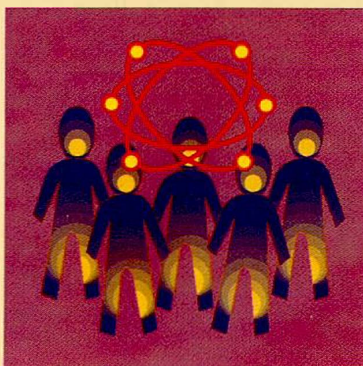
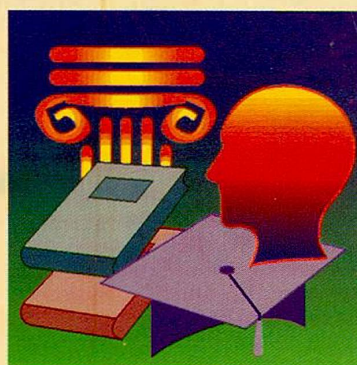
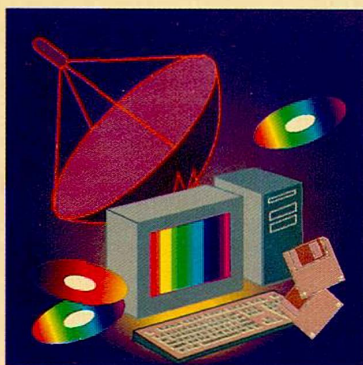
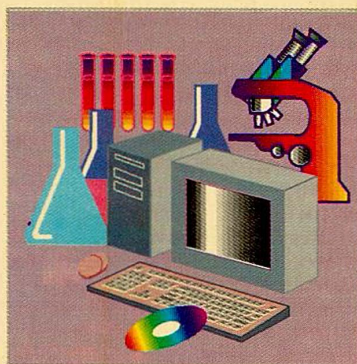




Philippine
Council for
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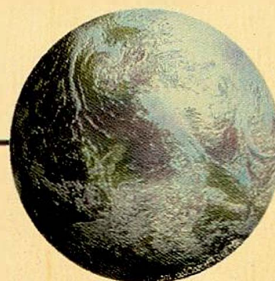
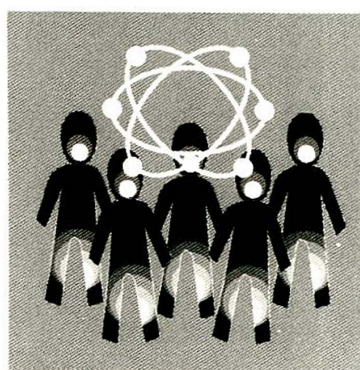
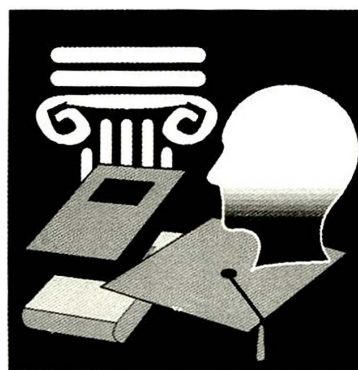


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Chairman's Message

I would like to commend the Philippine Council for Health Research and Development (PCHRD) for its steady commitment in ensuring the health and well-being of all Filipinos through the years.

For 1996, PCHRD has concentrated its efforts in the development and commercialization of chiral drugs in time for the 1998 Philippine Centennial celebrations. Likewise, the Council has devoted considerable emphasis to make HERDIN, its online health information retrieval service, more accessible to an increasing number of potential users in government, academe, and industry.

The changing times demand that we exploit the potential of harnessing scientific knowledge and technological applications in achieving our national development objectives. As the lead agency mandated to chart and implement the course of health R&D in the Philippines, I congratulate PCHRD for persevering in its noble mission in support of the vision that is Philippines 2000.

Mabuhay ang PCHRD!


WILLIAM G. PADOLINA
*Secretary, DOST and Chairman,
PCHRD Governing Council*



Executive Director's Message

With the international attention that the country got from its hosting of the series of meetings for the Asia Pacific Economic Conference came the consciousness of the concept of globalization — of being aware what the rest of the world is doing, so we can, sensibly, figure out our place in the global picture.

We are pleased to note that this consciousness has seeped into the Council. Let me cite some examples.

One of our technology adopters of the production technology for *lagundi*, a medicinal plant used as anti-cough and anti-asthma, has successfully launched the product (trade name: *Ascof*) in the local market. This effort has not gone unnoticed abroad that this adopter-company is now ready to export *Ascof*.

We are also joining the world's race of producing chiral drugs,

starting with Ibuprofen. We were able to start with this undertaking because S&T (PCHRD) has joined forces with the industry and the academe. Even at this early stage, we are already reaping the benefits of working together and exchanging information.

In the area of producing recombinant vaccine for tropical diseases (e.g. malaria), we are looking for international partners. Teamwork has taken an international dimension and we have to take this route if we want our resources to go a long way.

In the use of information technology, PCHRD continued its lead. Last year, the PCHRD Homepage — the Council's window to the world — bested other DOST agencies as it won the first prize. We also embarked on producing our own HERDIN CD-ROM, another first, which we hope to sell to the international market.

These accomplishments would not have been possible if we did not have world-class professionals working with us. In fact, we honored two groups of fine researchers who won the *first* Outstanding Health Research

Awards for biomedical and health services categories, respectively.

Philippines, *rated world-class*. This has been our running theme as we looked more closely into our own programs and our performance in 1996.

In the next years, we see ourselves continuing to adopt this theme, but with more vigor, as we want the world to keep its focus on the Philippines — of its world-class works, by world-class health researchers and managers.

For all these, we thank all our partners. Their help had been invaluable. We hope that they will continue to work with us as we carve our niche in the world's scheme of things.


PACITA L. ZARA
Executive Director

What's Exciting for the Centennial Celebration in 1998

Before 1995 ended, the Council identified two research areas where it can generate research results of centennial impact -- vaccines and biologicals for malaria, and tuberculosis control. Thus, in 1996, PCHRD consolidated its resources behind these two programs for two major reasons. First, malaria and TB remain as the leading causes of morbidity and mortality. Second, globally, there were promising technological breakthroughs where the country can participate in to

address these public health concerns.

On vaccines and biologicals, the concentration in 1996 was on the land site development at UP Los Banos where the Biologicals Production Service of the Department of Health (DOH-BPS) has moved. A cGMP pilot production plant for recombinant technology for the production of vaccines and biologicals will be an integral part of the DOH-BPS facility.

The malaria research team benefited from the participation of Dr. Fidel Nayve (UP Biotech) and Dr. Wilfred Tiu (UP-College of Public Health) in the Workshop for Pharmaceutical Manufacturing last September spon-

sored by the Hong Kong Institute of Biotech, Ltd; as well as from the visit of two consultants: Dr. Howard Engers of the World Health Organization, and Dr. Alan Saul of the Queensland Institute for Medical Research in Australia.

The National TB Study Group, on the other hand, has gelled into a collegial body and has firmed up its research agenda to combat the TB problem. PCHRD funded several researches from this agenda. One was the study on the "*Efficacy of Mycobacterium vaccae as an immunotherapeutic agent in the management of PTB,*" which aims to enhance the susceptibility of pulmonary TB (PTM) cases to therapeutic drugs using *M. vaccae*.

The other researches aimed to strengthen the TB control program by:

1. determining the drug resistance of *Mycobacterium tuberculosis* to different antibiotics of sputum positive PTB cases ("*Community based-surveillance for drug resistance of Mycobacterium tuberculosis*").

2. finding a more efficacious PTB treatment regimen ("*Compara-*



son of *quaruple vs triple vs. short treatment for PTB: a multicenter study*”),

3. determining the compliance behavior of patients (“A study on patient compliance to PTB treatment regimen”), and,

4. determining the clinical, radiological, microbiological, and pathological characteristics, susceptibility and drug resistance patterns of *Mycobacterium tuberculosis* and other forms of *Mycobacterium* among HIV patients (“Clinical, radiological, microbiological, and pathological features of drug susceptible and resistant *Mycobacterium tuberculosis* and *Mycobacterium* other than tuberculosis infection in patients with HIV infections”).

In the middle of the year, an exciting development in the international chiral drugs market gave PCHRD the opportunity to bring together expert-chemists from the industry and the academe to join the world’s race in producing enantiomerically pure drugs, starting with Ibuprofen, a commercial drug known for its non-steroidal, anti-inflammatory, and analgesic properties.

This industry-driven research on chiral drugs was

formally started in November with a signing of a Memorandum of Agreement. The partnership of S&T (PCHRD), industry (United Laboratories, Inc.), and the academe (UP System) has kept the upbeat mood of the project. With these three sectors working together and exchanging information, there’s optimism as to the potential benefit that this leading edge technology can bring to the Filipinos - much safer and fast-acting drugs.

