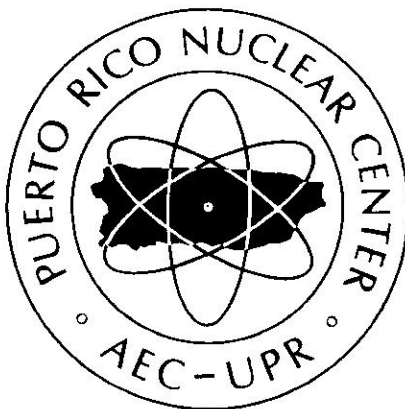


PUERTO RICO NUCLEAR CENTER

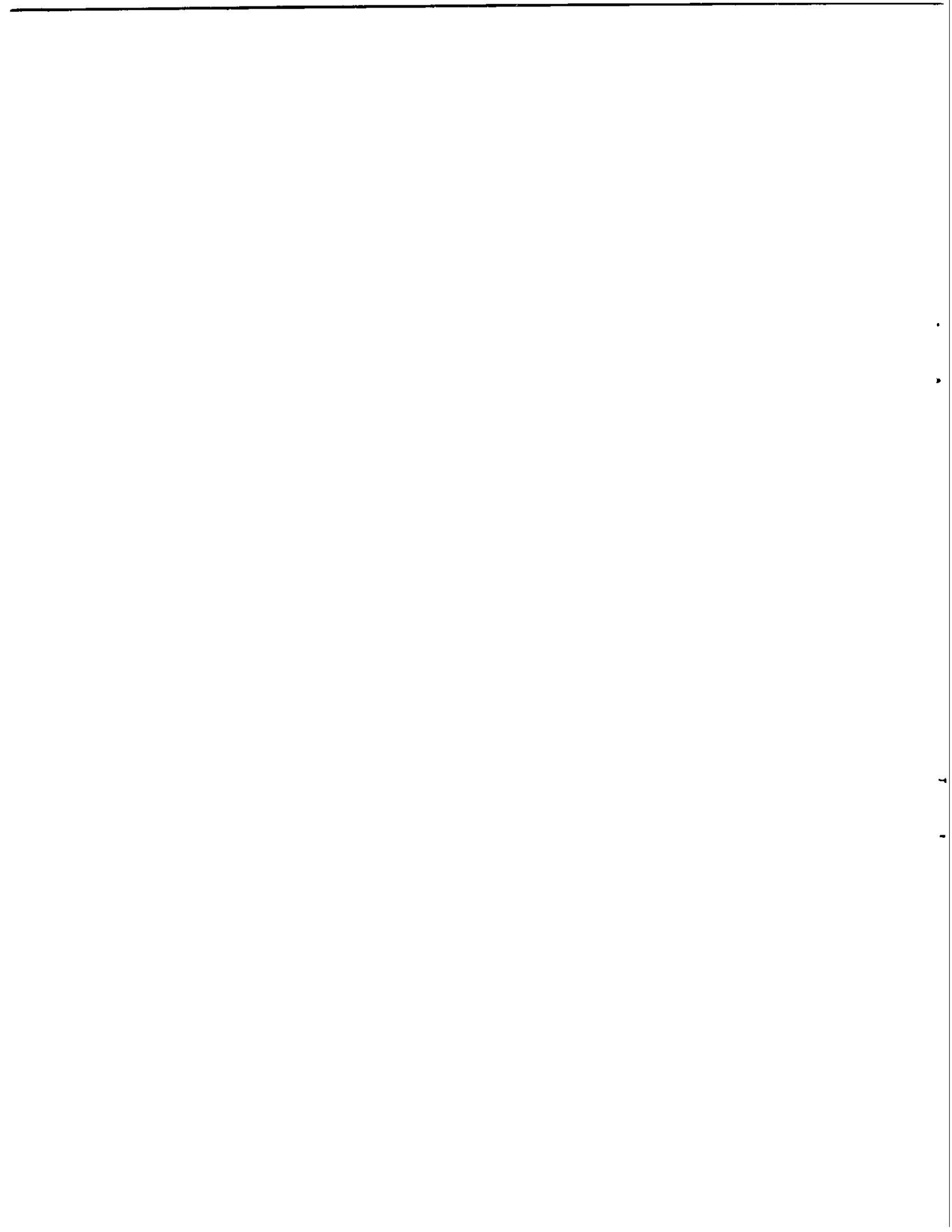
STAFF CURRICULUM VITAE

U.S. A.E.C. Program Review

December 9-10-11, 1973



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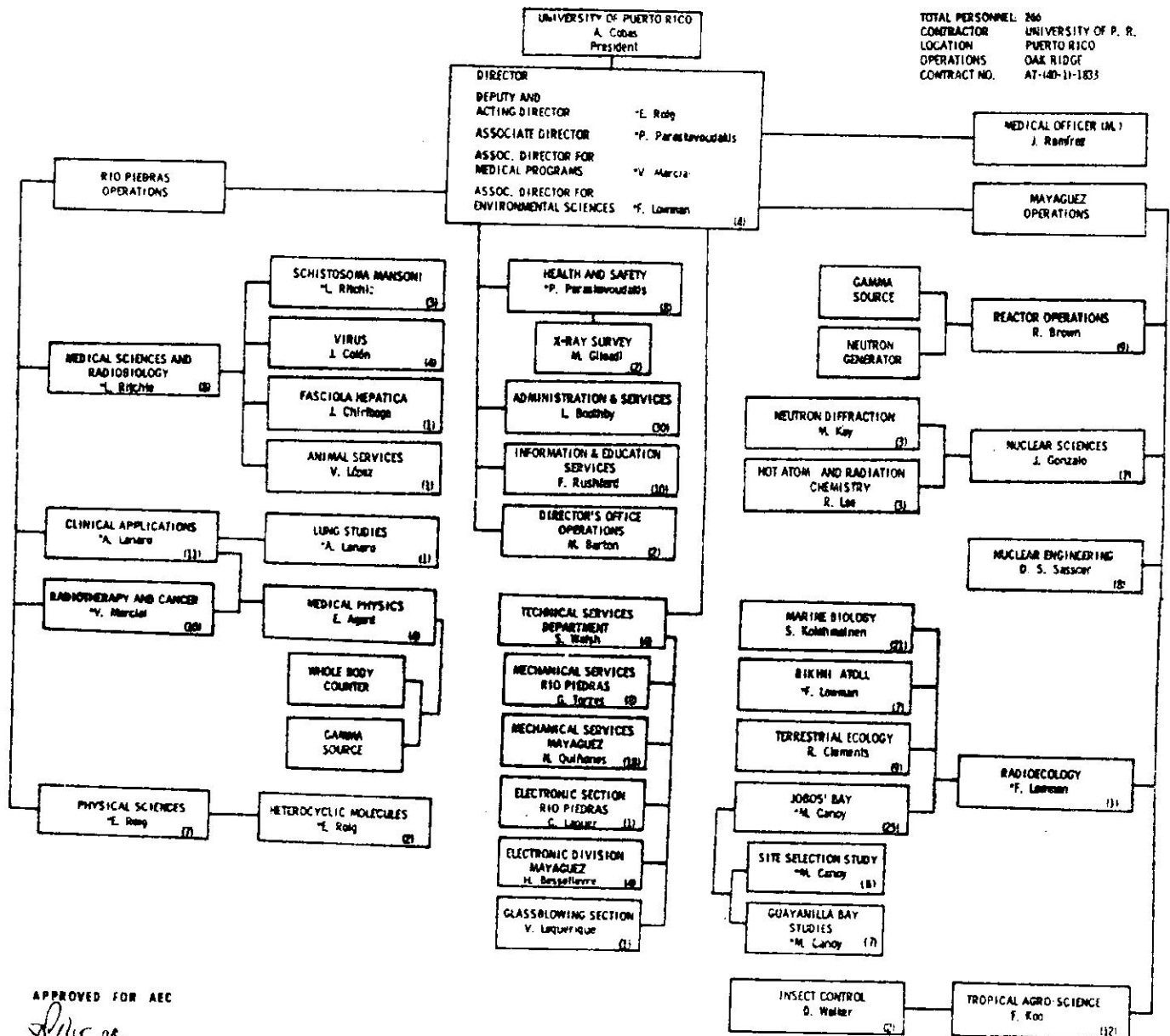


PUERTO RICO NUCLEAR CENTER

ORGANIZATION CHART

January 1, 1973

TOTAL PERSONNEL: 266
 CONTRACTOR UNIVERSITY OF P. R.
 LOCATION PUERTO RICO
 OPERATIONS OAK RIDGE
 CONTRACT NO. AT-40-11-1833



APPROVED FOR AEC

Lawrence S. Ritchie
 AREA MANAGER
 PUERTO RICO AREA OFFICE

*Multiple function

APPROVED FOR CONTRACTOR

Lawrence S. Ritchie
 LAWRENCE S. RITCHIE
 ACTING DIRECTOR

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Medical Sciences and Radiobiology Division		
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CURRICULUM VITAE

PERSONAL

NAME : Eugene Theodore Agard
DATE OF BIRTH : August 15, 1932 PLACE OF BIRTH: Barbados
MARITAL STATUS : Married NO. OF CHILDREN: Four (4)

EDUCATION

<u>INSTITUTION</u>	<u>DEGREE</u>	<u>SUBJECTS</u>	<u>YEAR</u>
U. C. W. I.-London	B.Sc. (1st.Class)	Maths., Physics	1957
University of London (The Middlesex Hospital)	M. Sc.	Physics	1958
University of Toronto	Ph. D.	Physics	1970

PROFESSIONAL EXPERIENCE

<u>POSITION</u>	<u>INSTITUTION</u>	<u>DATES</u>
Teacher	Harrison College (Barbados)	Sept. 1952-Aug. 1954
Asst. Physicist	Mass. Gen. Hospital (U.S.A.)	Jan. 1959-Oct. 1963
Lecturer (Asst.Prof.)	University of W. I. (T'rad)	Nov. 1963-June 1972*
Scientist II	Puerto Rico Nuclear Center	July 1972- Present

* On Fellowship Leave from October 1967 to September 1970.

PUBLICATIONS

Approximately 10 to date.

ADDITIONAL DATA

A. M.Sc. Theses: "Physical problems involved in the External Counting of Gamma-Ray Emitters Located in a Scattering Medium".

This work was done in the Department of Physics Applied to Medicine, at the Middlesex Hospital Medical School, London, England.

ADDITIONAL DATA (Cont.)

Ph. D. Thesis: "In Vivo Neutron Activation Analysis and Associated Dosimetry".

Most of the research work was done at the Toronto General Hospital.

B. Membership in Professional Societies:

1. Health Physics Society
2. American Association of Physicists in Medicine.

C. Consultant in Radiological Physics to Ministry of Health, Trinidad Government (1966-67).

D. Staff Representative on Senate, University of The West Indies, (October 1971-June 1972).

Name: Rafael Arce Quintero

Age: 28 (July 21, 1944), Height 6'0", weight 175 pounds

Marital status: Married, one child

Address: 435 Mizar, Urb. Dos Pinos, Río Piedras, 00923

Educational Background:

High School: University of Puerto Rico High School, Río Piedras, (1961)

University of Puerto Rico, Río Piedras, Puerto Rico
B.S. degree, (1965), Major: Chemistry; Minor: Physics

University of Wisconsin; Madison, Wisconsin
Ph.D. degree (1971), Major: Physical Chemistry; Minor: Physics
Ph.D. thesis and training: Photochemistry and Radiation Chemistry

Work Experience

1968-1969: Teaching Assistant for the laboratory course of undergraduate Physical Chemistry at the University of Wisconsin

1971-1973: Assistant Professor at the Department of Chemistry of the University of Puerto Rico, Río Piedras

Courses taught:

- a) Chemistry 101-102 - general chemistry for sophomore
- b) Chemistry 363-364 - Physical Chemistry
- c) Chemistry 365-366 - Intermediate laboratory of Physical Chemistry

1971-1973: Scientist II at the Puerto Rico Nuclear Center in the Gamma-Radiolysis project, research and teaching

Honors and Societies:

Sigma Xi Scientific Society

American Chemical Society

Graduate studies entirely financed by the scholarship program of the Economic Development Administration of Puerto Rico

Honor registration at the University of Puerto Rico

Rafael Arce-Quintero (curriculum vitae)

Publications:

- 1) R. Arce, Ph.D. Thesis, University Microfilms, Michigan
- 2) R. Arce, and John E. Willard, "Elementary Process in the Photochlorination of methylpentane glass at 77-97°K", J. Physical Chemistry, 76, 1800, 1972.
- 3) R. Arce and L. Ramírez, "Intermediate Species in the photolysis of heterocyclic compounds at 77°K", 7th Caribbean Chemical Conference, Mayaguez, Puerto Rico, January 1973.

