER OPERATING EXPENSES	6,617,000	83	5,662,800	78	954,200
CAPITAL OUTLAY	590,000	7	814,302	11	(224,302)
TOTAL	<u>8,021,000</u>	100	<u>7,308,514</u>		<u>712,486</u>

## DIRECTORY OF ACADEMICIANS

1. Encarnacion Alzona  
1938 Taft Avenue  
Pasay City
2. Clare R. Baltaza  
Department of Entomology  
College of Agriculture  
UPLB, College, Laguna
3. Solita F. Camara-Besa  
603 Julio Nakpil Street  
Malate, Manila
4. Benjamin D. Cabrera  
Institute of Public  
Health, UP Pedro Gil  
Street, Ermita, Mla.
5. Filomena F. Campos  
Ibayo Farms  
Dasmariñas, Cavite
6. Paulo C. Campos  
Medical Center Manila  
1122 Gen. Luna Street  
Manila
7. Magdalena C. Cantoria  
10 Malinis Street  
UP Village, Quezon City
8. Gelia T. Castillo  
Department of Agriculture,  
Education and Rural Studies  
College of Agriculture  
UPLB, College, Laguna
9. Lourdes J. Cruz  
Marine Science Institute  
Albert Hall, UP Diliman  
Quezon City
10. Conrado S. Dayrit  
United Laboratories, Inc.  
P.O. Box 3594  
Manila
11. José Encarnacion, Jr.  
School of Economics  
UP Diliman  
Quezon City
12. Pedro B. Escuro  
Mt. Makiling Street  
Los Baños Subdivision  
College, Laguna

13. Raymundo A. Favila  
24 Freedom lane  
Intervilled II, Culiati  
Quezon City
14. Edito G. Garcia  
Institute of Public  
Health, UP Pedro Gil  
Street, Ermita, Mla.
15. Carmen Ll. Intengan  
1736 Banyan Road  
Dasmariñas Village  
Makati, Metro Manila
16. Emil Q. Javier  
The Hague  
Netherland
17. Bienvenido O. Juliano  
Department of Cereal  
Chemistry, Int'l.  
Rice Research Institute  
College, Laguna
18. Jose O. Juliano  
Interphil Laboratories,  
Inc., Sucat, Parañaque
19. Quintin L. Kintanar  
Department of Health  
San Lazaro Compound  
Rizal Avenue, Sta.  
Cruz, Manila
20. Alfredo V. Lagmay  
Department of Psychology  
College of Social Sciences  
and Philosophy, UP Diliman  
Quezon City
21. Ricardo M. Lantican  
Department of Science and  
Technology, Bicutan,  
Taguig, Metro Manila
22. Clara Y. Lim-Sylianco  
Department of Chemistry  
College of Science  
UP Diliman, Quezon City
23. Melecio S. Magno  
12 Matimtiman Street  
Teacher's Village  
Quezon City
24. Tito A. Mijares  
30 Lincoln Street  
San Francisco del Monte

- |                                |                                                                                             |
|--------------------------------|---------------------------------------------------------------------------------------------|
| 25. Fe del Mundo               | Children's Medical<br>Center, 11 Banawe,<br>Quezon City                                     |
| 26. Quirino O. Navarro         | Phil. Nuclear Research<br>Institute, Don Mariano<br>Marcos Avenue, Diliman,<br>Quezon City  |
| 27. Bienvenido F. Nebres, S.J. | Department of Mathematics<br>Ateneo de Manila University,<br>Loyola Heights,<br>Quezon City |
| 28. Luz Oliveros-Belardo       | 1001 C. Aragon Street<br>Malate, Manila                                                     |
| 29. Faustino T. Orillo         | Department of Plant<br>Pathology, College of<br>Agriculture, UPLB,<br>College, Laguna       |
| 30. Dolores A. Ramirez         | Graduate School<br>UPLB, College, Laguna                                                    |
| 31. Alfredo C. Santos          | 1276 Syson Street<br>Paco, Manila                                                           |
| 32. Joventino D. Soriano       | #2 Aguinaldo Street<br>UP Campus, Quezon City                                               |
| 33. Dioscoro L. Umali          | Batong Malake<br>College, Laguna                                                            |
| 34. Jose R. Velasco            | Imus, Cavite                                                                                |
| 35. Carmen C. Velasquez        | P-11 Area 14, Roces Ave.<br>UP Diliman, Quezon City                                         |
| 36. Benito S. Vergara          | Int'l. Rice Research<br>Institute, College<br>Laguna                                        |
| 37. Prescillano M. Zamora      | Institute of Biology<br>Biological Division<br>UP Diliman, Quezon City                      |

# NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY

## National Scientists

Teodoro A. Agoncillo, Litt. D. (*honoris causa*)+  
Encarnacion Alzona, Ph.D.  
Julian A. Banzon, Ph.D.+  
Jose Encarnacion, Jr., Ph.D.  
Francisco M. Fronda, Ph.D.+  
Hilario D.G. Lara, M.D., Dr P.H.+  
Fe del Mundo, M.D.  
Geminiano T. de Ocampo, M.D.+  
Luz Oliveros-Belardo, Ph.D.  
Eduardo A. Quisumbing, Ph.D.+  
Casimiro del Rosario, Ph.D.+  
Juan S. Salcedo, Jr., M.D. D.Sc. (*honoris causa*)+  
Alfredo C. Santos, Dr. phil.+  
Francisco O. Santos, Ph.D.+  
Dioscoro L. Umali, Ph.D.  
Gregorio T. Velasquez, Ph.D.+  
Carmen C. Velasquez, Ph.D.  
Gregorio Y. Zara, D.Sc.+  
Paulo C. Campos

## Academicians

Teodoro A. Agoncillo, Litt. D. (*honoris causa*)+  
Encarnacion Alzona, Ph.D.  
Clare R. Baltazar, Ph.D.  
Julian A. Banzon, Ph.D.+  
Benjamin D. Cabrera, M.D., M.P.H.  
Solita Camara-Besa, M.D., M.S.  
Paulo C. Campos, Ph.D.  
Filomena F. Campos, Ph.D.  
Gelia T. Castillo, Ph.D.  
Lourdes J. Cruz, Ph.D.  
Amando M. Dalisay, Ph.D.+  
Conrado S. Dayrit, M.D.  
Jose Encarnacion, Jr., Ph.D.  
Pedro B. Escuro, Ph.D.  
Raymundo A. Favila, Ph.D.  
Francisco M. Fronda, Ph.D.  
Edito G. Garcia  
Emerita V. de Guzman, Ph.D.  
Carmen Ll. Integan, Ph.D.  
Emil Q. Javier, Ph.D.  
Bienvenido O. Juliano, Ph.D.  
Jose O. Juliano, Ph.D.  
Quintin L. Kintanar, M., Ph.D.  
Alfredo V. Lagmay, Ph.D.  
Ricardo M. Lantican, Ph.D.  
Hilario D.G. Lara, M.D., Dr. P.H.+

## NAST Executive Council (1989-1992)

Bioscoro L. Umali - President  
Conrado S. Dayrit - Vice-President  
Joventino D. Soriano - Secretary  
Jose Encarnacion, Jr. - Member  
Bienvenido O. Juliano - Member  
Magdalena C. Cantoria - Member  
Faustino T. Orillo - Member

Clara Y. Lim-Sylianco, Ph.D.  
Cecilio F. Lopez, Dr. phil.+  
Melecio S. Magno, Ph.D.  
Tito A. Mijares, Ph.D.  
Fe del Mundo, M.D.  
Quirino O. Navarro, Ph.D.  
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Jose N. Rodriguez, M.D.+  
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Carmen C. Velasquez, Ph.D.  
Gregorio T. Velasquez, Ph.D.+  
Benito S. Vergara, Ph.D.  
Gregorio F. Zaide, Ph.D.+  
Prescillano M. Zamora, Ph.D.  
Gregorio Y. Zara, D.Sc.+

\*deceased

Address: Mezzanine Floor  
TAPI Bldg.,  
DOST Compund  
Bicutan, Taguig, M.M.  
Tel. No. 822-0961 to 67  
Local 242