The industry-driven research on chiral drugs, a partnership of S&T, industry, and academe, can bring the Filipinos much safer and fast-acting drugs.

Chiral drugs are chemical compounds with both beneficial and harmful components. The objective of the technological race of splitting the compound is to remove the harmful, and enhance the beneficial effect of the drug.

Research Output: How Did We Fare?

The National Health R&D Plan (NHRDP), which was formulated by the health research community, consistently adhered to the Science and Technology Agenda for National Development (STAND).

The Council’s STAND priorities focus primarily on health products development on pharmaceuticals, vaccines, biological and biomedical devices, nutritional products and herbal drugs. Under the Traditional Areas of Concern (TAC), PCHRD focuses on the generation of information on the epidemiology, management, prevention and treatment, and socioeconomic and political concerns and priority diseases.

PCHRD directly handled 49 research projects — 36 under the PCHRD GIA, and 13 under DOST GIA. In terms of numbers, 73% were projects under STAND, and 27% under TAC.

The cost of the 49 projects stood at P44.423M, 83% of which were spent on projects under the STAND priority areas.

For the year, a total of four (4) health R&D projects were completed as follow:

Iron absorption from FVRice-Iron fortified. Iron bioavailability from unfortified and FVRice iron fortified based meals was determined by simultaneous determination of ^{55}Fe and ^{59}Fe in blood in 20 healthy human adult subjects. Considering the total non-heme iron content of the meals, there was a significant increase in the amount of iron absorbed from the FVRice-iron fortified rice based meal compared to the unfortified one, i.e. from 0.3 mg to 0.4 mg. On the basis of these results, estimation done for iron-deficient children revealed that consumption of 120-150 g rice daily may satisfy about 65-81% of the iron requirement of 1-3 year old children, thus exceeding the goal of 40-50% RDA for this age group. The use of ferrous sulfate as fortification iron to rice seems to be effective, supplying an appropriate amount of absorbable iron.

Effect of Tamarindus indica crude leaf extract on systemic blood pressure and hemodynamics of the rat superior mesenteric microcirculation, in vivo. The effect of crude aqueous leaf extracts of *Tamarindus indica* (TI) was tested on 85 male Sprague-Dawley rats, weighing around 250 grams each. Results showed that aqueous leaf extracts of TI at concentrations of 0.1% did not



produce any significant changes in mean blood pressure readings or in mean arteriolar diameters of rat mesenteric resistance vessels. Concentrations of 10% or 1% weight/volume produced a consistent reduction in mean systemic blood pressure of the rat when given after baseline measurements were made.

Seed gum from Leucaena leucocephala L. (Ipil-ipil) as an excipient in pharmaceutical dosage forms. Ipil-ipil seed gum (*Leucaena*) was found to be comparable with the imported gum (guar gum) currently used by the local pharmaceutical industry. Results also showed the plant's potential as an excipient in pharmaceutical drug formulations (e.g. syrups and suspensions).

High performance liquid chromatography (HPLC) determination of serum Penicillin levels in Filipino children with rheumatic heart disease/rheumatic fever (RHD/RF). Serum levels of 37

patients \leq 18 years of age with rheumatic fever and rheumatic heart disease on a regular follow up for benzathine Penicillin G (BPG) were determined using the HPLC Waters Associate Liquid Chromatography System. Results showed that peak serum levels were noted on day 14 (8.70 ug/ml) which declined on day 21 (7.69 ug/ml) and returned to baseline values on day 28 (5.15 ug/ml). No significant change was noted on day 14 and day 21 but a highly significant decrease from day 21 and day 28 ($p \leq 0.05$). Patients on day 21 had BPG serum concentrations >0.03 ug/ml in 90.7% and 59.4% on day 28. This trend seems to suggest that patients should indeed receive BPG every 21 days based on the pharmacokinetics of the drug.

And the Winners Are...

Recognizing excellent research, this is one way wherein PCHRD brings into the attention

of the user community the world-class works of Filipino health researchers. The award and the event are incentives in themselves for seasoned researchers to continue generating world-class works, and for the next-generation and beginning researchers to aspire for.

The First Outstanding Health Research Award

The 1996 *First Outstanding Health Research Award* (OHRA) went to the Liver Study Group (LSG) of UP Manila, headed by Dr. Ernesto O. Domingo, for the biomedical research category; and Health Finance Development Project of the Department of Health (DOH), with Dr. Romeo M. Cruz as project manager, in the health services category.

The LSG's comprehensive study of hepatocellular carcinoma provided the basis for the DOH's policy on hepatitis B immunization, and, consequently, for the mass vaccination against HBV which is currently being carried out by the DOH Expanded Program on Immunization.

The technical inputs of the Health Finance Development Project were the bases for the crafting of RA7875 or the National Health Insurance Law.

The LSG also studied hepatitis A, hepatitis C, and hepatitis D. Results of their studies led to the development of the technology for the rapid epidemiologic assessment of the HBV carrier state and to the transfer of two other technologies, namely: the production of diagnostic reagents, and the prototype manufacture of HBV-DNA probes.

The Health Finance Development Project studied the economics of implementing a national health insurance program, and the feasibility of a province-wide health insurance program for those not covered by the Social Security System or the Government Service Insurance System's Medicare. These technical inputs were the bases for the crafting of RA7875 or the National Health Insurance Law.

1996 Marsman Professorial Chair

The 1996 Marsman Professorial Chairholder was Dr. Guillerma A. Manigbas, an Associate Professor of the De La Salle University College of Medicine (DLSU-CM). Dr. Manigbas holds a master's degree in Health Professions Education (MHPed) at the National Teacher Training Center for Health Professions (NTTC-HP) at the University of the Philippines Manila. She finished her Doctor of Medicine (M.D.) degree at the Far Eastern University-Dr. Nicanor Reyes Medical Foundation and her undergraduate degree in Medical Technology at Saint Louis University in Baguio City (cum laude).

1996 Student Research Awardees

Five of the 25 project proposals which vied for the Student Research Awards in Indigenous Sources of Medicine were chosen as the 1996 awardees of the PCHRD-Pharmaceutical and Health Care Association of the Philippines (PHAP) Award.

These projects were:

Neurophysiologic effects of the alkaloid component of mahogany seed extract, which aims to isolate the alkaloid component of mahogany seed extract;

The effect of Ipomea aquatica Forsk. (Kangkong) leaf extract on blood glucose levels of alloxan-induced hyperglycemic white mice, which will determine the effect of Ipomea aquatica (Forsk) leaf extract on blood glucose levels of alloxan-induced hyperglycemic white mice;

An in vivo study of the effects of Apium graveolens Linneaus leaf extract on serum uric acid levels

of potassium-oxanate induced albino rats, which aims to determine the effect on serum uric acid levels of Apium graveolens Linn. on albino rats;

An in-vivo study of the effect of 100% Orthosipon aristatum (Kabling-gubat) leaf extract on blood uric acid levels of pyrazinamide-induced hyperuricemic rabbits, which aims to determine the effect of Orthosipon aristatum leaf decoction on the blood uric acid levels of pyrazinamide-induced hyperuricemic male albino rabbits; and

An in vitro study on the effect of Apium graveolens seed (celery) extract on the isolated bronchial smooth muscle of cat, which aims to

determine the bronchodilator property of celery seeds.

Winners of the 7th Scientific Poster Exhibit on Health and Related Technologies

The Food and Nutrition Research Institute (FNRI) and the University of Santo Tomas (UST) bested other entries in the professional and student categories, respectively. FNRI's study on "*FVRice: Iron fortified rice for the prevention and control of anemia*" bagged the first prize. The second place was won by the "*Monoclonal antibody based detection technique for monitoring red tide toxin causal organism(s)*" entry of BIOTECH, UP Los Banos. The third place went to "*The development of immunodiagnostic test for the detection of antibodies against hepatitis B core antigen*" entry of the Research Institute for Tropical Medicine. The winners received P15,000, P10,000, and P7,000 respectively, plus a trophy each.

In the student category, the Institute of Physical Therapy, UST won the first prize with their



entry "An augmented auditory feedback footwear: a gait training device for diabetic patients." The second place winner was the entry "Bacterial cardiolipin for serodiagnosis of syphilis," of UST. "The Centers for Disease Control Nosocomial Infection Surveillance (CDC-NNIS), surgical patient risk index score and surgical site infection in UERMMMC" entry of the University of the East Ramon Magsaysay Memorial Medical Center won third place. The groups were awarded P10,000, P7,000, and P5,000, respectively and a trophy each. An additional P5,000.00 cash and a trophy were given to the best-packaged technology, "Bacterial cardiolipin for serodiagnosis of syphilis."