Interests:

- 1) Teaching at the college level, working with students
- 2) active in sports (basketball, baseball)
- 3) Rock and stamp collection
- 4) Research interests:
 - a) Photochemistry of heterocyclics at 77°K in rigid glasses.
Purpose of identifying intermediate species, triplet state quantum yields, triplet-triplet extinction coefficients
 - b) Photochemistry of di-terbutylperoxide in alkanes, alcohols, alkyl halides at different temperatures.
 - c) Photochemistry of halogens in organic glasses with interests in the halogen disappearance quantum yield, radical yield, radicals produced, products yields. Relationship between liquid and gas phase photohalogenations and solid state photohalogenations
 - d) Diffusion controlled radical reactions; reactions of radicals produced by gamma irradiation with small molecules like oxygen, bromine, chlorine as a way to determine diffusion properties of these molecules in organic glasses.
 - e) Mercury photosensitization

ARTHUR MCBRIDE BLOCK

Social Security Number - 143-30-5543

Address - 1754 Pafos St., Venus Gardens, Rio Piedras, Puerto Rico

Place and date of birth - Newark, N.J.; June 26, 1938

Education and degrees

High School - Newark Academy, Newark, N.J.; Diploma 1956

College - Cornell University, Ithaca, N.Y.; A.B.; Major in Chemistry and Physics 1961

Post-graduate - Rutgers University, New Brunswick, N.J.; Ph.D.; Major in Physical Chemistry 1967

Thesis - "Laser Light Scattering from Spheres in Water Suspension"

Professional Experience

1961 - 67 Instructor, Analytical Chemistry and Basic (1st year) Chemistry, Rutgers University, New Brunswick, N.J.

1962 - 63 Chemist, Merck Co., Inc., Rahway, N.J. (Analytical Research-Chemical Control Division).

1963 - 64 Chemist, Johnson and Johnson Co., Inc., New Brunswick, N.J. (Analytical Research - West Research).

1967 Lecturer, University of Puerto Rico, Rio Piedras, Puerto Rico.

1968 Assistant Professor, University of Puerto Rico, Rio Piedras, P.R.

1967 - 72 Scientist - Ad Honorem, Puerto Rico Nuclear Center, Caparra Heights Station, San Juan, Puerto Rico.

1973 - Present Scientist I, Physical Sciences Division and Terrestrial Ecology Program, Puerto Rico Nuclear Center, Rio Piedras, Puerto Rico.

Professional Associations and Societies

Colgate-Palmolive Fellow, 1963-64

Sigma Xi Society, New Brunswick Chapter

Associate Member ----- 1965

Member ----- 1972

San Juan Area Club Councillor- 1971

American Chemical Society, 1970

Optical Society of America, 1971

Association of Southeastern Biologists, 1973

Primary Teaching Interests:

Experimental Sciences, Mathematical Sciences, History of Science.

Primary Research Interests

Applications of light-scattering in the characterization of bio-physical systems.

Chemical analysis of eco-systems.

Toxicity and Chemical treatment of non-biodegradable compounds.

Theoretical description of ground state properties of biologically active molecules.

Student Instruction

Courses taught: Basic Chemistry (1st. year), Analytical Chemistry, Physical Chemistry, Instrumental Analysis.

Committess: Academic Affairs (Dept. of Chemistry, U.P.R.), Graduate Student Association (Chemistry Department Representative 1964-1966, Rutgers University). Graduate Admissions (Department of Chemistry, U.P.R.).

Proposals and Funding from Government and non-Government Sources:

"Quaternary Structure Studies of Glycogen Phosphorylase Using Laser Light Scattering", Research Corporation grant: \$6,500, 1968.

Westinghouse Gift Program: 1 x-y Recorder, 1969.

Department of Housing, Commonwealth of Puerto Rico: Electronic Components (Surplus) Estimated value: \$10-12,000, 1969.

"Radioactivity Incorporation and Amino Acid Content of Glycogen Phosphorylase Enzyme", Submitted to AEC. Approved, Unfunded 1968 - 69.

"Amino Acid Composition and Structure of Active and Allosteric Sites of Glycogen Phosphorylase Isolated from the Muscles and Blue Crabs (*Callinectes danae*)", NIH, Approved, Unfunded 1971.

"Particles Size Distribution of Particulate Matter in Marine Areas Currently Considered Acceptable as Ocean Outfalls for Waste Disposal", Public Works, Commonwealth of Puerto Rico, Approved. Unfunded 1971.

"Equipment for a Photochemical Experiment in Intermediate Laboratory Course (Physical Chemistry). (University of Puerto Rico)". HEW, Approved, Approximately \$5,000 granted. 1972.

Publications

Approximately 15 to date.

CURRICULUM VITAE

ANTONIO BOSCH, M.D.

Born

Málaga, Spain - June 7, 1930 - U. S. Citizen 1964

Field

Radiotherapy and Cancer

Education

B.S. (Premedical) Academia Hispano-Mexicana, México, D.F.	1948
M.D. Universidad Autónoma de México	1955

Certifications

Diplomate American Board of Radiology (Radiotherapy)	1963
Puerto Rico Board of Medical Examiners	1964

Specialty Training

Ciba Laboratory Fellowship for Clinical Cancer Research	1955-56
Fellow in Gynecologic Cancer, Women's Hospital, México City	1955-56
Internship, Elmhurst General Hospital, New York	1956-57
Resident in Malignant Diseases, American Oncologic Hospital, Philadelphia, Pa.	1957-59
Residency in Radiation Therapy, Roswell Park Memorial Institute, Buffalo, N. Y.	1959-60
Residency in Radiation Therapy, I. González Martínez Oncologic Hospital, San Juan, Puerto Rico	1960-61
Research Assistant, Radiotherapy and Cancer Division, Puerto Rico Nuclear Center, San Juan, Puerto Rico	1961-63

Experience

Junior Attending in Radiation Therapy, I. González Martínez Oncologic Hospital, San Juan, Puerto Rico	1961-63
Associate in Radiation Therapy, University of Puerto Rico School of Medicine, San Juan, Puerto Rico	1962-64
Assistant Professor in Radiation Therapy, University of Puerto Rico School of Medicine, San Juan, Puerto Rico	1964-68
Chief Scientist I, Puerto Rico Nuclear Center, San Juan, Puerto Rico	1963 to date
Attending in Radiotherapy, I. González Martínez Oncologic Hospital, San Juan, Puerto Rico	1963-73
Associate Professor in Radiation Therapy, University of Puerto Rico School of Medicine, San Juan, Puerto Rico	1968-to date

Publications

Approximately 20 to date

CURRICULUM VITAE

Raymond Allen Brown
 Pine Grove Condominium Apt. 45 C
 Isla Verde, Puerto Rico

PERSONAL:

Born, New York, December 27, 1919
 Married, two children

EDUCATION:

Wagner Lutheran College, Staten Island New York
 B. S. Chemistry, 1941

California Institute of Technology, Pasadena, California
 M.S. Physical Chemistry, 1947
 Advisor - Prof. E. H. Swift
 Ph. D. Physical Chemistry of Proteins, 1949
 Minor, Physics
 Advisor - Prof. J. G. Kirkwood

SOCIETIES:

Fellow, New York Academy of Science
 Member of Sigma Xi

EXPERIENCE:

1949 1951
 NIH Postdoctoral, Protein Physical Chem., Cal. Tech.

1951 1957
 Lederle Lab., Physical Biochem. research

1957 1958
 Venezuela Institute., Visiting Scientist

1958 1963
 Wistar Institute, Philadelphia, Associate Member

1963 1968 (Dec. 31)
 Biological Division, Oak Ridge National Labs.,
 Immunology

1968 to date
 Chief Scientist II - PRNC

CURRENT INTERESTS:

Molecular Studies in Immunology & Physical Biochemistry

PUBLICATIONS:

Approximately 54

CURRICULUM VITAE

Full Name: Richard Brown Campos

Place and Date of Birth: Ponce, Puerto Rico, 10/26/30

Civil Status: Married

Home Address: Cruz Maria Street
Bellas Lomas
Mayaguez, Puerto Rico 00708

Educational Background:

B.S. (Mechanical Engineering)	University of Puerto Rico	1953
M.S. (Nuclear Technology)	University of Puerto Rico	1962
Radioisotopes Techniques Course	Oak Ridge INS	1957
Reactor Supervisor Training Course, Oak Ridge National Laboratories		1958-59
Nuclear Power Reactor Safety, M.I.T.		1973 (Summer)

Professional Experience:

<u>Institution</u>	<u>Position Held</u>	
Commonwealth Oil Refining	Field Engineer	1955
Ponce Cement Corporation	Field Engineer	1955
University of Puerto Rico, Mayaguez	Instructor, Department of Physics	1955-58
Puerto Rico Nuclear Center	Research Assistant, Research Associate, Scientist II, Head, Reactor Division	1958-

Research Activities:

Gamma Ray Dosimetry
Reactor Kinetics
Reactor Instrumentation

Memberships:

Colegio de Ingenieros, Arquitectos y Agrimensores de P.R.
Sociedad de Ingenieros Mecánicos de P.R.
Health Physics Society

Licenses: Puerto Rico Licensed Engineer #2874

MICHAEL JOHN CANOY

11

Cirriculum Vitae

PRESENT ADDRESS: Home
 RR 185-F Calle Juanita
 Bellas Lomas
 Mayaguez, P. R. 00708

Work
 Radioecology Division
 Puerto Rico Nuclear Center
 Mayaguez, P. R. 00708

BIRTHPLACE: Ada, Oklahoma

BIRTH DATE: August 6, 1939

MARRIED: 1960

photo
 September 1973

Wife's Name: Kirsten (Christensen) Canoy. (Birthplace: Denmark)

Children's Names and Ages: Eva Marie Canoy, 12 years
 Michelle Jenee Canoy, 6 years

EDUCATIONAL HISTORY: (See attached sheet for details)

<u>Institution</u>	<u>Location</u>	<u>Date</u>	<u>Degree</u>	<u>Area</u>
Harding College	Searcy, Arkansas	1956-60	A.B.	English- Psychology
		1963-64		Zoology- Chemistry
University of Denver	Denver, Colorado	1960	----	Psychology
Harding College		1961-62	MAT	Counseling- Education
Michigan State University	East Lansing, Michigan	1962	----	Psychometrics
University of Texas	Austin, Texas	1964-68	----	Zoology
University of North Carolina	Chapel Hill, North Carolina	1968-70	Doctorate 1972	Zoology

Dissertation: DNA in Ecological Systems. (Supervisor: Dr. H. T. Odum)

VOCATIONAL EXPERIENCE:

<u>Date</u>	<u>Title</u>	<u>Employer</u>	<u>Description</u>
1959-60	Free-lance Writer, Photographer	Self Searcy, Arkansas Denver, Colorado	Writing copy and furnishing photos for news, adventure, and historical articles.
1960-61	Photo Lab Technician	Workman Studio Denver, Colorado	Commercial photo laboratory technician handling industrial, USDA and NASA accounts.
1961-62	Psychometric Assistant	Harding College Searcy, Arkansas	Administration, scoring, and statistical analysis of college entrance and placement tests.
1962	Guidance Counselor	Albion Public Sch. Albion, Michigan	Administer psychological tests and offer personal and cirri- cular counseling to high school students.
1963	Audio-visual Technician	Harding College Searcy, Arkansas	Operation of AV equipment, make or edit filmstrips, tapes, movies for educational purposes.
1965	Teaching Assistant	University of Texas Austin, Texas	Laboratory instruction in summer courses in Human Anatomy and Physiology.
1965-66	Laboratory Technician	University of Texas Austin, Texas	Biomedical engineering in experimental design for flash blindness studies with lasers. Developed ERG detection and analysis equipment, used Com- puter of Average Transients, helium, argon, and ruby lasers.
1966-67	Consulting Psychometrist	Self Austin, Texas	Developed private firm for contract work with the Office of Economic Opportunity for the administration and analysis of multi-lingual and "culture free" psychological tests.
1967-68	Teaching Assistant	University of Texas Austin, Texas	Teaching laboratory sections of Human Anatomy and Physiology
1968	Teaching Assistant	University of N.C. Chapel Hill, N.C.	Teach laboratory sections of Basic Zoology.
1970	Project Director, Jobs Project	Puerto Rico Nuclear Center Mayaguez, P.R.	Supervise a before-after environmental study of a bay where a power plant is under construction.

VOCATIONAL EXPERIENCE (cont'd)

<u>Date</u>	<u>Title</u>	<u>Employer</u>	<u>Description</u>
1971	Project Director, Jobos Proj.	Puerto Rico Nuclear Center, Mayaguez, P.R.	Supervise a before-after environmental study of a bay where a power plant is under construction.
	Guayanilla Project		Supervise an ecological study of a thermally altered bay.
1972-73	Project Director, Jobos Proj.	"	"
	Guayanilla Project		"
	Site Selection Survey Project		Environmental survey of potential power plant sites.