The Making of a Researcher

Who's going to do the research? Do we have enough people to do what's in our research agenda? Are we spending enough for the people who'll carry out the research tradition?

Since enticing and molding people into a research career is a long and risky process, PCHRD's responses to these questions may take time for people to appreciate.

However, with over a decade of its capability development program, the Council is proud to note of the world-class track record of some of the PCHRD grantees who have found excellent niches in their respective research fields.

To increase the country's research pool, and ensure a critical mass, PCHRD continued its efforts, and expanded some of its human resource and institution development program. Last year, PCHRD supported 36 scholars, 19 of them were new grantees. Including this present crop, a total of 75 scholars had been supported since 1982.

There were 15 newly approved thesis grantees. Of those ongoing, three dissertations and six theses were completed.

The Council also conducted 12 short-term courses for 422 researchers, medical practitioners, pharmacists, and information managers. The courses included biomedical research methodology, bioassay and phytochemical testing, research management, medical mycology, genetics and global import, and instrumentation, among other things.

A revitalized PCHRD Research Fellowship Program has been launched in November with bigger incentives for fellows and host-scientists alike. The program gives research opportunities for beginning researchers to work with mentor-scientists. The program



provides for a monthly stipend of P10,000 to the fellow; travel allowance from fellow's residence to the training institution (one round trip per year for those from the regions); financial support for the project not exceeding P200,000.00; and honoraria for the host scientist.

Other opportunities open for beginning researchers to undertake research (on a limited scale of P 50,000.00 per project) are through the Biomedical Research Methodology Courses conducted by PCHRD and through the Regional Research Fund.

For the year, a total of 16 biomedical projects submitted as partial fulfillment of the 4th Biomedical Research Methodology Course were approved. Under the Regional Research Fund mechanism, eight projects were approved.

PCHRD Scholars, as Part of the PCHRD Family

PCHRD's interest in the career of its scholars and grantees does not start and end with a scholarship grant. As part of the PCHRD family, the Council seeks to

continuously dialogue with the grantees, even after graduation, to improve its programs.

A first time, the Council gathered together its scholars to a forum in July to get their feedbacks on the scholarship program. The consultation also served as a venue for the scholars to meet socially and to establish a support system.

On a more social footing, the scholars met again last December to celebrate Christmas together.

Mini-PCHRD in the Region

The establishment of the Regional Health R&D Committees (RHRDCs) is a scheme implemented by PCHRD to decentralize decision-making on and implementation of projects that better respond to the needs of the region. Presently, there are six RHRDCs -- in Northern Luzon, Regions 6, 7, 8, 11; and the National Capital Region (Metro Manila Health Science Research Community).

The year 1996 saw the revitalization of RHRDC- 8. A concept paper for the establishment of a Tropi-

cal Diseases Research Center has been developed and the training aspect operationalized. Four seminars which provided information on the status of diseases endemic in the area were organized, while five proposals were generated and implemented.

Research Philanthropy is Alive

The first link that Gruppo Medica Inc. had with health S&T was through the technology transfer program of PCHRD — as one of the technology adopters, in 1995, of *lagundi*, a tablet

for cough and asthma. This year, Gruppo Medica extended its involvement in health research when it launched the *Gruppo Medica Inc. Award for Outstanding Research on Herbal Medicine*.

Gruppo Medica believes that a thesis is an excellent opportunity for students to contribute to national development. Thus, the company has earmarked rewards to relevant and innovative research on herbal medicine undertaken by undergraduate students of chemistry and pharmacy that

can lead to practical and/or commercial applications. The first prize winner will receive P30,000; second prize winner, P20,000.00; and third prize winner, P10,000.

The People That Matters, the PCHRD Clients

PCHRD believes that all the efforts in health R&D is in vain if it does not benefit its clients, -- first and foremost, the Filipino people; and the people of the world.

Marketable Products for Consumers

In October 1996, Pascual Laboratories, Inc., a Filipino pharmaceutical company, released into the market *Ascof*, the brand name of *lagundi*, a medicinal plant for cough and asthma. Effective and safe as other leading brands of cough remedies, brisk sales of *Ascof* had been reported. With a good market report, Pascual Laboratories is now poised to enter into the export market.

PCHRD also had initial talks with Bayer

Philippines who had expressed interest to commercialize *atis* lotion as mosquito repellent. Bayer is not only looking at the Philippine market but an Asian market as well.

So the Public May Know, a Healthy Advisory


The Council beefed up its quick response mechanism of providing the public, and the decision-makers, information from the S&T community that clarifies, and allays public fears on issues relating to the most pressing health concerns of the day.

Through its Hazard Watch, PCHRD released comprehensive reports and advisories on typhoid fever, cholera, dengue, red tide, potassium bromate on bread, puffer fish poisoning, pollution (heavy metals) from alcohol plants, hazards from electromagnetic fields, ebola virus from Philippine monkeys, Marcopper toxic waste, measles, and non-neonatal tetanus.

The world has a window to this information through the Internet-searchable PCHRD homepage.

Straight from the heart of nature, we bring you **ASCOF**, a revolutionary **Natural Medicine** that is extensively researched and clinically proven to effectively relieve **cough and asthma**.

LAGUNDI ASCOF
Cough Remedy/ Anti-asthma



INDICATIONS
For relief of cough due to common cold, flu and mild to moderate acute bronchitis.
For relief of reversible, mild to moderate bronchospasm (rescue medication) in adults and children 2 years of age and older with obstructive airway disease such as asthma, chronic bronchitis and other broncho-pulmonary disorders.

CLINICAL STUDIES
Phase III - double blind placebo controlled trial has shown bronchodilator effect and antitussive effect.

DOSE AND ADMINISTRATION
Adults: 2 tablets 3-4 times a day
Children: 7 to 12 years old: 1 tablet 3-4 times a day or as prescribed by the physician
2 to 6 years old: dosage is maintained at 15 mg/kg of body weight 3 times a day. The dosage should not exceed 250 mg 3 times a day. The tablets may be crushed and mixed with desired small amount of juice prior to administration.

FORMULATION
Each tablet contains powdered *Lagundi* leaves - 300 mg.
Panax lagundi L. (Fam. Verbenaceae)

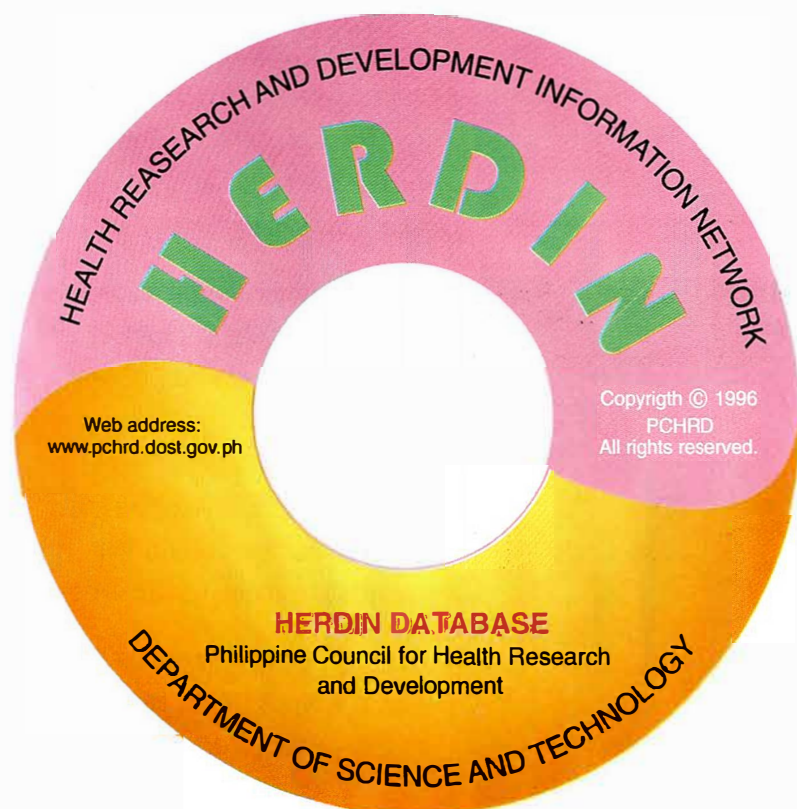
• CONTRAINDICATIONS: There are no known contraindications.
• SIDE EFFECTS: Only mild side effects on the respiratory system, such as dryness, throat irritation and occasional stomach discomfort.
• PRECAUTIONS: Frequency of asthma attacks may increase and patients should seek medical attention.
• AVAILABILITY: Box of 60's in retail stores.