PUBLICATIONS

Approximately 9 to date.

RESUME

Name: José P.A. Castrillón

Citizenship: Argentine

Date and Place of Birth: January 4, 1926, Buenos Aires, Argentina

Marital status: married; 2 sons

Social Security Number: 583-07-0424

Experience:

- 1950 - Ph.D. University of Buenos Aires, Argentina
Thesis title: "The alkaloids of Argentine cacti:
trichocereus candicans and trichocereus terscheckii"
- 1950-2 - Research Laboratories of Atanor S.A.M., Munro, Argentina
- 1963-5 - Research Laboratories of Squibb S.A., Argentina
- 1956-64 - Organic Chemistry Laboratory of the Argentine Atomic
Energy Commission
- 1960-1 - Fellowship of the Argentine Council, University of Colorado
under Professor Bert M. Tolbert
- 1964 - Associate Scientist I. Puerto Rico Nuclear Center.
- 1967 - Associate Scientist II. Puerto Rico Nuclear Center,
till present Professor of Radiochemistry (ad honorem) University
of Puerto Rico.
- 1971-2 - One year leave at the University of Asunción, Paraguay
as Professor of Organic Chemistry on an Organization of
the American States Program.
- 1972 - Acting Head, Physical Sciences Division.

Publications

Approximately 18 publications to date.

CURRICULUM VITAE

Arturo Cedeño Maldonado

Scientist I, Tropical Agro-Sciences Division, PRNC

Assistant Horticulturist, Agricultural Experiment Station, UPR

Assistant Professor, Department of Horticulture, UPR

Education and Experience

1963 - B.S. (Agriculture) University of Puerto Rico, Mayaguez

1966 - M.S. (Plant Science) University of California, Riverside

1973 - Ph.D. (Plant Physiology) University of California, Riverside

1963-66 Research Assistant, Agricultural Experiment Station,
UPR, Mayaguez

1966 to present, Assistant Horticulturist, Agricultural Experiment
Station (UPR), Mayaguez

1973 Scientist I, Puerto Rico Nuclear Center, Mayaguez

1973 Assistant Professor, UPR, Mayaguez

Publications

Four papers were published.

CURRICULUM VITAE

JORGE CHIRIBOGA M.D.

1. Field - Biochemistry, Pathology
 2. Senior Scientist II & Director of the Fasciola hepatica Program
 3. Degrees:
 - 1925-1931 German School of Lima, Perú - Diploma
 - 1931-1936 High School - Anglo Peruvian Schools, Lima, Perú - Diploma
 - 1938-1941 University of San Marcos, School of Sciences, Lima, Perú
 - 1945 University of San Marcos, School of Medicine - B.M.
 - 1948 University of San Marcos, School of Medicine - M.D.
 4. Experience:
 - 1942-1945 Instructor in Pathology - School of Medicine, Lima, Perú
 - 1945-1948 Research Associate Public Health Ministry, Lima, Perú
 - 1949-1951 Fellowship de la Comision de Cultura de la República, Argentina
 - 1952-1953 Fellowship of Biochemical Institute (Professor Luis F. Leloir) Buenos Aires, Argentina
 - 1954-1957 Head of the Department of Biochemistry - School of Agriculture, La Molina, Lima, Perú
 - 1956-1957 Head of the graduate program - School of Agriculture, La Molina, Lima, Perú
 - 1957-1959 Dean, School of Medicine, Arequipa, Perú
 - 1957-1959 Head of the Department of Biochemistry, School of Medicine, Arequipa, Perú
 - 1959-1966 Associate Professor - University of Tennessee Atomic Energy Commission Agricultural Research Laboratory, Oak Ridge, Tennessee.
 - 1966-present Assistant Director for Scientific Programs, Puerto Rico Nuclear Center, and Professor of Biochemistry, School of Medicine, University of Puerto Rico.
- Publications: Has about 100 publications .

CURRICULUM VITAE

Name: Richard G. Clements

Address: Santa Rosa St. #125, Urb. Romání, Rio Piedras, Puerto Rico

Vita:

Birth: April 28, 1931, Indianapolis, Indiana
 Physical: height, 5'10", weight, 155 lbs; health, no defects
 Status: married, four children, military classification, 4A

Position: Director, Terrestrial Ecology and Senior Scientist I, Puerto Rico Nuclear Center, Rio Piedras, Puerto Rico.

Degrees: B.S. - 1956 Purdue University
 Major: Agronomy (soils), Minor: Botany, Chemistry, Geology
 Ph.D. - 1966 University of Georgia
 Major: Agronomy; Minor: Botany, Biochemistry

Experience:

- 1956 - 1958 Soil Scientist, Department of Tropical Research, Standard Fruit & Steamship Co., La Ceiba, Honduras. Direction of soil fertility and plant-water relationship studies with bananas.
- 1958 - 1961 Quality Control - Head, Quality Control Department, Honduras Division of Standard Fruit & Steamship Co., La Ceiba, Honduras. Supervision of Division handling procedures from harvesting through loading operations at the Port. Development of new and improved methods of handling bananas.
- 1961 - 1963 Agronomist, Department of Tropical Research, Standard Fruit & Steamship Co., La Ceiba, Honduras. Introduction and screening of annual oil crops as a potential source of vegetable oil for La Fabrica de Manteca y Jabón, S.A., a subsidiary of Standard Fruit & Steamship Co. Project leader of experimental pineapple program dealing with the introduction of Hawaiian varieties, planting, fertilization and growth hormone studies.
- 1963 - 1966 Research Assistant, Department of Agronomy, University of Georgia. Studies of the effect of fertilization, clipping frequency, and moisture levels on the soil temperature regime under a Coastal Bermudagrass sod, under the direction of Dr. R.A. McCreery.
- 1966 - 1968 Research Associate, Institute of Ecology, University of Georgia. Field Director of the Terrestrial Ecology Program in Panama and Colombia in conjunction with the Interoceanic Canal Studies.

- 1968 - 1969 Research Associate, Institute of Ecology. Project Coordinator and one of Principal Investigators of a NSF Grant to study the "Productivity and Mineral Cycling on Natural and Manipulated Watersheds at Coweeta, North Carolina".
- 1969 Director, Terrestrial Ecology and Senior Scientist I, at the Puerto Rico Nuclear Center, Rio Piedras, P.R.
- 1972 Prof. of Biology, Ad honorem, University of Puerto Rico, Rio Piedras.

Others:

A. Ad Hoc Committees

1. Interagency Committee on Water Resources, Department of Public Works, Commonwealth, 1972.
2. Member of Oceanographic Project Control Board, Area of Natural Resources, Department of Public Works, Commonwealth 1971 - 1972.
3. Advisory Committee to the President of the University of Puerto Rico on Environmental Studies 1972 - 1973.
4. Committee on Caribbean National Forest Land and Resources Management. U.S. Department of Agriculture, Forest Service, Institute of Tropical Forestry 1973.
5. Advisory Committee of the Environmental Quality Board, Commonwealth, 1973.

B. Offices

- Treasurer, Sigma Xi Club, University of Puerto Rico, Rio Piedras, P.R.
1970 - 1973.
- President, Sigma Xi Club, University of Puerto Rico, Rio Piedras, P.R.
1973.

Publications

Approximately 15

CURRICULUM VITAE

NAME: José Antonio Colón

PRESENT ADDRESS: El Verde Field Station, Terrestrial Ecology Program,
Puerto Rico Nuclear Center, Route 186, Km. 19.3
Rio Grande, Puerto Rico.

PLACE AND DATE OF BIRTH: June 10, 1944, Hato Rey, Puerto Rico

CIVIL STATUS: Married

PRESENT POSITION: Research Associate I, Terrestrial Ecology Program
Puerto Rico Nuclear Center, Rio Piedras, P. Rico.

DEGREES: Bachelor in Science with Major in Biology, 1968.

EXPERIENCE:

1968 to present - Research Assistant and Research Associate at
the Terrestrial Ecology Program, Puerto Rico
Nuclear Center.

PUBLICATIONS:

- 1970 - A Versatile Stemflow Collar for Interception Studies,
with R.G. Clements, P.R.N.C. Terr. Ecol., Ann. Rep.
- 1973 - Distribution of ^{137}Cs in Soils and Vegetation on the
Island of Puerto Rico. Health Physics, Pergamon Press.
24: 469-475.

CURRICULUM VITAE

Julio I. Colón, Ph. D.
January 1969

Present Assignment:

Associate Professor in Virology, School of Medicine
Chairman Graduate Committee School of Medicine

Education:

- a. Primary School- Eugenio Maria de Hostos, Coamo, P. R. 1943
- b. High School- Florencio Santiago High School, Coamo, P. R. 1964
- c. College- University of Puerto Rico, Rio Piedras,
Puerto Rico, B. S. -Chemistry) - 1950
- d. University of Chicago, Chicago, Illinois
Ph. D. Microbiology- 1959

Military Assignments:

U. S. Army Tropical Research Medical Laboratory - 1951-53

Civilian Assignments:

High School Teacher, Puerto Rico - 1950-51
Research Assistant, University of Chicago - 1953-59
Microbiologist, Fort Detrick, Frederick, Maryland - 1960-63
Chief , Microbiology Division, U. S. A. Tropical Research,
San Juan, Puerto Rico - 1963-65

Academic Appointments:

Associate Professor in Virology, University of Puerto Rico
1 1964 to date
Lecturer in Biochemistry, University of Puerto Rico 1964-65
National Academy of Science , National Res. Council, Post
Doctoral Fellowship- 1959-60
Research Assistant, University of Chicago- 1954-59

Memberships in Societies, Professional Groups, and Organizations:

Sigma Xi Society- 1958 (Honor Society)
American Society for Microbiologists - 1958
Biophysical Society- 1963
Tissue Culture Association- 1966

Teaching Assignment:

Participate in the teaching of the following courses:

- a. Medical Microbiology
Laboratory and lectures
- b. Graduate Courses in Virology
Laboratory and Lecture
- c. Graduate Course in Tissue Culture
Laboratory and Lecture

Problems of Investigation

- a. Radiation activation of Latent virus in Wild Arthropods and Vertebrates.
- b. Effect of Radiation on Interferon Production in Animals and Tissue Cultures.
- c. The Microbiology of Infantile Diarrhea.
- d. Miscellaneous studies.
 1. Changes Produced in the Intestinal Mucosa due to Viral and Bacterial Infection in Pigs.

Research Grants

United States Atomic Energy Commission
Medical Sciences & Radiobiology Division \$40,000

Special Travels

- a. The 68th Annual Meeting of the American Society for Microbiology
Detroit, Michigan May 5-9, 1968
- b. 11th Central American Congress for Microbiology
Panamá City, Panamá Dec- 1-7, 1968

Special Conferences

- a. Chairman of a session
Bacteriology and Mycology. 11th Central American Congress
Panamá City, Panamá
- b. Invited to participate in the Roundtable "Ecology of the Intestinal Flora", in which the following work was presented : "The Viral Etiology of Infantile Diarrhea in Puerto Rico."

- c. Effect of Radiation on Coxsackie Virus Infection. Seminar presented at the University of Puerto Rico, Department of Biology
- d. Effect of Radiation on Viral Latency, seminar presented at the Nuclear Center, San Juan, Puerto Rico

Research Interests:

Intermediate metabolism biochemistry and genetics of psittacosis-lymphogranuloma group of microorganism; mechanism of action of chemotherapeutic agents. Origin and source of infection nucleic acid. Biochemistry and genetic of the arthropod-borne viruses. Pathogenicity of enteric viruses.

Publications:

Approximately 32

CURRICULUM VITAE

NAME: Elvira Cuevas de Colón

PRESENT ADDRESS: El Verde Field Station, Terrestrial Ecology Program,
Puerto Rico Nuclear Center, Route #186, Km. 19.3,
Rio Grande, Puerto Rico.

PLACE AND DATE OF BIRTH: August 20, 1950, Santurce, Puerto Rico

CIVIL STATUS: Married

PRESENT POSITION: Graduate Research Assistant, Terrestrial Ecology
Program, Puerto Rico Nuclear Center, Rio Piedras,
Puerto Rico.

DEGREES: Bachelor in Science with Major in Biology, 1971.

EXPERIENCE:

2 years Teaching Assistant at University of Puerto Rico.
Department of Biology, Rio Piedras, Puerto Rico (1970-72).

Summer-1972, Div. of Solid Waste, Environmental Quality Board
Santurce, Puerto Rico.

July-1972 until present - Graduate Research Assistant, Puerto Rico
Nuclear Center, Terrestrial Ecology Program, Rio Piedras, Puerto Rico.