Listening to the Researchers and Keeping them Updated

The PCHRD, through its Health Research and Development Information Network (HERDIN), has been serving the information needs of the health research community since 1990. Yearly, the demand has been increasing.

Despite a two-month break, when the PCHRD Library was closed for office renovation, 4,784 search requests from 2,230 clients were served during the year.

An alternative media, the HERDIN CD-ROM prototype, was launched in December and went into beta-testing by 14 medical institutions in Metro Manila, Cebu, and Davao. HERDIN CD-ROM contains the bibliographic database of 21,000 records of published Philippine literature on health and related topics, in abstract format. Full text



Health research has never been easier!

HERDIN ONLINE

FOR MORE INFORMATION CONTACT

PHILIPPINE COUNCIL FOR HEALTH RESEARCH AND DEVELOPMENT
Department of Science and Technology

BICUTAN, TAGIG, METRO MANILA
837-00-57 / 837-29-24 / 837-26-71 TO 83 loc. 2116
HOME PAGE: <http://www.pchrd.dost.gov.ph>

Activities listed on the globe:
 - Researcher's notes
 - 8:00 AM Check/answer e-mail; log in to HERDIN.
 - 10:00 AM Chat with Dr. Vicente of Davao Med; log in to HERDIN.
 - 12:00 NOON Check Phil/world research on TB; log in to HERDIN.
 - 4:00 PM View online conference on malaria vaccine; log in to HERDIN.
 - 7:00 PM Surf Internet; See latest on culture and entertainment; log in to HERDIN.

version of selected 1994 articles were also included in the CD-ROM.

These HERDIN CD-ROM and databases were developed because of the Council's user orientation. Getting users' feedbacks was a regular part of the information servicing program of the Council. In 1996, PCHRD staff who were involved in the program went out to have face-to-face interviews with the users of HERDIN services.

The users' survey proved to be a good opportunity for PCHRD to know how satisfactory its HERDIN service was, what things were missing, and how improvements can be inputted into the service. Although the HERDIN clients were generally satisfied with the service, they believed the following

improvements will further enhance HERDIN offerings to wit: speeding up the turnaround time for full-text literature requests; making the database interfaces more user-friendly; enhancing the library collections; and making HERDIN accessible in the rural areas.

The Means We Used to Reach Out to the Clients

The Council used traditional media like print and broadcast as part of its information dissemination activities. In 1996, the Council linked with independent account executives engaged in newspaper advertising, a costless strategy, to come up with a comprehensive feature on PCHRD in the *Philippine Daily Inquirer*. Likewise, a link with



magazine publishers gave HERDIN media exposure in the maiden issue of *Rx Magazine*, the first magazine in the country exclusively designed for pharmacists.

PCHRD also undertook publishing activities on its own. The 1996 edition of *The National Guidelines on Biomedical/Behavioral Research* was launched during the National Science and Technology Week in July. An output of the National Ethics Committee, the book seeks to promote good ethical practice in

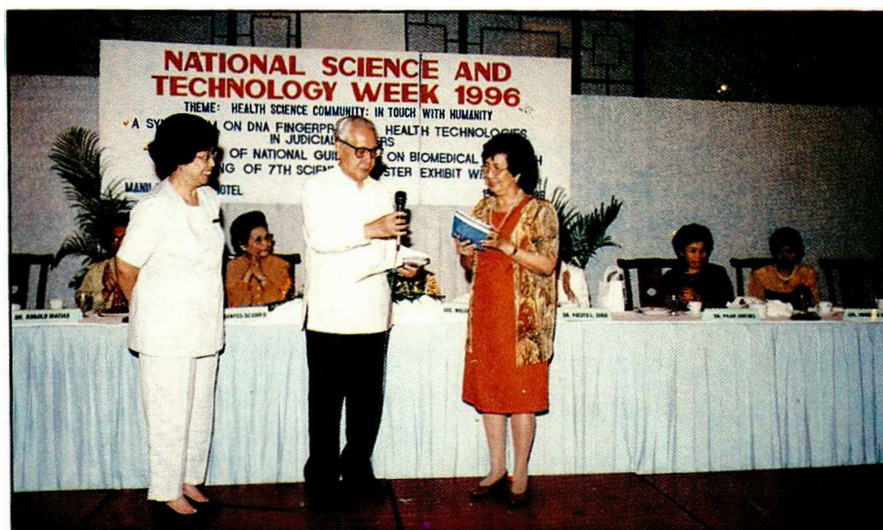
scientific research. It included new issues on ecological concerns, new technologies, and new diseases.

Through the Council's publication support program, the book entitled *Capacities and Vulnerabilities - Disaster Health Management in the Philippines* was published. The book records the recent developments of public health efforts addressing disaster related issues in the Philippines.

In broadcast media, the Council contributed three episodes in the Science and Technology segment of *Business and Leisure* aired over Channel 2. These episodes were on PCHRD, technology transfer and medicinal plants; HERDIN Online; and *atis* lotion and hemoglobinometer.

The Council also conducted several symposia in cooperation with the Metro Manila Health Science Community. The symposium on DNA Fingerprinting demonstrated how techniques in biotechnology are used in the country's criminal justice system.

The other symposia dealt on topics such as Ogawa culture technique for TB detection,



Women's Health Issues, Adolescent Health Sexuality, and Environment and Health. A symposium on the "Curative Power of Mahogany, *Malunggay* and *Ampalaya*" was held in coordination with Philippine Association for the Advancement of Science.

gum, and cerebrospinal fluid shunt were also featured in a regional techno fair in Cotabato City.

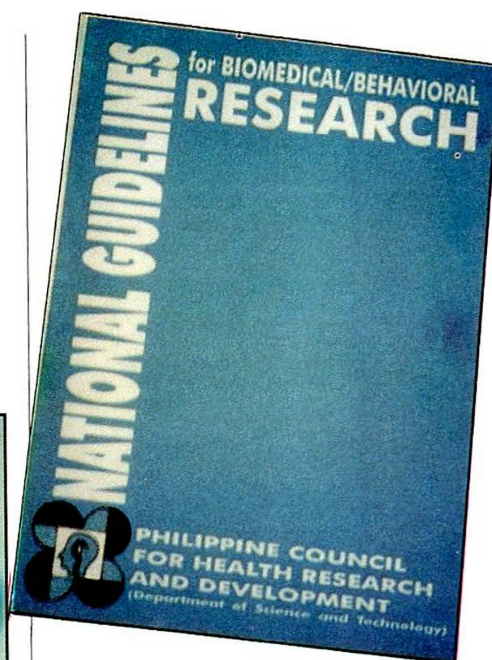
PCHRD also joined the Philippine Internet Expo in September to showcase its own



The National Science and Technology Fair served as venue for featuring the technologies on Ogawa culture technique, Continuous Passive Motion machine, diagnostic kit for syphilis, cytosieve technique, and photometer for blood chemistry for entrepreneurs, researchers, and general public alike. The technologies on cataract surgical set, hemoglobinometer, surgical bone implant, *atis* lotion, *ipil-ipil* seed

works that are now Internet-searchable, meaning -- services which people from the other parts of the world can access.