CURRICULUM VITAE

José Cuevas-Ruiz

Senior Associate, Tropical Agro-Sciences Division, PRNC
Assistant Professor (ad honorem), Horticulture Department, University
of Puerto Rico, Mayaguez

Education and Experience

- 1961 B.S. Agriculture, University of Puerto Rico, Mayaguez
- 1966 M.S. Biology, University of Puerto Rico, Mayaguez
- 1961-67 Research Assistant, Agricultural Bio-Sciences Division, PRNC
- 1967-71 Research Associate, Agricultural Bio-Sciences Division, PRNC
- 1968 to present, Assistant Professor (ad honorem), Horticulture Department,
UPR, Mayaguez
- 1971 to present, Senior Associate, Tropical Agro-Sciences Division, PRNC
- 1967-68 Lecturer and Visiting Scientist during "Atoms in Action"
Exhibits at Ecuador and Guatemala

Publications

Fifteen scientific paper were published.

Professional and Honorary Societies Memberships

1. American Society of Agricultural Sciences
2. Caribbean Food Crops Society
3. Institute of Food Technologists
4. Gamma Sigma Delta
5. Colegio de Agronomos de Puerto Rico

CURRICULUM VITAE

Delfin de León-Dancel

I. Personal Statistics

Place and Date of Birth: Manila, Philippines, April 8, 1934

Nationality: Filipino

Religion: Protestant (Baptist)

Civil Status: Married

Wife: Aida Luz Jiménez

Children: Marfa Aidelle, José Ricardo, and Juan Carlos

Address: Calle Pegaso 749, Venus Gardens, Río Piedras, P.R.

Age: 39 years

Height: 5' 11"

II. Education Background

1. Elementary School - F. G. Calderón, Manila, April 1948

2. High School - José Abad Santos High (8th honors), Manila-April 1952

3. College - College of Veterinary Medicine, University of Philippines,
April 1957, (D.V.M.)

4. Post-graduate - Texas A & M College System, August 30, 1960 - M. Sc.

- Harvard School of Public Health, 1964-65 (Special Student)

III. Employment History

1. Instructor and Veterinarian, U. P. College of Agriculture
(December 15, 1957 to October 23, 1962)

2. Assistant Parasitologist, University of Hawaii (November 15, 1962
to August 16, 1963)

3. Post-Doctoral Fellow, School of Tropical Medicine, University of
Puerto Rico (September 1, 1963 to August 31, 1964)

4. Instructor, U. P. College of Veterinary Medicine, Diliman,
Quezon City (August 26, 1965 to June 30, 1967)

IV. Background in Professional Societies

1. Membership in Professional Societies

- a. Gamma Sigma Delta (Honor Society of Agriculture)
- b. Phi Sigma, Alpha Chi Chapter
- c. American Society of Veterinary Parasitologists
- d. American Veterinary Medical Association

V. Languages Spoken

- 1. Filipino (Tagalog)
- 2. English
- 3. Spanish

VI. Publications

Approximately 25

CURRICULUM VITAE

S. N. Deshpande
Scientist I, Puerto Rico Nuclear Center
Associate Professor of Chemistry, University of Puerto Rico, Mayaguez

Education and Experience

- 1962 M.S. in Food Technology (with biochemistry and bacteriology as supporting fields), Purdue University
- 1964 Ph.D. in Food Technology (with chemistry and nucleonics as supporting fields), Purdue University
- 1964-66 Assistant Professor and Head of the Isotope Technology Department, Tuskegee Institute, Alabama
- 1965 Summer Research participant at PRNC, sponsored by the Oak Ridge Institute of Nuclear Studies
- 1966-68 Associate Scientist I, PRNC
- 1967-68 Assistant Professor of Chemistry (ad honorem), UPR, Mayaguez
- 1968-69 Assistant Professor of Chemistry, UPR, Mayaguez
- 1968 to present, Scientist I, PRNC
- 1969 Research participation at the Max Planck Institute of Biochemistry, Munich, West Germany
- 1969 to present, Associate Professor of Chemistry, UPR, Mayaguez
- 1969-71 Scientific Consultant, I.C.A.I.T.I., Guatemala. Sponsored by the Organization of American States, Washington, D.C.

Publications

Sixteen scientific papers were published.

CURRICULUM VITAE

NAME René Dietrich Ormachea, M.D.

BORN La Paz, Bolivia - March 29, 1940

HOME ADDRESS Tolosa 296, College Park, Rio Piedras, P. R. 00921

ACTIVITY Nuclear Medicine

EDUCATION

School Mariscal Braun, La Paz, Bolivia 1947-1949
Sagrado Corazón, Sucre, Bolivia 1949-1952

High School Sagrado Corazón, Sucre, Bolivia 1953-1957
San Calixto, La Paz, Bolivia, 1957-1958

University Universidad Mayor de San Andrés
Facultad de Medicina y Cirugía, La Paz,
Bolivia, 1959-1965

Degree Physician-Surgeon, May 1966

POST GRADUATE

Digestive system diseases course, La Paz, Bolivia, 1966
Clinic Endocrinology Course, La Paz, Bolivia, 1966
Basic Course of Radioisotopes Clinical Applications,
La Paz, Bolivia, 1966
Pediatrics actualization course, Jujuy, Argentina, 1967
Clinic Radiodiagnostic course, La Paz, Bolivia, 1968
XII Course of Methodology and Medical Applications
of Radioisotopes (Institute of Atomic Energy and
Hospital of Clinics, San Pablo, Brazil) 1970
under Atomic Energy Institute of Brazil sponsorship
Basic Radioisotope Techniques Course and Clinical
Applications of Radioisotopes Courses, Puerto Rico
Nuclear Center, San Juan, Puerto Rico under the
International Atomic Energy Commission, Vienna,
Austria sponsorship, 1971
Lung Scanning Course, Puerto Rico Nuclear Center,
San Juan Puerto Rico, 1971
Pediatrics Nuclear Medicine Symposium, The John
Hopkins Medical Institutions, Baltimore, Maryland,
U.S.A., 1972
E.C.F.M.G. Certificate, February, 1972
Puerto Rico Board of Medical Examiners, Commonwealth
of Puerto Rico License, September 1973
Nuclear Cardiology Course, The John Hopkins Medical
Institute, Baltimore, Maryland, U.S.A., 1973

EXPERIENCE Nuclear Medicine

Assistant Medical Officer in the Nuclear Medicine
Center, La Paz, Bolivia, February 1970 - May 1970

Special Training in Nuclear Medicine at the
Hospital of Clinics and the Atomic Energy
Institute, San Pablo, Brazil, August -
December, 1970

Special Training in Nuclear Medicine at the
Puerto Rico Nuclear Center, April 1971 to
June 1972

Scientist II, Clinical Applications Division,
Puerto Rico Nuclear Center, July 1972-present

Other Experience

General Staff of the Armed Forces, La Paz,
Bolivia, from February 1961 to June 1962

Department Assistant in Physiopathology in
the Universidad Mayor de San Andrés, from
March 1963 to November 1965

Resident Physician in Yacimientos Petrolíferos
Fiscales Bolivianos, from July 1966 to
January 1970

PRESENTATIONS AT
SCIENTIFIC MEETINGS

Two up to date

MEDICAL SOCIETIES
MEMBERSHIP

Nuclear Medicine Society
Puerto Rican Nuclear Medicine Society
Puerto Rico Chapter, American Heart Association

November 1973

CURRICULUM VITAE

George E. Drewry

I. GENERAL

Name: George E. Drewry

Present Position: Puerto Rico Nuclear Center

Place and Date of Birth: Nashville, Tennessee
February 10, 1935

Marital Status: Wife: Julia R. Drewry
Children: Steven Bryan - born 1961
Richard Kirk - " 1964

Office Address: Biomedical Building
Puerto Rico Nuclear Center
Caparra Heights Station
San Juan, Puerto Rico 00935
Phone: Area Code 804-767-0350 ext. 251

Home Address: Box 907
Rio Grande, P.R. 00745
No Phone

II. EDUCATION

B.S., June 1958, George Peabody College for Teachers, Nashville, Tennessee, (major-Biology, minor-Physical Sciences).

M.A., August 1962, The University of Texas, Austin, Texas, (major-Zoology, minor-Botany, Clark Fubbs, major professor).

Ph.D., in progress, the University of Texas, Austin, Texas, (major-Zoology, minor-Botany, Clark Rubbs, major professor).

III. AWARDS, HONORS, AND SCHOLARSHIPS

Honorable Mention-Westinghouse Science Talent Search, 1953

Five Undergraduate Scholarships for Tuition and Fees, 1953-1957

Beta Beta Beta, 1954

NSF Cooperative Graduate Fellowship, 1959-1960

Two NSF Predoctoral Fellowships 1960-1962

IV. PROFESSIONAL SOCIETIES

Tennessee Academy of Science - Junior Member

Texas Herpetological Society

Southwestern Association of Naturalist

American Society of Ichthyologists and Herpetologists
Ecological Society of America
Association for Tropical Biology
The Society for the Study of Evolution

V. CRONOLOGICAL LISTING OF POSITIONS

Teaching Assistant in freshman biology laboratory, University of Texas,
1957 - 1959
NSF Cooperative Fellow, University of Texas, 1959 - 1960
NSF Predoctoral Fellow, University of Texas, 1960 - 1962
Teaching Assistant in advanced mammalian physiology, 1962 - 1963
Technical Assistant in Radio Television, University of Texas, 1963
Research Associate, Puerto Rico Nuclear Center, 1963 - 1964
Associate Scientist I, Puerto Rico Nuclear Center 1964 - 1969
Scientist II, Puerto Rico Nuclear Center, 1969 to date

VI. TEACHING EXPERIENCE

Instructor in nature study, Peabody Demonstration School (7th grade), 1955.
Student teacher in high school biology, Madison High, 1956.
Instructor (SP-4 and SP-5) in numerous short courses, U.S. Army Reserves,
including first aid, signal corps practice, and principles of operation
and maintenance of single engine aircraft, 1955 - 1962.
Two years teaching assistant (laboratory instructor) in freshman biology
at the University of Texas, 1957 - 1959.
One year teaching assistant (laboratory instructor) in advanced mammalian
physiology, University of Texas, 1962 - 1963.

VII. PUBLICATIONS

Approximately 19 to date.

CURRICULUM VITAE

Name: Manfred K. Eberhardt

Place of birth: Heidenheim/Brenz, Germany. Date of birth: Dec. 5th., 1930

Marital status: single

Present address: Puerto Rico Nuclear Center,
Bio-Medical Building
Caparra Heights Station
San Juan, Puerto Rico, 00935

Educational background:

<u>Name and location</u>	<u>Years</u>	<u>Major field</u>	<u>Minor fields</u>	<u>Degree and date</u>
Universitat Tubingen (Germany)	1950-57	Organic Chemistry	Physics, biochemistry, botany, zoology	Ph.D. 1957

Experience:

<u>Name and location</u>	<u>Years</u>	<u>Supervisor</u>	<u>Field of research</u>
University Tubingen	1955-57	Dr. H. Hellmann	Mannich reactions, synthetic Organic chemistry
University of Chicago	1957-59	Dr. W.G. Brown	Radiation chemistry
University of Arkansas Fayetteville, Ark.	1959-60	Dr. A. Fry	Isotope effect studies, Isotope tracer work
University of Notre Dame Notre Dame, Indiana	1960-62	Dr. E.L. Eliel	Free radical reactions, isotope work, conformational analysis
Mellon Institut Pittsburgh, Pa.	1962-64	Independent Research	Radiation chemistry, photochemistry, free radical reactions
Technische Hoch- schule, Munich	1965-67	Independent Research	Radiation chemistry
Puerto Rico Nuclear Center, San Juan, Puerto Rico	1967	Independent Research and Teaching	Radiation chemistry, free radical reactions, quantum chemistry

Honorary appointments:

University of Puerto Rico, Dept. of Chemistry - Ad honorem professor - 1971

University of Puerto Rico, School of Medicine - Ad honorem professor - 1972

Teaching experience:

"Introduction to Radiation Chemistry" and "Introduction to Molecular
Orbital Theory"

Publications:

Approximately 17 publications to date.

11/15/73

CURRICULUM VITAE

NAME: Alejo Estrada Pinto

PRESENT ADDRESS: Calle Julio Millán #B-11, Villas de Rio Grande,
Rio Grande, Puerto Rico.

PLACE AND DATE OF BIRTH: July 24, 1936, Rio Grande, Puerto Rico.

CIVIL STATUS: Married

PRESENT POSITION: Research Assistant II, Terrestrial Ecology Program,
Puerto Rico Nuclear Center, Rio Piedras, Puerto Rico.

EXPERIENCE:

1955 - 1963 Field worker in the U.S. Forest Service

1963 to present : Terrestrial Ecology Program, Puerto Rico
Nuclear Center.

PUBLICATIONS:

1970 - Phenological Studies of Trees at El Verde, Chapter D-14
in A Tropical Rain Forest, H.T. Odum, Editor, AEC Div. of
Technical Information.

1970 - Forest Recovery Following Gamma Irradiation, with George
E. Drewry, Puerto Rico Nuclear Center, Terrestrial Ecology
Program. Ann. Rep.

CURRICULUM VITAE

F. F. Ferguson

- Born : July 7, 1908-Knoxville, Tennessee
- Educated : University Tennessee-B.A. 1932; M. S. 1934 Univ. Virginia; Ph. D. 1938-Unv. Virginia
- Taught : Biology and Parasitology-College of William and Mary, 1941-44; Univ. Washington 1948-50
- Service : U. S. Public Health Commissioned Officer for 30 years Scientist Category -Rank O-6, Captain (Ret.)
- Positions : Research Staff, Center for Disease Control, Ecological Investigations Program; Chief, Tropical Disease Laboratory 1954-71; Special Assistant to Director, E L P 1972, Acting Head, Medical Sciences & Radiobiology, PRNC, 1973
- Research : Ecology and taxonomy of platyhelminths and Planorbidae; Insecticides of control of arthropod disease-vectors; Biocontrol of bilharzia snail vectors
- Awards : Du Pont Scholarship in Biology; Isaac González Martfnez; Silver Beaver (BSA)
- Chairmanships : Executive Secretary, P. R. Committee for Bilharzia Control; Caribbean Committee for Bilharzia Research
- Publications : Approximately 150 from 1934-73
- Consultations : Foreign governments and international agencies (WHO, AID, Smithosina Inst.) on biology and control of Schistosomiasis
- Ad Honorem : Department of Medical Zoology; Department of Public Health, University of Puerto Rico

CURRICULUM VITAE

José A. Ferrer-Monge
 Senior Scientist, Tropical Agro-Sciences Division, PRNC
 Professor of Biology, University of Puerto Rico in Mayaguez

Education and Experience

- 1945 B.S. (Agriculture) University of Puerto Rico, Mayaguez
- 1945-47 Assistant Plant Geneticist, Institute of Tropical Agriculture, Mayaguez
- 1948 M.S. (Genetics), Missouri University
- 1948-54 Assistant Professor, Biology Department, UPR, Mayaguez
- 1954-55 Research Assistant, Missouri University
- 1955-57 Assistant Professor, Biology Department, UPR, Mayaguez
- 1957 Radioisotope Techniques Institute, ORINS, Tennessee
- 1958 Ph.D. (Genetics), Louisiana State University
- 1958-59 Health Physics Training, ORNL, Tennessee
- 1959-65 Chief Scientist and Head, Health Physics Division, Puerto Rico Nuclear Center, Mayaguez
- 1959 to present, Professor, Biology Department, UPR, Mayaguez
- 1965 to present, Senior Scientist, Tropical Agro-Sciences Division, PRNC, Mayaguez
- 1968 to present, Member Advisory Committee to the Puerto Rico Radiation Protection Board.

Publications:

Three scientific papers were published.

Name	Gileadi, Aviva E.
Date of birth	26 November 1917
Academic rank	Full Professor, Full Time
Degrees	Ph. D. Physics, 1941 - "Pázmány Péter" Univ., Budapest, Hungary M.Sc. Nuc. Eng. Dept. 1960 - Univ. of Michigan, Ann Arbor, Michigan
Service on Faculty	9 years
Other experience	September 1952 - October 1955, Teacher of Mathematics, Physics and Chemistry - Givath Hashlosa High School, Givath Haslosa, Israel. September 1959 - September 1961, Graduate Student Nuclear Engineering Department, University of Michigan, Ann Arbor, Michigan. October 1955 - November 1963, Senior Lecturer, Technion Israel Institute of Technology, Haifa Israel. November 1963 - December 1964, Reactor Physicist Puerto Rico Water Resources Authority, Rincón. December 1964 - June 1967, Associate Professor, University of Puerto Rico, Mayaguez Campus, Mayaguez, P. R. Department of Nuc. Engineering, Chief Scientist, Puerto Rico Nuclear Center. June 1967 - Present, Professor, Nuc. Eng. Department, Univ. of Puerto Rico, Mayaguez, Deputy Director of N. E. Dept. Mayaguez Campus, Chief Scientist, Puerto Rico Nuclear Center, Nuc. Eng. Division, Deputy Division Head. Summer 1968 - Visiting Scientist, Brookhaven National Laboratory, Div. of Theoretical Reactor Physics. January 1 - June 30, 1970, Visiting Scientist Courant Institute of Mathematical Sciences, New York University. July 1970 - June 1971, Acting Head NuEg Dept. UPR Acting Head NuEg Div. PRNC
Consulting work	None

States in which registered	None
Membership in scientific and professional societies	ANS, American H. P. Society
Honors and awards	None
Subjects or courses taught this year	Nu Eg 621 Reactor Theory 3 credits Nu Eg 699 Research 3 Grad. Students
Other assigned duties	Comité de Asuntos Académicos } College of Comité de Ascensos } Engineering
Programs participated in, to improve competence as teacher	Visiting Scientist: Brookhaven National Lab. 1968 Summer. Visiting Scientist: Courant Institute of Mathematical Sciences Jan.1- Jun.30, 1970 Selected as Participant in Nautauqua Type Short Course Oct. 29-30, 1973.
Publications	Approximately 15 to date.

Name: Michael Gileadi
 Place and Date of Birth: Poland, May 22, 1911
 Civil Status: Married, two children
 Home Address: P.O. Box 3242, Mayaguez, P.R. 00708

Educational Background:

Completed the College of X-Ray Technicians at Beilinson Hospital,
 Petach Tiqa, Israel, 1951.

B.A. Humanities, 1967. University of Puerto Rico, Mayaguez Campus.

M.Sc. Sanitary Sciences, 1969. University of Puerto Rico, School of Public
 Health, San Juan, P.R.

Professional Experiences:

	<u>Position</u>	<u>Institution</u>
1948-1959	X-Ray Technician, Dept. of Neurosurgery	Beilinson Hospital, Petach Tiqa, Israel
1960-1961	X-Ray Technician, University Medical Center X-Ray Dept.	University of Michigan, Ann Arbor, Michigan
1961-1963	Chief X-Ray Technician	Clinic of General Sick Fund, Haifa, Israel
1964-present	Scientist I ; Head of Joint Radiation Survey Project	Puerto Rico Nuclear Center, Mayaguez, Puerto Rico

Societies:

Health Physics Society of Puerto Rico
 Health Physics Society (National)
 American Public Health Association
 World Association of Composers

Research Activities:

Evaluation of Health Hazards Associated with
 X-Ray Diagnosis in Puerto Rico.
 Phantom and in vivo dosimetry.

Publications:

18 publications

CURRICULUM VITAE

Julio A. Gonzalo-González

NAME : Julio A. Gonzalo-González
 ADDRESS : Box 5051, College Station
 Mayaguez, Puerto Rico
 DATE OF BIRTH : April 27, 1936
 PLACE OF BIRTH : Donalbay, Lugo, Spain
 MARITAL STATUS : Single
 PRESENT CITIZENSHIP : Spanish
 ELEMENTARY SCHOOL : Escuela I. Almazan, Madrid, Spain
 Graduated - June 1947
 SECONDARY SCHOOL : Instituto Nacional S. Isidro,
 Madrid, Spain
 Graduated - June 1954
 UNIVERSITY : University of Madrid, Faculty of Physical
 Sciences
 Licenciature, (Theoretical Physics) -
 September, 1959
 Ph.D., High Honors, (Solid State) -
 January, 1962
 POSTGRADUATE COURSES : "Winter Institute in Quantum Chemistry
 and Solid State Physics", University
 of Gainesville, Fla. - December 1962,
 January 1963.
 A one-semester course on "Solid State
 Physics" by Dr. B. C. Frazer, Senior
 Scientist in the Neutron Diffraction
 Program in Brookhaven National Laboratory.
 Mayaguez-January-May 1963.
 EXPERIENCE : September 1959 to July 1960. Assistant
 Professor (Part-time) in the University
 of Salamanca, Salamanca, Spain.

Research Collaborator, Neutron
Diffraction Group, Brookhaven
National Laboratory (1963-64).

Assistant Professor (1962-65),
Associate Professor (1965-),
Physics Department, University
of Puerto Rico, Mayaguez, P.R.

Research Associate (1962-65),
Associate Scientist (1965-67),
Scientist (1967-68)
Senior Scientist (1969-)
Puerto Rico Nuclear Center
(U.S. Atomic Energy Commission)
Mayaguez, Puerto Rico

Acting Head (1966-68),
Head (1968-)
Nuclear Science Division

PROFESSIONAL
SOCIETIES :

American Physical Society
Asociación de Maestros de Ciencia
de Puerto Rico.
Asociación Nacional de Físicos de
España.

PUBLICATIONS:

Approximately 23.

Curriculum Vitae

MORTIMER I. KAY

Born - August 27, 1930 - Brooklyn, New York

Status - Married - 1 child

University Education -

B. A. (Chemistry) Brooklyn College, New York - 1952
M. S. (Phys. Chem.) Purdue University - 1953
Ph. D. (Phys. Chem.) University of Connecticut - 1957

Experience

Grad. Assistant, Purdue University (1952-53)
Grad. Assistant, University of Connecticut (1953-56)
Research Assistant in Crystallography, University of Connecticut
(1956-57)
Research Associate and Visiting Associate Physicist, Penn. State
University and Brookhaven National Lab² (1957-59)
Post-Doctoral Fellow, Royal Norwegian Council for Scientific
and Industrial Research, Institute for Atomenergi, Kjeller,
Norway (1959-60)
Solid State Physicist (Crystallographer), NASA, (1960-62).
Research Associate Professor of Chemistry, Engineering Experiment
Station, Georgia Institute of Technology (1962-64)
Head, Neutron Diffraction Program, Puerto Rico Nuclear Center
(1964 to date)

Societies

American Crystallographic Assn.
American Physical Society
American Chemical Society
Sigma XI
American Association for the Advancement of Science

Publications

About 50 publications.

CURRICULUM VITAE

Seppo E. Kolehmainen
 Ecologist
 Scientist II, Head of Marine Biology Program
 Puerto Rico Nuclear Center

Birth : February 28, 1939, Espoo, Finland
 Nationality: Citizen of Finland, permanent resident in U.S.A.

EDUCATIONAL BACKGROUND:

B.S. University of Helsinki, Helsinki, Finland, 1963
 Major: Zoology
 M.S. University of Helsinki, Helsinki, Finland, 1964
 Majors: Zoology and Limnology
 Ph. Lic. University of Helsinki, Helsinki, Finland, 1967
 Major: Ecology
 Ph.D. University of Tennessee, 1969
 Major: Ecology

WORKING EXPERIENCE:

Summer Research participant in the Department of Radiochemistry
 at the University of Helsinki, 1963.

Predoctoral Research Fellow of the Finnish Atomic Energy
 Commission in the Department of Radiochemistry at the University
 of Helsinki, 1964-67.

Predoctoral Research Fellow of the Finnish AEC in Radiation
 Ecology Section at Oak Ridge National Laboratory and at the
 University of Tennessee, 1967-69.

Research Assistant in the Department of Zoology at the University
 of Tennessee, 1968-69.

Scientist I in Marine Biology Program at Puerto Rico Nuclear
 Center, 1969-70.

Scientist II in Jobos Bay Program at Puerto Rico Nuclear
 Center, 1971

Scientist II, Head of Guayanilla Bay Program at Puerto Rico
 Nuclear Center, 1972

Scientist II, Head of Marine Biology Program at Puerto Rico
 Nuclear Center, 1972 - present.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS:

International Oceanographic Foundation
Fisheries Research Board of Canada
Health Physics Society
National Geographic Society

LABORATORIES VISITED:

Radioecological and Oceanographic Laboratories in the
U.S.A., Canada, France, Finland, Germany, Monaco and
Sweden.

PARTICIPATIONS IN SPECIAL PROGRAMS:Scientific cruises:

From California to Puerto Rico in April, May, 1971.
Collected fish and plankton samples for trace element
analysis.

From Hawaii to Bikini Atoll, Marshall Islands in September -
November, 1972. In charge of the sampling of biological
samples for transuranium analyses.

Saturation diving:

Participated in the Puerto Rico International Undersea
Laboratory in Puerto Rico, December 1972. Spent two weeks
at 55' studying populations of ascidians on a reef and
collecting sediments and plankton samples for trace element
analyses.

PUBLICATIONS

Approximately 25 to date.