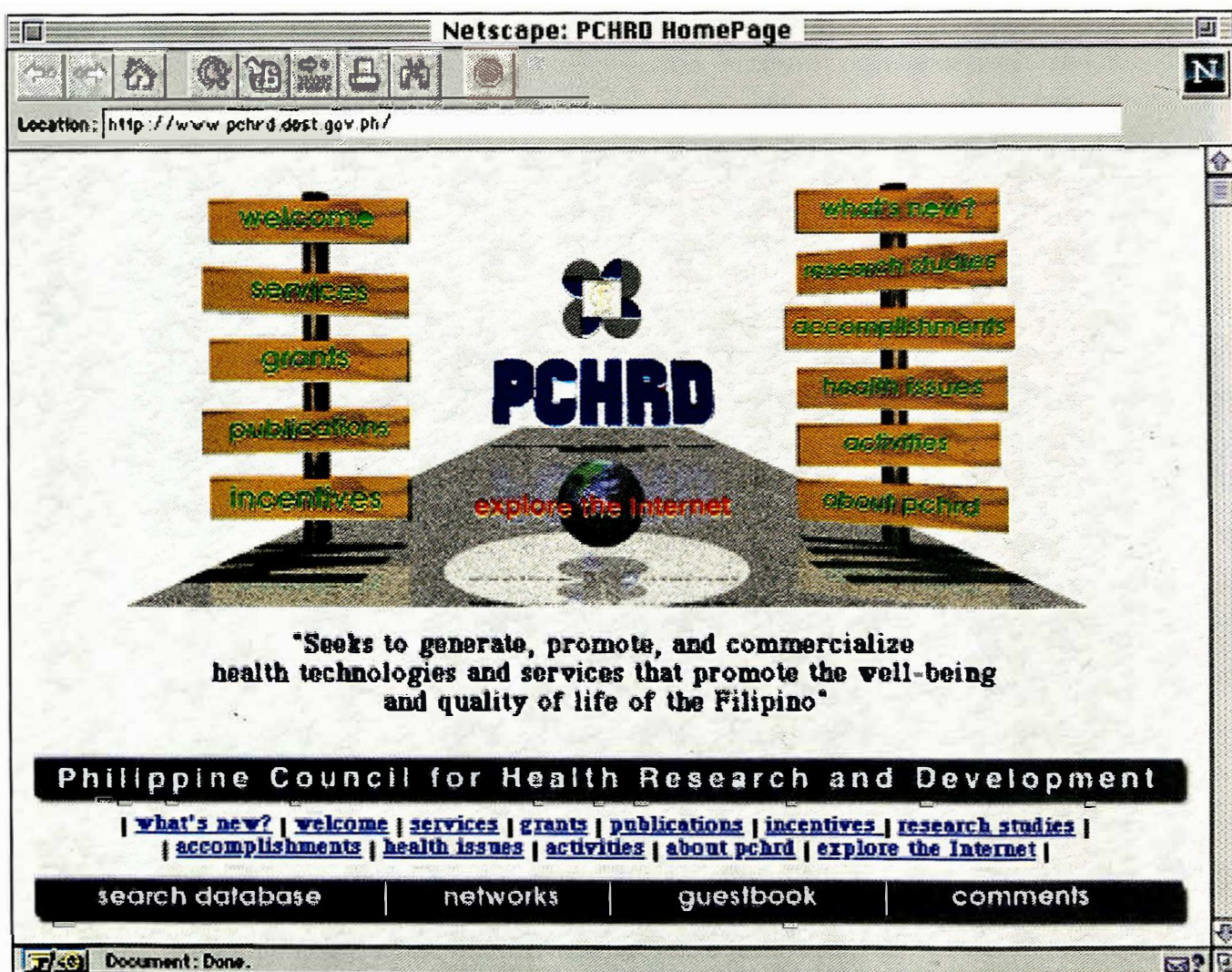
The 7th Scientific Poster Exhibit on Health and Related Technologies featured the research works of the 10 finalists in the professional and student categories at the Philippine General Hospital lobby. This annual event has provided a venue for researchers to share their work with potential



users of their results, aside from attracting would-be investors.

PCHRD has gone online in broadcasting what it is doing. People, in the country and throughout the world, who are interested to know PCHRD are encouraged to open the PCHRD Homepage at <http://www.pchrd.dost.gov.ph>.

The PCHRD Homepage bested other entries in the DOST Homepage competition held this year.



The World is a Network, All We Need to Do is Find the Right Link

PCHRD participated in the National Consensus Workshop organized by the DOH's Essential national Health Research (ENHR) Program for the formulation of the health research agenda for 1996-2000. This PCHRD-DOST link ensures that there is a good match between the biomedical and health services R&D efforts.

The Philippine Sports Commission (PSC), in cooperation with PCHRD, held the first research forum on sports medicine. The result was a draft research agenda for presentation to a larger sports medicine community. This is a new field that expands PCHRD's coverage as a national health R&D coordinator.

The Council also took part in the Second Schistosoma Japonicum Network in Molecular Biology and Vaccination meeting. The network is a loose association of researchers within and outside of the Western Pacific Region who are working on the molecular biology and vaccination aspects of the schistosome specie. The work of this group feeds

into related vaccine development programs of PCHRD.

PCHRD continued to be active in the biennial meetings of the World Health Organization-Western Pacific Region with health research councils and analogous bodies. The meetings serve as fora for exchanging information on the current research thrusts of the region as well as on research management strategies.

In the field of medicinal plants, three projects were prepared for consideration under the Republic of the Philippines-People's Republic of China 11th protocol. These projects were on: 1) *Study on the development of capability on traditional medicine*, 2) *Human resource development on screening*

and in-depths studies on medicinal plants, and 3) *Study visit on the preparation of special dietary foods to promote good health*.

Under this same bilateral agreement, a four-man team from Gunzhou province completed a 16-day visit in the country as part of the joint PROC-DOST project on the Base Establishment and Product Development of Fragrant and Medicinal Herb.

The visit resulted in the identification, and subsequent implementation, of the following programs: training in China of the technical staff of Pascual Laboratories on industrial scale production of herbal medicine; purchase by Pascual Laboratories of production equipment



from China; consultancy services of two Chinese herbal culinary experts for the Philippine Pacific Farms, Inc.; and information exchange on scientific, technical, and technological breakthrough on fragrant and herbal medicine.

In October, PCHRD hosted the 5th Management Board Meeting of the Asian Pacific Information Network on Medicinal and Aromatic Plants. The meeting came out with strategies that will help the network operate on a sustainable basis, to wit: 1) generating revenues by selling existing information products and services, engaging in consultancy, and other income-generating activities; 2) preparing product development proposals for submission to

funding agencies; and 3) developing newer resources that could generate revenues in the future.

In terms of its advisory role, the International Non-Clinical Assessment Research - Philippines (INARP) tapped the Council to provide technical advice on the establishment of an animal supply center in Batangas to ensure the availability of quality research animals.

The People That Makes Up PCHRD

People Movements Within the Governing Council

Newly-appointed DOH Secretary, Carmencita N. Reodica, became the vice chairman. Ms.

Asuncion Macalalag took over the post of Mrs. Elsa Bayani as an ex-officio representative from the National Nutrition Council. Dr. Warlito C. Vicente, director of the Institute of Primary Health Care, Davao Medical School Foundation, joined the Council as Dr. Fernando Sanchez opted to work with PCHRD in a technical advisor capacity.

The other members of the Governing Council are DOST Secretary William G. Padolina as chairman; Dr. Abraham F. Pascual, President, Pascual Laboratories, Inc.; Dr. Josefina Poblete, dean, College of Medicine, Cebu Institute of Medicine; Dr. Ernesto O. Domingo, gastroenterologist; Dr. Perla Santos-Ocampo chancellor, UP Manila; and Dr. Pacita L. Zara, PCHRD executive director.

Two More Technical Advisors

Aside from Dr. Fernando S. Sanchez of UERMMC, another new member joined the PCHRD Technical Advisors, Dr. Jane Baltazar of UP Manila.

The other technical advisors are Dr. Generoso F. Basa, Dr. Bonifacio C. Dazo, Dr. Adriano V. Laudico, and Dr. Victor C. Valenzuela.

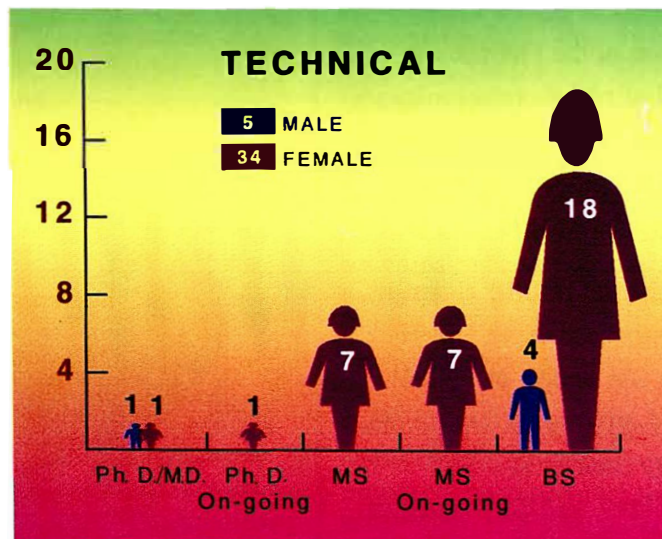
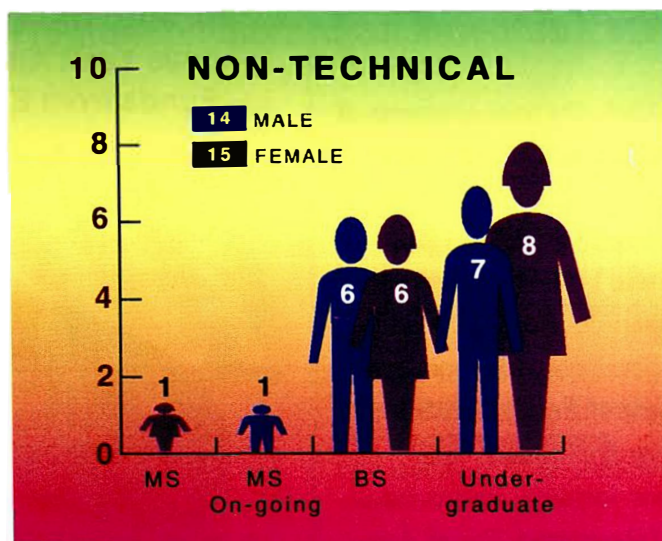


The Secretariat

PCHRD's accomplishments are due largely to the complementary and synergistic efforts of the Council's personnel.