Francis K. S. Koo
Senior Scientist and Head, Tropical Agro-Sciences Division, Puerto Rico
Nuclear Center
Professor of Biology (Ad Honorem)
Professor of Agronomy, University of Puerto Rico

Education and Experience

- 1950 Ph.D. in Plant Genetics, University of Minnesota
- 1950-51 Research Assistant, Department of Agronomy and Plant Genetics,
University of Minnesota
- 1951-53 Research Fellow, University of Minnesota
- 1953-61 Project Leader, Oats and Rye Improvement, University of
Minnesota. (Breeder of two oat varieties, Minland and
Minhafer, released in Minnesota).
- 1961-67 Associate Scientist II, Agricultural Bio-Sciences Division,
Puerto Rico Nuclear Center
- 1961 to present, Professor of Biology, (ad honorem), University of
Puerto Rico
- 1966 National Visiting Professor, National Taiwan University, Taiwan
- 1967-68 Chief Scientist, Agricultural Bio-Sciences Division, Puerto
Rico Nuclear Center
- 1968 to present, Senior Scientist and Head, Tropical Agro-Sciences
Division, Puerto Rico Nuclear Center
- 1972 to present, Professor of Agronomy, University of Puerto Rico

Publications

Some 30 scientific papers and over two dozens of abstracts, short notes,
reports, etc. in the field of genetics, cytogenetics, radiobiology, etc.
were published.

Professional Society Memberships

1. Genetic Society of America
2. Radiation Research Society

Honorary Society Memberships

1. Sigma Xi Society
2. Gamma Sigma Delta
3. American Association for the Advancement of Science

CURRICULUM VITAE

ALDO E. LANARO, M.D. - Director, Clinical Applications Division
Chief Scientist I, Puerto Rico Nuclear Center

BORN Buenos Aires, Argentina - January 29, 1920

CITIZENSHIP Naturalized U. S. Citizen

HOME ADDRESS Condominio Palma Real, Apt. 4-F
Madrid 2, Miramar, Santurce, Puerto Rico 00907

TELEPHONE 722-6158

ACTIVITY Nuclear Medicine - Endocrinology

EDUCATION Teacher, Normal Course, 1937
Bachelor Degree (Equivalent to High School), 1938
Normal Professor in Sciences, 1940
Physician, School of Medicine, University of
Buenos Aires, Argentina, 1949
Medicine Doctor, University of Buenos Aires, 1950

LICENSURES Argentine School of Medicine, University of
Buenos Aires, Lic. #11,300 - 1949
Puerto Rico Board of Medical Examiners, Commonwealth
of Puerto Rico, Lic. #3744 - 1972
American Board of Nuclear Medicine - March 25, 1972

Post-Graduate

Post-graduate courses at the University of Buenos
Aires, Argentina:

Endocrinology, 1951-52
Gynecological Therapeutics, 1950
Practical Gynecology, 1951
Preparatory Course on College Teaching, 1952-53
Advanced course on Endocrinology, 1952
Course on Pediatric Endocrinology, 1953
Advanced course on Endocrinology, 1953
Theoretical and Practical Course on Diagnosis
and Treatment of Suprarenal Diseases, 1953
Diagnostic in Gynecology, 1954
Graduate training in Biophysics Teaching, 1954-56
Psycoanalysis Course, 1956
Basic Course on Clinical Applications of Radio-
isotopes, Argentine Atomic Energy Commission,
1957
Basic Radioisotopes Techniques Course, and
Basic Clinical Applications of Radioisotopes
Course, Puerto Rico Nuclear Center, 1959,
under World Health Organization Sponsorship.

Visit to several nuclear facilities in the USA,
1959, as part of the World Health Organization
training program.

EXPERIENCE

Nuclear Medicine

In charge of the Radioisotopes Department of the
Research Medical Center at the Tornú Hospital,
Buenos Aires, Argentina, 1954-60

Director of the Radioisotopes Department of the
Endocrinology and Metabolism Hospital, 1957-63

In charge of the Radioisotopes Department at the
Argentinian Institute of Diagnosis and Treatment,
1959-61

Associate Scientist II, Clinical Applications
Division, Puerto Rico Nuclear Center, 1963-67

Courtesy Member, Nuclear Medicine, I. González
Martínez Oncologic Hospital, 1969

Chief Scientist I and Deputy Director, Clinical
Applications of Radioisotopes Division, Puerto
Rico Nuclear Center, 1967-69

Chief Scientist I and Acting Director, Clinical
Applications of Radioisotopes Division,
Puerto Rico Nuclear Center, 1969-71

Chief Scientist I and Director, Clinical Applic-
ations Division, Puerto Rico Nuclear Center,
1971-present.

Courtesy Member in Nuclear Medicine, Hospital
Meléndez, Bayamón, Puerto Rico, 1972

Courtesy Member in Radiology, Auxilio Mutuo
Hospital, 1972

Other Professional Experience

Endocrinologist at the Endocrinology and Metabolism
Hospital, 1957-63, Buenos Aires, Argentina

Medical Practitioner at the Hospital Las Heras,
Buenos Aires, Argentina, 1947-50

Attending Doctor at the Italian Hospital, Buenos
Aires, Argentina, 1949-52

Attending in Medicine, Argentine Air Force Health
Department, 1950-60

Assistant Doctor at the National Endocrinology
Institute, Buenos Aires, Argentina, 1952-57

Associate Clinic in Medicine (Ad Honorem)
 Medical Department of the School of Medicine,
 University of Puerto Rico, 1966

Assistant, University Hospital, 1968

Clinical Assistant Professor of Medicine, Medicine
 Department, School of Medicine (Ad Honorem)
 University of Puerto Rico, 1973

Other Activities

Secretary-Editor of the "Endocrinology and
 Metabolism Hospital" Bulletin, 1962-63

Member of the Organizing Committee of the
 Argentinian Society of Nuclear Medicine, 1963

Honorary President of the Argentinian Society
 of Nuclear Medicine, 1963

Honorary Member of the Peruvian Society of Biology
 and Nuclear Medicine, 1964

Chairman, Nuclear Medicine Committee, X Inter-
 American Congress of Radiology, 1971

Member of the Organizing Committee of the Nuclear
 Member Society of Puerto Rico, 1971

President, Nuclear Medicine Society, Puerto Rico,
 1971

Sub-Treasurer of the ALASBIMN (Asociación Latino-
 Americana de Sociedades de Biología y Medicina
 Nuclear) November 24, 1972

Member of the Editorial Consulting Board, Revista
 de Biología y Medicina Nuclear (Asociación Lati-
 no-Americana de Sociedades de Biología y Medicina
 Nuclear Publication), 1972

PUBLICATIONS

Approximately 14 to date

PRESENTATIONS AT
 SCIENTIFIC MEETINGS

Approximately 27 to date

MEDICAL SOCIETIES
 MEMBERSHIP

Argentine Medical Association, Argentinian Society
 of Endocrinology and Metabolism, Argentinian Society
 of Biology and Nuclear Medicine, Puerto Rico Chapter
 Health Physics Society, Puerto Rican Society of
 Nuclear Medicine, AAAS, Health Physics Society,
 Peruvian Society of Biology and Nuclear Medicine
 (Honorary Member), Society of Nuclear Medicine,
 American Heart Association.

CURRICULUM VITAE

Rupert A. Lee

Born

January 21, 1932
Pln. Diamond, Demerara, Guyana

High School Education

Central High School, Guyana (1944-47)
Queen's College, Guyana (1947-1951)

Present Status

U.S. Citizen and Married.

Degrees

B.Sc. 2nd class Hons, University of the West Indies, 1954
M.Sc. Chemistry, University College, London, 1959
Ph.D Chemistry, University of London, 1967

Academic Experience

Science Master, Queen's College, 1954-1957 and 1959-1961.
Graduate Student, University of London, 1957-1959.
Graduate Teaching Assistant, University of Alberta, 1961-1962.
National Research Council of Canada studentship, 1962-1963.
Chemistry Master, Trinity College, 1963-1965.
Part-time Lecturer in Chemistry, University of the West Indies,
Trinidad, 1964-1965.
Research Associate PRNC and Assistant Professor of Chemistry, UPR,
1965-1967.
Scientist PRNC and Associate Professor of Chemistry, 1967 to date.

Research Experience

Worked in the field of gas kinetics on the "Pyrolysis of Ethyl Iodide" under the supervision of Prof. Allan Maccol, University College, London, (1957-1959).

Also in the field of Radiation Chemistry on the "Radiolysis of Hydrogen Halides" under Prof. D. A. Armstrong, University of Calgary, (1961-1963).

Spent a summer at Sloan Kettering Institute for Cancer Research working on "Radiation Protective Studies Using ESR," with Dr. Ira Pullman (1969).

Spent a summer at University Chemical Laboratory Cambridge, England with Prof. Jack Lewis (study the radiation effects on some transition metal carbonyls).

Present interests are (1) Radiation Chemistry of Gaseous Organic Fluorides, (2) Radiolysis of Organic Sulfur Compounds in Aqueous Solutions, (3) Radiation Protection Studies Using ESR.

Societies

American & British Chemical Societies

Foreign Language

Read French, German and Spanish

Publications

Approximately 14.

CURRICULUM VITAE

Félix Liard-Bertín

1. Born : October 14, 1937 - Rio Piedras, Puerto Rico
2. Scientist Associate I. Puerto Rico Nuclear Center, Rio Piedras, P. R.
3. Degrees:
 - 1942-1955 Elementary, Junior, High School - Rio Piedras Public School
 - 1955-1959 Bachelor in General Sciences, University of Puerto Rico
 - 1959 Commission of Second Lieutenant - R. O. T. C.
University of Puerto Rico
 - 1959-1963 School of Medicine, University of Puerto Rico
No degree was obtained.
 - 1964 Course in Radioisotopes techniques, Puerto Rico Nuclear Center
 - 1970 Graduate School , School of Medicine, University of Puerto Rico
At present completing the requirements for a Ph. D. in Medical Zoology.
 - 1973 Tutorial Course in Electron Microscopy - University of Chicago
4. Experience:
 - 1968- Part-time professor of General Biology, Department of Biology,
College of Natural Sciences, University of Puerto Rico.
 - 1973 At present, Lectures in Medical Zoology at the School of Medicine,
University of Puerto Rico.
Lectures in Medical Zoology and Electron Microscopy at the
Puerto Rico Nuclear Center.
5. Publications: Approximately 5

CURRICULUM VITAE

Victor A. López

Education:

San Germán Polytechnic Institute, 2 years, no degree.

Specialized courses in microbiology at Communicable Diseases Center, Atlanta, Ga., National Institutes of Health and Armed Forces Institute of Pathology.

Experience:

Administration of animal services, PRNC 1967, Schistosomiasis Project, PRNC-1971 to date.

T. cruzi Project PRNC, 1966 to 1971.

Chief Bacteriologist-U.S.A. Tropical Research Medical Laboratory, San Juan, P. R., 1959-66.

Microbiologist, U.S.A. Experimental Medicine, Fort Detrick, Md. Received award for meritorious service to the Army Research Program in defensive aspects of biological warfare, 1954-1959.

Microbiologist, U.S.A. Tropical Research Medical Laboratory, San Juan, P. R., 1947-54.

Chief Laboratory Technician, U. S. A. Hospital, San Juan, P. R., 1944-47.

Laboratory Technician, U. S. A. Hospital, San Juan, P. R., 1941-44.

Publications:

As co-author - approximately 10

Presentations - as Co-author - approximately 25

" - as author - approximately 6

CURRICULUM VITAE

Name: Frank George Lowman

Education and Experience:

1956 - Ph.D.-University of Washington, Seattle.

1948-1954 -

Research Assistant Laboratory of Radiation Biology, University of Washington

1954-1959 -

Research Assistant Professor, Laboratory of Radiation Biology, University of Washington

1959-1961 -

Research Associate Professor. Electron microscopy, X-Ray diffraction, and terrestrial and marine radiation biology, University of Washington.

1961-1965 -

Chief Scientist II, Puerto Rico Nuclear Center, Professor of Biology, CAAM, Mayaguez, Puerto Rico.

1965-1973 -

Head, Radioecology Division, PRNC, Mayaguez, P. R.

1971- to present -

Associate Director for Environmental Sciences, PRNC, Mayaguez

1973 to present -

Associate Director, Puerto Rico Nuclear Center

Publications:

About 40 publications.

Curriculum Vitae

RASTKO C. MAGLIC

Born: 7 January 1933, Sombor Yugoslavia

Marriage Status: Married, two children

University Education:

Ing - degree (E.E.) University of Belgrade, Yugoslavia
(1958).

M.Sc. in Physics, Univ. of Belgrade, Yugoslavia, (1963).

Ph.D. in Physics, M.I.T., Cambridge, Massachusetts.

Experience:

Research in Neutron Physics, Institute for Nuclear
Sciences, Belgrade, Yugoslavia (1958-9).

Group leader, Neutron Time-of-Flight Spectroscopy
Institute for N.Sc., Belgrade (1959-63).

Assistant Professor in E.E., Belgrade, (1960-63).

Graduate Assistant, Physics Dept., M.I.T., (1963-69).

Post-Doctoral Fellow in Material Sc. Division, Argonne
National Laboratory, Argonne, Ill. (1969-72).