The total staff complement of the Council totals to 68, 39 hold technical positions while 29 hold non-technical positions.

The Council is moving towards having a highly competent human resource by encouraging staff to undertake higher level of studies.



Finance Talk

For 1996, the total allotment of PCHRD was P36,525.430. Aside from government appropriations for the Council, a total of P20,692.515 was generated from external sources like the Department of Science and Technology, Department of Health, UNESCO, Technology Applications and Promotions Institute, Resins Inc., Pascual Laboratories, Foster Asia, Philippine Charity Sweepstakes Office, Zuellig Pharma Corp., Pharmaceutical Health Care Association of the Philippines (PHAP), United Laboratories Inc., Electronics Information, Marsman Foundation, and United Nations Development Program.

Of the total PCHRD allotment, P36.3M had been expended. The Council's GIA budget of P17.9M supported projects on R&D (55%), technology transfer and S&T services (12%), and S&T education and training (33%). The rest of the PCHRD allotment was spent for the operations of the national health research system, and general administration.

PCHRD RESOURCES

1996 Total Allotment

P 36,525,430

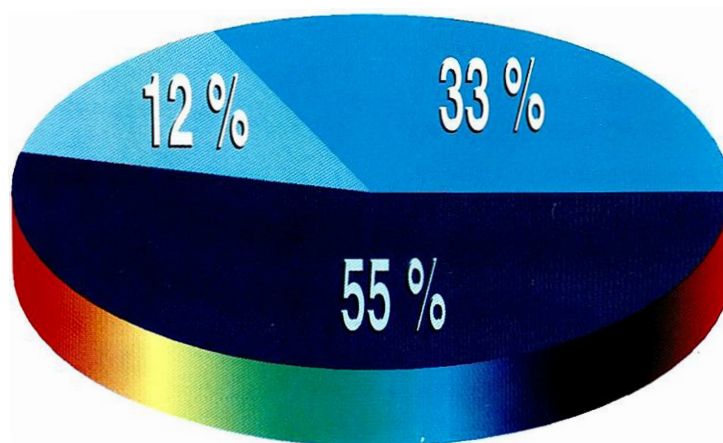
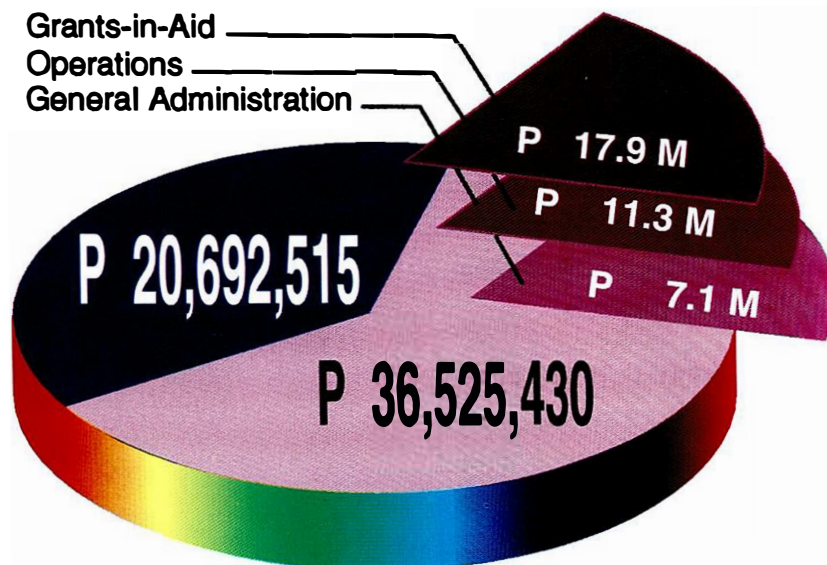
Funds from External Sources

P 20,692,515

Grants-in-Aid

Operations

General Administration



PCHRD Grants-in-Aid

Research and Development	P 9,877,022
S & T Services and Technology Delivery	P 2,073,699
S & T Education and Training	P 5,963,509

New Projects Undertaken by Beginning Researchers

Training Program on Biomedical Research Methods

NCR

Microbiological and phytochemical screening of selected medicinal plants belonging to families *leguminosae*, *euphorbiaceae*, and *compositae*

Prof. Imelda Pena

University of the Philippines-College of Pharmacy

The antidotal effect of orally-administered 50% *Amaranthus spinosus* (*urai*) leaves extract in paralytic shellfish poisoning in mice

Prof. Corazon Santos

UP-College of Medicine

Isolation and characterization of antibiotic producing bacteria from Philippine fruits

Prof. Luisa Daroy

UP-College of Public Health

Maternal role competence among post-partum adolescents in Metro Manila

Prof. Amor Ballesteros

UP-College of Nursing

The direct detection of rifampicin resistance mutations in the RPO-B gene the Philippine *Mycobacterium tuberculosis* isolates by polymerase chain reaction

Prof. Jay Dalet

UP-College of Art and Sciences

Evaluation of the anti-mutagenic potential of crude *Capsicum frutescens* Linn. (*siling labuyo*) fruit extract

Prof. Luciana Ilao

UP-College of Arts and Sciences

The prevalence of chronic respiratory illnesses and reduced ventilatory function among garment workers exposed to cotton fibers
Dr. Sonny Matias Habacon
Far Eastern University-Nicanor Reyes Medical Foundation

Effect of an extract from *Phyllanthus debilis* on hepatitis B positive serum
Ms. Constanca Obrero
UP-Institute of Socio-Biomedical and Molecular Research

A descriptive study on the knowledge, attitudes, and practices of Quezon City Dental Society private practitioners on dental wastes management

Dr. Jessica Santos

UP-Dentistry

Degree of immunohistochemical expression of cytokeratin 13-its relation to survival of patients with squamous cell carcinoma of the cervix

Dr. Ma. Lourdes T. Irao

Manila Central University

Comparison of *ipil-ipil* (*Leucena leucocephala*) seed suspension, *papaya* (*Carica papaya*) seed suspension, and *pyrantel pamoate* suspension as anti-helminthics among the MCU grade school students with ascariasis

Dr. Catherine Gironella

Manila Central University - Filemon

D. Tanchoco Medical Foundation

An assessment of the effectiveness of the preventive incremental dental care program at the UP

Integrated School
Dr. Elizabeth de Castro
UP - Dentistry

A study of knowledge, attitudes,
and behavior towards reproductive
health among women who had
elderly pregnancy in Metro Manila
Prof. Esmeralda Perez
UP-College of Arts and Sciences

The knowledge, attitudes and
behavior of the lower-middle class
adult urban consumers of the Fifth
Congressional District of the City of
Manila with regards to the Generics
Act of 1988, R.R.6675
Prof. Bernard Karganilla
UP-College of Arts and Sciences

Region VII

Comparison of the effect of
simvastatin and avocado fruit flesh
on the level of LDL-cholesterol
among hypercholesterolemic
rabbits
Dr. Melfer Montoya
Cebu Institute of Medicine

Regional Research Fund Projects

REGION VII

The prevalence of hearing impair-
ment among school children at
Cebu Central School
Dr. Arthur Dy
*Vicente Sotto Memorial Medical
Center*
AIDS: Knowledge, attitudes, beliefs
and perceived risks among high
school students in Cebu City
Dr. Cecil de Asis
Cebu Doctors College of Medicine

Use of permethrin treated curtains
for dengue vector control
Dr. Susan K. Madarieta
DOH, Region 7

REGION VIII

The community-based under five
clinic of Makapawa and health
status of children
Dr. Conchita Latoza
Divine World University Hospital

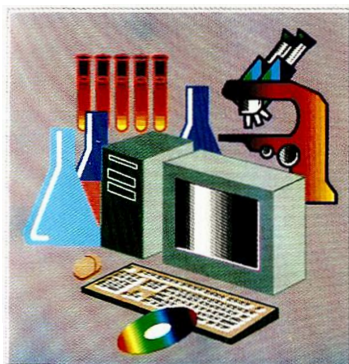
The accuracy and reliability of rural
health unit's microcopist laboratory
team in the detection of malarial
parasites
Ms. Thelma Lim
*Remedios T. Romualdez Medical
Foundation*