Assistant Professor in Physics, U.P.R., Mayaguez and
part time reasearch at P.R.N.C., Mayaguez (1972-3).

Sosietes:

Americal Physical Society

American Association of Physicists.

Publications:

About fifteen publications.

November 14, 1973

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CURRICULUM VITAE

VICTOR A. MARCIAL, M.D.

- Born : San Juan, Puerto Rico - February 24, 1924
- Field : Radiotherapy and Cancer
- Education : B.S. University of Puerto Rico, Río Piedras, Puerto Rico, May 1944
M.D. Harvard Medical School, Harvard University, Boston, Mass., June 1949.
- Certifications : Certified National Board of Medical Examiners, July 1950
Certified Puerto Rico Board of Medical Examiners, September 1954
Certified by American Board of Radiology (Radiation Therapy), May 1955.
- Specialty Training: Internship - Bayamón District Hospital, San Juan, Puerto Rico, 1949-50
Resident in Radiation Therapy - Penrose Cancer Hospital, 1951-53
Fellow (American Cancer Society) in Radiation Therapy, July 1953 to August 1954 at European institutions (Curie Foundation, Paris; Christie Hospital, Manchester; Radiumhemmet, Stockholm; Radium Station, Copenhagen; and Royal Marsden, London).
Resident in Radiation Therapy-1954-55 (Surgical Pathology - 6 months at Washington University, St. Louis; and Radiation Therapy - 6 months at Tumor Institute, Seattle, Washington).
- Experience: Attending in Radiation Therapy, I. González Martínez Hospital, October 1955 to June 1973.
Chief, Radiation Therapy Department, I. González Martínez Hospital, November 1958 to September 1971.
Director, Radiotherapy and Cancer Division, Puerto Rico Nuclear Center, July 1958 to date.
Associate Director for Medical Programs, Puerto Rico Nuclear Center, January 1967 to date.
Director, Cancer Control Program, Puerto Rico Department of Health, October 1955 to June 1965.
Professor and Chief of Division of Radiation Therapy, University of Puerto Rico School of Medicine, 1958 to date.
- Other: Member, Committee for Radiation Therapy Studies, 1963-69
Member, Cancer Commission, American College of Radiology
President Elect, Tenth Interamerican Congress of Radiology
Former President, Radiological Society of Puerto Rico
Secretary for the Americas of the International Club of Radiotherapists
Counselor for Puerto Rico of the Radiological Society of North America
President-Elect of the American Radium Society
- Publications: Approximately 34 to date

CURRICULUM VITAE

F. Douglas Martin
 Born: 14 August 1942 Place: Idabel, Oklahoma
 Wife: Mary Frances (Hengstebeck)
 Children: 1, age 14

High School: Gonzales High School, Gonzales, La.
 B.S.: 1964 Louisiana State University, Baton Rouge
 Major: Zoology Minor: Chemistry

M.A.: 1967 The University of Texas, Austin
 Major: Zoology Minor: Geology
 Thesis: Osmotic shock survival in certain cyprinodont fishes

Ph.D.: 1968 The University of Texas, Austin
 Major: Zoology Minor: Botany
 Dissertation: Some factors influencing penetration into rivers
 by fishes of the genus Cyprinodon

Job Experience:

1963 Chemical analyst: Olin-Revere Metals Corp., Burnside, La.

1964 Field assistant, Dr. Clark Hubbs: The university of Texas

1964-8 Teaching assistant, Comparative Anatomy, Freshman Biology,
 Vertebrate Zoology: The University of Texas

1968-71 Assistant Professor, Assistant Director of Biological
 Stations, Director of the Aquatic Research Unit: Indiana
 University, Bloomington

Taught:

1 semester: Introductory Biology - nonmajors

1 semester: Ichthyology - graduate level

2 semesters, 1 summer: Man and the Environment - a junior-
 senior level course in ecology for nonmajors

1971-Present: Senior Scientist: Radioecology Division, Puerto Rico
 Nuclear Center, Mayaguez, Puerto Rico

Publications:

Approximately 17 to date.

CURRICULUM VITAE - STEPHEN G. MARTIN

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Stephen G. Martin, Ph. D. Married. Three children. Born: November 2, 1940, Odessa, Washington, U.S.A.

EDUCATION

<u>School</u>	<u>Degree</u>	<u>Year conferred</u>
University of Washington	B.S.	1963
University of Washington	M.S.	1965
University of Washington	Ph.D.	1971

Thesis titles: "Environmental factors influencing the migration of chinook salmon (*Oncorhynchus tshawytscha*) into the home stream environment", (M.S.), and "An analysis of the histopathologic effects of copper sulfate on the Asiatic freshwater clam, *Corbicula fluminea* Muller", (Ph.D.). Dr. Albert K. Sparks and Dr. Kenneth K. Chew, Major professors.

HONORS

Sigma Xi Associate, 1964
Federal Water Quality Administration, Research traineeship, 1968

MAJOR RESEARCH INTERESTS

Invertebrate aquaculture, Environmental impact studies, Pathology

RESEARCH AND PROFESSIONAL EXPERIENCE

<u>Year</u>	<u>Title and Description</u>
1972-73	Scientist I, Puerto Rico Nuclear Center, Mayaguez, Puerto Rico. Duties: Benthic invertebrate survey of potential power plant sites; Mangrove oyster studies related to Jobos Bay project, involving population estimation and heat tolerance studies with adults and larvae.
1971-2	Shellfish biologist, Small Tribes Organization of Western Washington, Inc., Federal Way, Washington; Research involving the establishment of shellfish aquaculture programs in reservation intertidal areas. Exec. Dir.: Mr. Roy S. George, Sr.
1971	Consultant for above organization, involving an aquaculture feasibility study of selected Indian-owned intertidal land in Puget Sound, Washington.

<u>Year</u>	<u>Title and Description</u>
1970	Consultant for Boise-Cascade Properties, Inc., involving an extensive intertidal survey of the predominant macrofauna. Chief consultant: Dr. Kenneth K. Chew.
1967-70	Research associate, University of Washington, College of Fisheries; Federal Water Quality Administration Training Grant; Water Use Ecology; Advisor: Dr. George W. Brown, Jr.
1966-67	Research biologist, ITT-Rayonier, Inc., Environment Control Division, Shelton, Washington. Duties involved: 1) supervision of oceanographic field surveys concerned with evaluating biological, chemical, and physical parameters of estuaries receiving pulping effluent and 2) conducting toxicity bioassays with various effluent types to determine their degree of toxicity to indigenous fishes and certain invertebrates. Research was specifically designed to assist company management in formulating policy decisions. Chief scientist: Mr. Roger Tollefson.
1965-66	Research assistant, University of Washington, Department of Civil Engineering; Green Lake Water Quality; Supervisor: Dr. Ray T. Oglesby.
1963-65	Research assistant, University of Washington, College of Fisheries; Selective salmon breeding program; Supervisor: Dr. Max Katz

TEACHING EXPERIENCE

1968-70	Classroom and laboratory lectures in histology, pathology, and parasitology for College of Fisheries, University of Washington, Fish and Shellfish Diseases course. Classroom and laboratory lectures in the following fisheries courses, College of Fisheries, University of Washington: <ul style="list-style-type: none"> Invertebrate pathology Research techniques in shellfish biology Stream Management and Pollution
1971-72	Seminars with student groups from several Washington state colleges and community colleges related to Indian fish and shellfish aquaculture programs.

SOCIETY MEMBERSHIPS

Society of Invertebrate Pathology
 American Society of Limnology and Oceanography
 National Shellfish Association
 American Fisheries Society
 Pacific Fisheries Biologists
 Sport Fishing Institute

SKILLS

NAUI certified diver
Underwater photography
Professional typist

REFERENCES

1. Dr. Albert K. Sparks, Director, National Marine Fisheries Service, Gulf Coastal Fisheries Center, 4700 Avenue U, Galveston, Texas 77550.
2. Dr. Michael C. Mix, Department of General Biology, Oregon State University, Corvallis, Oregon.
3. Dr. David DesVoigne, Environmental Affairs Department, Port of Seattle, Seattle, Washington, 98111.
4. Dr. Kenneth K. Chew, College of Fisheries, University of Washington, Seattle, Washington, 98195.
5. Mr. James Fraser, Head, Fisheries Research Department, Small Tribes Organization of Western Washington, Inc., 33324 Pacific Highway South, Federal Way, Washington, 98002.
6. Dr. George W. Brown, Jr., College of Fisheries, University of Washington, Seattle, Washington, 98195.

MAILING ADDRESS

Puerto Rico Nuclear Center
College Station
Mayaguez, Puerto Rico 00708

PUBLICATIONS

Approximately 6 to date.

HELEN MO

Master Degree in Biology specialize in Bacteria (1970)

Previous work experiences:

1. Lipid Biochemistry lab research work in Dept. of Biochemistry & Biophysics. Texas A & M Univ., College Station, Texas 1971 - 1972
2. Microbiology lab. teaching assistant in Dept. of Biology, Sam Houston State Univ., Huntsville, Texas 1968 - 1969
3. General Zoology lab teaching assistant in Dept. of Biology. Sam Houston State Univ., Huntsville, Texas 1967 - 1968.

Name: Dr. Tin Mo

Date of Birth: August 1, 1938

Country of Birth: Burma

Country of Permanent Residence: U. S. A.

Marital Status: Married - one child

Education:

Ph.D. Chemistry (Radiochemistry and Chemical Oceanography), Texas
A & M University 1971

M. S. Chemistry (Nuclear and Radiochemistry), University of
Arkansas 1963

B. Sc. HONS. Chemistry, Rangoon University 1960.

M.S. Thesis: Yields of Zirconium Isotopes from Spontaneous and 14 Mev
Neutron Induced Fission of Uranium-238

Ph.D. Dissertation: Uranium Concentrations in Marine Sediments.

Experience:

Scientist I

Radioecology Division, Puerto Rico Nuclear Center,
Mayaguez, Puerto Rico (October 1972 to the present)

Duties:

- (a) 50% of working time spent in research on developing a non-destructive method of determining concentrations of heavy metal pollutants in airborne particulates by the neutron activation analysis technique, and in helping to organize and initiate a research program on air pollution in Puerto Rico (Jobs Bay Project sponsored by the Power Authority of Puerto Rico);
- (b) the other half of working time spent in collaborating in research on the marine radioecology and the fate and budget of transuranium elements in the Bikini Atoll nuclear testing area (U. S. A. E. C. sponsored Marine Biology Project).

Postdoctoral Research Fellow

Chemical Oceanography Department, Texas A & M University,
College Station, Texas (Summer 1972)

Duties:

Carry out research on water pollution by industrial waste effluents and on the effect of shell dredging on the ecosystem around

San Antonio Bay, Texas. Responsible for going on a research expedition and sampling of sea water, sediments, biological specimens, and on ship measurements of pH, Eh, temperature of samples, analysis of polluting heavy trace metals like mercury, lead, cadmium, arsenic, major cations by atomic absorption spectrometry, chlorinity and alkalinity titrations of the column water and interstitial waters of the marine sediments.

Postdoctoral Research Fellow

Chemistry Department, Texas A & M University
College Station, Texas (Spring 1972)

Duties:

Research in Hot Atom Chemistry. Study of recoil tritium reactions in organic halides irradiated with nuclear reactor neutrons. Radiogas chromatographic analysis of the reaction products in above study. Handled a vacuum system for transferring radioactive and hazardous gases.

Predoctoral Research Fellow

Chemistry Department, Texas A & M University
College Station, Texas (Fall 1966-Fall 1971)

Duties:

Responsible for research and development of instrumentation for non-destructive analysis of trace amounts of uranium in marine sediments. Thermal neutron activation and delayed neutron counting analysis. Measurement of uranium concentrations in marine sediments from world's major oceans, rivers, estuaries and from chemically reducing water basins and manganese nodules to study the spatial distribution, mode of deposition, enrichment and removal of uranium in the marine environment. Worked with a reputable chemical oceanographer on this project. Research resulted in two publications in two major geochemical journals. Supervised three undergraduate research fellows in radiochemistry research. Two and one-half years teaching of undergraduate chemistry labs, graded lab reports, quizzes.

Graduate Research Assistant

Chemistry Department, University of Arkansas
Fayetteville, Arkansas (Spring 1963-Fall 1966)

Duties:

Duties included radiochemical separation of fission product fallout debris in rain water, air filter samples and research in radioactive fallout. Research in nuclear fission by radiochemical methods. Processing of natural uranium ores and extraction of uranium. Separation, purification, detection and identification of fission produced radioisotopes at all levels of activity. Nuclear instruments of all types handled and operated. Interpretation of data using various models of nuclear fission.

Publications:

Approximately 8 to date.