Snail control using fungicide
Mr. Roger Hambre
*Schistosomiasis Research and
Training Division, Department of
Health*

Community-based approach in the
control of schistosomiasis in newly
discovered endemic areas
Ms. Daisy Perez
City Health Office, Ormoc City

Risk factors to iodine deficiency
among patients at City Health
Office, Ormoc
Ms. Luz Calipayan
City Health Office, Ormoc

R&D Projects Under the Regular Program



PHARMACHEMICALS

Technological development of processes for the production of high enantiomeric excesses of (S)-(+)-ibuprofen using physical methods
Dr. Florentino C. Sumera
UP Diliman Institute of Chemistry
Ongoing

Technological development of processes for the production of high enantiomeric excesses of (S)-(+)-ibuprofen using chemical methods
Dr. Eva Ratilla
UP Diliman Institute of Chemistry
Ongoing

Technological development of processes to produce (S)-(+)-ibuprofen in high enantiomeric excess from the racemate using functionalized polymers
Dr. Leonorina Cada
UP Diliman Institute of Chemistry
Ongoing

Kinetic resolution of ibuprofen using commercially available lipases and proteases
Dr. Milagros M. Peralta
UP Los Banos Institute of Chemistry
Ongoing

Kinetic resolution of ibuprofen using local plant and crustacean lipases
Dr. Milagros M. Peralta
UP Los Banos Institute of Chemistry
Ongoing

Kinetic resolution of ibuprofen using lipases and proteases from local microbial strains
Dr. Ma. Jamela Revilleza
UP Los Banos Institute of Chemistry
Ongoing

Chemistry of selected plants with antitubercular potentials
Dr. Alicia Aguinaldo
UST Research Center for Natural Sciences
Ongoing

Preparation of ophthalmic grade hyaluronic acid from human umbilical cord
Dr. Ramon Miranda
UP Institute of Chemistry
Ongoing

BIOTECHNOLOGY

Cytogenetic characterization of childhood leukemias in selected tertiary hospitals in Metro Manila
Dr. Ma. Luisa D. Enriquez
St. Luke's Medical Center-Research and Biotechnology Division
Ongoing

Development of an immuno-diagnostic test for the detection of antibodies against hepatitis B core antigen (AntiHBcAg) in serum
Dr. Bernadette L. Ramirez
Research Institute for Tropical Medicine
Ongoing

Development of cell lines from primary cultures of human cancer tissues
Dr. Gloria De Castro-Bernas
UST-Research Center for Natural Sciences
New

Establishment of a current good manufacturing practice (cGMP) pilot plant for research and development of recombinant vaccines and other biologicals
Dr. Emilio B. Cadayona

Department of Health - Biologicals
Production Service
Ongoing

Strengthening the Institute of
Biology: Molecular Biology and
Biotechnology Program, UP College
of Science for studies using DNA
technology - Development of
diagnostic kit to detect pathogenic
and non-pathogenic strains of
Entamoeba histolytica
Dr. Filipinas F. Natividad
UP Diliman Molecular Biology and
Biotechnology Program (MBBP)
Ongoing

MEDICINAL PLANTS

Establishment of quality control
bioassay standards procedures for
medicinal plant products
Romeo F. Quijano, M.D.
UP Department of Pharmacology
Ongoing

Mutagenicity, clastogenicity and
antimutagenity potential of drug
preparations from Philippine
medicinal plants
Clara L. Syliangco, Ph.D.
UP Institute of Chemistry
Ongoing

Dosage forms from medicinal plant
constituents
Natividad de Castro, Ph. D.
UP College of Pharmacy
Ongoing

Clinical screening and validation
studies of medicinal plant products
used in traditional folk medicine in
the Philippines
Nelia C. Maramba, M.D.
UP Department of Pharmacology
Ongoing

Pharmacologic, toxicologic studies
of medicinal plants
Dr. Horacia R. Estrada, M.D.
UP Department of Pharmacology
Ongoing

Phase III multicenter study of *Vitex
negundo* L. (*lagundi*) syrup against
placebo in pediatric patients with
acute cough of moderate severity
Estrella Paje-Villar
UST, Faculty of Medicine and
Surgery
Ongoing

A randomized double blind placebo
controlled cross-over trial on
sambong tablet
(*Blumea balsamifera* L.) in mild
hypertension
Antonio L. Dans, M.D.
UP College of Medicine
Completed

Enhancement of the capability of a
locally fabricated hemoglobinom-
eter for analysis of other blood
constituents
Dr. Fortunato B. Sevilla III
UST Research Center for Natural
Sciences
Ongoing

Production of radiation-sterilized
amnions for human application
Ms. Zenaida de Guzman
Philippine Nuclear Research
Institute-DOST
New

Effect of *Tamarindus indica* crude
aqueous leaf extracts on systemic
blood pressure and hemodynamics
of rat mesenteric microcirculation,
in vivo
Dr. Xenia Tigno
UP College of Medicine
Completed

Seed gum from *Leucana
leucocephala* L. (Ipil-ipil) as an
excipient in pharmaceutical liquid
dosage forms
Prof. Leticia Gutierrez
UP College of Pharmacy
Completed

TRADITIONAL AREAS OF CONCERN

Communicable diseases

Clinical, radiologic, microbiologic,
and pathologic features of drug
susceptible and resistant *Mycobac-
terium tuberculosis* and mycobacte-
ria other than tuberculosis infection
in patients with HIV infection
Dr. Jaime Montoya
Research Institute for Tropical
Medicine
Ongoing

Community-based surveillance for
drug-resistance of *Mycobacterium
tuberculosis*
Dr. Tessa Tan-Torres
UP Philippine General Hospital
Ongoing

Food-borne bacterial pathogens of
some selected processed foods sold
in public markets in Metro Manila
Dr. Aida Aguinaldo
Food and Nutrition Research
Institute - DOST
Ongoing

Comparison of triple (2RHZ/4RH)
versus quadruple (2RHZE/4RH)
short-course treatment for tubercu-
losis in the Philippines: A
multicenter study
Dr. Charles C. Yu
De La Salle University
Ongoing

Efficacy of *Mycobacterium vaccae* as an immuno-therapeutic agent in the management of pulmonary tuberculosis

Dr. Jaime Montoya
UP Philippine General Hospital
New

A study on patient compliance to TB treatment regimen

Dr. Sandra C. Tempongco
UP College of Public Health
Ongoing

Maternal and Child Health

Prevalence of congenital hypothyroidism among newborns

Carmelita F. Domingo, M. D.
Department of Pediatrics - UP
Philippine General Hospital
New

Degenerative and metabolic disorders

A comparison of the clinical scoring system and the rapid shallow breathing index in predicting success in weaning patients on mechanical ventilation

Dr. Abundio A. Balgos
UP Philippine General Hospital
Ongoing

The practice of cancer pain management among physicians in the Philippines

Dr. Adriano V. Laudico
Surgical Oncology Society of the Philippines
Ongoing

Cancer pain severity and treatment survey: A study proposal for the Philippines

Dr. Adriano V. Laudico
Surgical Oncology Society of the Philippines
Ongoing

High performance liquid chromatography (HPLC) determination of serum penicillin levels in Filipino children with rheumatic heart disease/rheumatic fever (RHD/RF)

Dr. Christine Leonor Ma. M. Cruz-Conducto
Department of Pediatrics
UP Philippine General Hospital
Completed

Metabolic effects of local seaweed extracts in blood sugar level

Dr. Leonora Panlasigue
UP College of Home Economics
New

Nutritional Products

Iron-absorption from FVRice-Iron fortified

Ms. Divinagracia Valdez
Food and Nutrition Research
Institute-DOST
Completed

Updating of nutritional status of Filipino children at provincial level

Ms. Gracia Villavieja
Food and Nutrition Research
Institute-DOST
New

Establishment of nutritional food processing and supplementary feeding center in Barangay Concepcion, Alitagtag, Batangas

Mr. Alejandro Martin, Jr.
Food and Nutrition Research
Institute-DOST
New

Vitamin A fortification of coconut cooking oil

Dr. Lydia Marero
Food and Nutrition Research
Institute-DOST
New

State-of-the-Art

Development of guidelines for the effective and efficient control of hypertension

Dr. Ramon Abarquez
Philippine Society of Hypertension
Ongoing

Policy Study

Development of an interdisciplinary code of ethics in reproductive health research

Prof. Cristina Torres
UP College of Arts and Sciences
Ongoing

ENVIRONMENTAL/OCCUPATIONAL HEALTH

Somatic mutation in peripheral blood lymphocytes among Metro Manila residents: Indication of exposure to environmental pollution

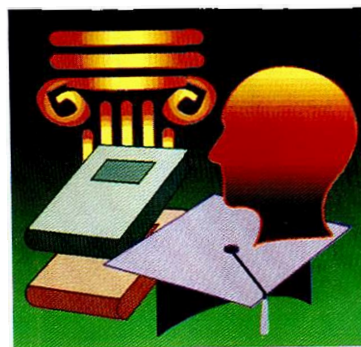
Ms. Ma. Teresa Yulo-Nazarea
Health Physics Research Section,
Philippine Nuclear Research
Institute-DOST
Ongoing

Risk assessment of major industries located at the Subic Bay Freeport Zone

Ms. Gloria A. Asprer
Environmental Division
Industrial Technology Development
Institute-DOST
Ongoing

PCHRD SCHOLARS

1996 Grantees



DOCTORAL DEGREE

Ms. Benedicta Alava
University of Santo Tomas
Ph. D. Chemistry
University of Santo Tomas

Ms. Erlinda Domingo
Regional Health Office 3
Dr. Public Health
University of the Philippines-College
of Public Health

Ms. Socorro Ignacio
Department of Health
Ph.D. Public Health (Health Education)
UP College of Public Health

Ms. Jasmin Jiji Miranda
UP-College of Science
Ph. D. Molecular Biology and
Biotechnology
UP-College of Science

Prof. Buenalyn Teresita Ramos
UP-College of Public Health
Ph. D. Public Health
(Health Education)
UP College of Public Health

Ms. Elinor Sunico
Research Institute for Tropical Medicine
Ph. D. Clinical Psychology
UP College of Social Sciences and
Philosophy

Ms. Julieta Zabal
Centro Escolar University
Ph. D. Biology
College of Science De La Salle
University

MASTERS DEGREE

Ms. Ana Maria Bacudio
Manila Health Department
MS Microbiology
UP College of Public Health

Dr. Teresita Cajano
Regional Health Office 8
MS Biostatistics
UP College of Public Health

Ms. Ailyn Manglicmot
UP College of Medicine
MS Microbiology
UP College of Medicine

Dr. Amelia Medina
UP Philippine General Hospital
MS Clinical Epidemiology
UP College of Medicine (CEU)

Ms. Vicel Meregillano
University of Immaculate
Concepcion
MS Pharmacy
University of Santo Tomas

Mr. Leonido Olobia
Regional Health Office 8
MS Microbiology
UP-College of Public Health

Dr. Lucila Perez
Manila Central University-Felimon
D. Tanchoco Medical Foundation
MS Clinical Epidemiology
UP College of Medicine
(CEU Program)

Ms. Clariebelle Reynoso
UP-College of Pharmacy
MS Microbiology
UP College of Public Health

Ms. Hyacinth Tagulo
University of Immaculate Concepcion
MS Pharmacy
University of Santo Tomas

Mr. Michael Valdez
University of Santo Tomas
MS Microbiology
University of Santo Tomas

LIST of COMPLETED THESIS/ DISSERTATION for 1996

Dissertation

Ms. Luisa D. Enriquez
De La Salle University
Ph. D. Zoology
Dissertation: Comparative mutagen
sensitivity of chromosomes from
lymphocytes of normal and cancer
individuals

Prof. Rafaelita Ong
University of the Philippines
Ph. D. Public Health
Dissertation: Health education
interventions to minimize defaulting
of leprosy patients on multi-drug
therapy

Prof. Jesus Sarol
University of the Philippines
Ph. D. Epidemiology
Dissertation: Survey of HIV antibody
infections and high risk behaviors
among drug users

Thesis

Ms. Amy Calumpang
University of San Carlos
MS Pharmacy
Thesis: Vitro determination of the
anti-coagulant property of *Auricu-
laria auricula* (hook) underwood

Ms. Yolanda Chua
University of San Carlos
MS Pharmacy
Thesis: The antiseptic activity of
santan (*Ixora coccinea* Linn, family
Rubaceae) roots

Mr. Rogelio Cruz
Centro Escolar University
MS Microbiology
Thesis: Bacterial cardiolipin for sero-
diagnosis of syphilis

Ma. Cecilia Laurente
University of the Philippines
MA Nursing
Thesis: Effects of nurses caring behavior on the anxiety of patients in the emergency room

Ms. Lydia T. Manahan
University of the Philippines
MS Nursing
Thesis: Assessing the anxiety profile of patients undergoing hysterectomy and mastectomy

Dr. Teresita Yambot
Manila Central University-Filemon D. Tanchoco Medical Foundation
MS Optometry
Thesis: An appraisal of the approach to eradication of eye health problem of Filipinos by year 2000

LIST of Thesis / Dissertation Grantees for 1996

Ms. Elmira Judy T. Aguilar
University of San Carlos
MA Health Social Science
Thesis: Quality care: clients' perception on the package deal services

Mr. Jack Hess Baricuatro
University of San Carlos
MS Chemistry
Thesis: Isolation and characterization of bioactive metabolites of red alga *Halymenia durvillae*: bory

Ms. Lolita Cavinta
University of the Philippines
MS Public Health
Thesis: Antibodies to hepatitis C virus major antigen associated with

center stages of hepatitis C virus infection

Mr. Francisco S. Chung
Lung Center of the Philippines
MS Biochemistry
Thesis: P-glyco-protein in non-small cell lung center as a possible marker for anticoplastic drug resistance

Ms. Jayvee Cruz
University of the Philippines
MA Nursing
Thesis: Determinants of compliance to therapeutic regimen among selected Filipino juvenile diabetics

Ms. Phoebe Espinas
National Museum
MS Biological Science
Thesis: Medicinal plants and home remedies of the Abellen Ayta

Ms. Esperanza Espino
Research Institute for Tropical Medicine
Ph. D. Tropical Medicine
Dissertation: Indicators for evaluating the effect of a community-based malaria-control intervention in a low endemic area in the Philippines

Ms. Glomarie Gonzales
University of the Philippines
MS Chemistry
Thesis: Extraction and purification of hyaluronic acid from human umbilical cord

Mr. Howell T. Ho
University of the Philippines
MS Biochemistry
Thesis: A comparative study of the collagenasic activity of the excretory extract from pathogenic and none pathogenic strain of *naegleria* sp.

Dr. Socorro Lupisan
Research Institute for Tropical Medicine
MS Epidemiology
Thesis: Validity of the WHO recommended ARI case assessment in the diagnosis of pneumonia in children lower than five presenting with cough and fever in malaria hyper-endemic area in the Philippines

Dr. Susan T. Yanga-Mabunga
University of the Philippines
MS Dentistry
Thesis: Social impact of oral diseases and disorder among workers

Ms. Preciosa Corazon Pabroa
University of the Philippines
MS Chemistry
Thesis: Purification and biochemical characterization of the venom from the jellyfish *Chiroptalmus*

Mr. Ronelio Rara
Research Institute for Tropical Medicine
MS Microbiology
Thesis: Development and evaluation of vibrio cholerae antisera containing Ogawa, Inaba, and Bengal antibodies

Mr. Diosdado Sale
University of San Carlos
MS Chemistry
Thesis: Isolation and characterization of insecticidal and antimicrobial metabolites of red alga *Gledsiella acerosa* (Forsk.) Feldman & Hamel

Ms. Sandra Tankeh-Torres
Philippine Orthopedic Institute
MS Clinical Epidemiology
Thesis: Risk factors of hip fractures in Filipinos

PCHRD Officials

GOVERNING COUNCIL

Chairman

Dr. William G. Padolina
Secretary
Department of Science and
Technology

Vice-Chairman

Carmencita N. Reodica
Secretary
Department of Health

Members

Dr. Ernesto O. Domingo
Fellow, Philippine Society of
Gastroenterology

Dr. Abraham F. Pascual
President, Pascual Laboratories, Inc.

Dr. Josefina Poblete
Dean, College of Medicine
Cebu Institute of Medicine

Dr. Warlito C. Vicente
Director, Center for Education,
Research and Development in Health
Davao Medical School Foundation

Ex-Officio Members

Ms. Asuncion Macalalag
Executive Director
National Nutrition Council

Dr. Perla Santos-Ocampo
Chancellor, UP Manila

Dr. Pacita L. Zara
Executive Director, PCHRD

TECHNICAL DIRECTORS

Dr. Generoso F. Basa

Dr. Bonifacio C. Dazo

Dr. Adriano V. Laudico

Dr. Victor C. Valenzuela

Dr. Jane Baltazar

Dr. Fernando S. Sanchez, Jr.

DIVISION CHIEFS

Myrna I. Consolacion
Human Resources and Institution
Development Division

Emelita N. De Castro
Finance and Administrative Division

Alicia L. Lingao
Research Management and
Development Division

Merlita M. Opeña
Research Information,
Communication, and Utilization
Program