Data sheet of

MOUNIR TAWFIK MOUSSA

Address: NC-7 Calle Lirio
 Urb. Buenaventura
 Mayaguez, Puerto Rico 00708
 Tel.: Office (809)832-8244
 Home (809)832-1262

Born June 22, 1933 5' 8" 155 pounds Married, one child

PERSONAL
 BACKGROUND

Brought up in Cairo, U.A.R., where I attended public schools. Graduated with a B.Sc. in geology and chemistry from Cairo University. Came to the United States in 1960. Received a Ph.D. in geology from the University of Utah in 1965. Became a permanent resident [Immigrant] of the United States in 1965. Married in 1965; wife is American citizen from Utah.

EDUCATION

1960-65

University of Utah, Salt Lake City, Utah
 Ph.D. (1965) in Geology with a minor in mineralogy
 Thesis: Geology of the Soldier Summit quadrangle, Utah.

1958-60

Cairo University, Cairo, U.A.R.
 Work leading to M.Sc. degree in geology. Thesis: Surface and subsurface geology of Ghazza Strip. Work not completed because of leaving to the United States.

1952-58

Cairo University, Cairo, U.A.R.
 B.Sc. in geology and chemistry (January 1958)
 [Equivalent of 60 semester credit hours in geology and 58 in chemistry]. Received Baraka's Memorial Prize in 1958 (Awarded to student with highest cumulative grade in geology in the final year).

EXPERIENCE

1965-..

Associate Professor of Geology (1969-)
 Acting Chairman, Department of Geology (1970-71)
 Assistant Professor of Geology (1965-69)
 University of Puerto Rico, Mayaguez, Puerto Rico

1971-..

Scientist--Part time
 Puerto Rico Nuclear Center
 U.S. Atomic Energy Commission
 Research work on recent marine sediments in relation to investigations of the mechanism of dispersal and distribution of trace elements in the marine environment. Also study of sediments in connection with ecological-environmental impact studies.

- EXPERIENCE**
(Cont.)
- Summer 1967 Lecturer in Geology, Queens College of the City University of New York, Flushing, N. Y.
I helped in teaching the summer field course in Puerto Rico.
- 1964-65 Department of Geology, University of Utah
Graduate Assistant
- 1958-60 Assistant Research Worker, Department of Geology
Desert Institute, National Research Center, U.A.R.
Research work on "Surface and subsurface geology of Ghazza Strip" in connection with water resources development.
- 1959-60 Demonstrator (part time), Department of geology,
Cairo University
Teaching consisted of laboratory instruction in "Gulf fossils of Egypt," and "Interpretation and construction of geologic maps."
- 1958 Chemist (Analyst), Société Egyptienne des Engrais et des Industries Chimiques, Suez, U.A.R.
- Summer 1957 Assistant Geologist, Abu Za'abal Basalt Quarries, El-Khouly Mining Co., Cairo, U.A.R.
- Summer 1956 A training program at the laboratories of the Société Egyptienne des Engrais et des Industries Chimiques, Suez.
- PROFESSIONAL SOCIETIES**
1. Geological Society of America (Member, 1963)
 2. American Association of Petroleum Geologists (Junior, 1961; Active Member, 1967)
 3. Society of Economic Paleontologists and Mineralogists (Active Member, 1963)
 4. Geological Society of Puerto Rico (Active Member, 1965) Councilor (1967-69)
- HONORARY SOCIETIES**
1. The Society of the Sigma Xi
 2. Sigma Gamma Epsilon
- PUBLICATIONS**
- Approximately 15 to date.

Muñoz Ribadeneira, Fausto J.

Radioecology Division, Scientist I
Assistant Professor, Dept. of Public Health,
UPR School of Medicine

FIELD: Chemical-Nuclear Engineering

EDUCATION: Chemical Engineering, Escuela Politécnica Nacional, Quito Ecuador 1955; University of Madrid 1958; North Carolina State College 1959. Argonne National Laboratory, Argonne, Illinois, 1959. MS. Nuclear Engineering, University of Puerto Rico 1966. Radioisotopes in Industry, Kansas State University, Summer 1964. Nuclear Explosives, PRNC Summer 1967. Dosimetry in Radiotherapy PRNC, Oct-November 1970.

EXPERIENCE: Assistant Lecturer in Chemical Engineering, Escuela Politécnica Nacional, Quito, Ecuador 1952-1954; Chemical Engineer "Cementos El Cairo", Medellín, Colombia 1955. Engineer Production Supervisor, "Cemento Chimborazo C.A.", Riobamba, Ecuador 1956-57; Chemical Engineer (Visitor), "División de Materiales", Spanish Council of Atomic Energy (J.E.N.), Madrid, Spain (1958). Resident Research Associate, Chemical Engineering Division Argonne National Laboratory, Summer 1961; Research Associate, Nuclear Science Division, PRNC, 1960-64; Head, International N.E. Exhibit Program, PRNC, 1964-1967; Principal Investigator Nuclear Explosives in Mining Program, Nuclear Engineering Division 1968-1972. Scientists I Radioecology Division, 1973 to present. Assistant Professor, Department of Public Health, UPR School of Medicine, (Part-Time) 1969 to present.

PUBLICATIONS: 20. Covering the following fields: radiation chemistry, hydrometallurgy and research activities at the N.E. International Exhibits Program. Papers presented at international meetings: 7; covering fields of Hydrometallurgy and radiation chemistry.

PRESENT FIELD OF ACTIVITIES: Air pollution.

Curriculum Vitae

Name: María L. Nazario

Bachelor of Science: University of Puerto Rico
Mayaguez Campus
Major: Biology

Master of Science: To be completed by December 1973
University of Puerto Rico
Mayaguez Campus
Major: Biology-Entomology

Memberships

- 1) Entomological Society of America
- 2) $\beta \beta \beta$ Alpha Chapter

Previous Work Experience

- 1) Research assistant at the Entomology Laboratory, UPR, Mayaguez Campus.
 - a) Insect diet preparation and rearing.
 - b) Lab maintenance and organization.
 - c) Behavior-morphology studies.
- 2) Research Work on the reproductive system of Diatraea saccharalis (F) (Lepidoptera Crambidae). Morphological and histological work for the Master thesis.

Publications

1971. New Solpugids (Arachnida: Solpugida) from Puerto Rico. J. Agr. Univ. Puerto Rico. 55(4): 506-12.

Submitted:

1973. Miskimen, G. W., and M. L. Nazario. Histological techniques for the preparation of Insect tissues and whole mounts. Ann. Entomol. Soc. America. 4 pages.
1973. Miskimen, G. W., and M. L. Nazario. Use of the microtome cryostat as a tool in insect histology. Stain Tech. 2 pages.

CURRICULUM VITAE

NAME: Gary P. Owen

DATE and PLACE OF BIRTH: 18 March 1944, Montebello, California

EDUCATION: B.S. Zoology
Calif. State University at Long Beach
M.S. Marine Biology
Scripps Institute of Oceanography
University of California at San Diego

ACADEMIC AWARDS: National Science Foundation Predoctorial
Traineeship (1967-1968)
National Science Foundation Research
Assistantship (1969-1972)

PROFESSIONAL EXPERIENCE:

Research Associate:

1973 to date - Assisting on plankton research - Puerto Rico
Nuclear Center
(1) Guayanilla Bay Project
(2) Jobos Bay Project
(3) Site Selection Survey Project

Co-Chief Scientist:

Sept. '72 - Jan. '73 - Directing the field portion of a
study on distribution of inshore zooplankton popu-
lations on the eastern South American coast.

Research Assistant:

1968 - 1972 - Food Chain Research Group - Scripps Institute
of Oceanography - Research on the lower end of the
marine food web. Specifically, assisting in
studies on the make-up and importance of the
micro-zooplankton.

1965 - 1966 - California State University at Long Beach -
Research on the effects of sewage effluent on
marine invertebrates.

Chief Biologist:

1966 Office of Naval Research - Directing biological
sampling during the U.S. Coast Guards' 1966
circum-navigation attempt of the Arctic Ocean.

Gary P. Owen
page 2

1964 University of Southern California - Running the
University of Southern California research program
on T-3 Flecher's Island, Arctic Ocean Station.

RESEARCH AND INTERESTS:

- 1969 - 1972 - Southern California coast.
Studying the energetics and population dynamics
of marine ciliates in coastal embayments.
- 1965 - 1966 - Southern California coast.
Looking for evidence of environmental stress brought
about by domestic sewage contamination in polychaete
worms using biochemical parameters.

CRUISE EXPERIENCE:

- Major: Sept. 72 - Jan. 73, R/V Melville, Cato Legs 6-8,
East and West Coasts South America.
- Nov. 70 - Jan. 71, R/V T. Washington, Aries Legs
1-2, South Pacific Gyre.
- July 67 - Sept. 67, East Wind, Arctic Circum-
navigation Cruise, North Atlantic and Arctic Ocean.
- Minor: 1970 - 72, Coastal Cruises California, Pt. Conception,
California to Southern Baja, California area. Total
duration per year averaged one month.

CURRICULUM VITAE for James D. Parrish

PERSONAL

Present address: Puerto Rico Nuclear Center
College Station
Mayaguez, Puerto Rico 00708

Telephone: Area Code 809 : 832-1414 X 32 office
832:5111

Social Security No.: 251-54-1756

Height: 6'1" Weight: 185 lb. Race: Caucasian Health: Excellent

Born: 18 Dec 35 Birthplace: Bennettsville, South Carolina, U.S.A.

Citizenship: U.S. Family: wife and 2 sons

EDUCATIONAL

Present affiliation: Puerto Rico Nuclear Center
College Station
Mayaguez, P. R. 00708

Status: Scientist I

Graduate Study:

<u>Institution</u>	<u>Curriculum</u>	<u>Dates</u>	<u>Degree</u>
Rensselaer Polytechnic Institute,	Engineering Science	1964-1967	None (part time)
University of Rhode Island, Kingston, Rhode Island	Oceanography	1967-1972	PhD

Part-time work at Rensselaer constituted a transition from an engineering background toward marine science, with courses in mathematics and basic courses in oceanography, wave theory, physical chemistry, physical geology and biology.

Full-time graduate study at Univ. of Rhode Island has consisted of a basic general education in oceanography with specialization in marine animal ecology. There has been a strong personal emphasis on ecology of fishes and on the tropical reef environment, largely implemented through seminars, individual study courses, summer research and personal study. Interest in quantitative, analytical approaches to populations and interspecific relationships has been implemented through available course work and personal study. Some basic computer and statistics techniques were acquired as tools in research.

Graduate Program Committee

<u>Name</u>	<u>Affiliation and Address</u>	<u>Specialty</u>
Dr. S. B. Saila (major professor)	Graduate School of Oceanography University of Rhode Island Kingston, Rhode Island, 02881	Fishery biology
Dr. N. Marshall	" " " "	Productivity, reef ecology
Dr. W. H. Krueger	Zoology Dept., 306 Ranger Hall, University of Rhode Island Kingston, Rhode Island, 02881	Ichthyology

Undergraduate Study:

<u>Institution</u>	<u>Curriculum</u>	<u>Dates</u>	<u>Degree</u>
Furman University, Greenville, South Carolina	Engineering	1952-1954	None (transferred)
University of South Carolina Columbia, South Carolina	Mechanical Engineering	1954-1956	B.S.

Work at these two institutions comprized a conventional 4-year undergraduate program in basic mechanical engineering with emphasis on thermodynamics and power. An overall "grade point average" of 3.9 on a scale of 0 to 4.0 was earned.

Academic Honors and Awards:

- (1) First honor graduate, Univ. of South Carolina, 1956
- (2) Phi Beta Kappa
- (3) Tau Beta Pi
- (4) Society of American Military Engineers award, Univ. of South Carolina, 1956
- (5) Westinghouse Electric Corp. scholarships, Univ. of South Carolina
- (6) National Science Foundation Traineeship, Univ. of Rhode Island, 1967-1970
- (7) National Science Foundation Fellowship, 1970-1972 (declined)
- (8) National Institute of Health Fellowship, 1970-1972
- (9) Sigma Xi

PREVIOUS PROFESSIONAL

Employed actively by General Electric Company from 1956 to 1967 * as an engineer. Field engineering work on turbine-generator equipment and research in fluid mechanics at the company research center. Two semesters of company graduate-level advanced engineering course.

Aircraft maintenance officer with U.S. Air Force 1956 to 1959.*

* Leave of absence for military service.

MAJOR RESEARCH INTERESTS

The general field of research interest is the ecology of marine animals, particularly the ecology of communities. Interaction between species is of major interest, including competitive and particularly predatory interactions. I would like to continue studying all aspects of predation from the behavioral to the quantitative effects upon populations and communities. A number of interesting aspects of various real and theoretical trophic webs should be explored.

The environments of major interest are near-shore marine. I have particular interest in tropical environments, especially coral reefs, and would like to study reef animal communities, primarily from a trophic point of view. The animal group of particular interest is the fishes, both from the standpoint of their general ecology and their community interactions and dynamics.

Research methods should include observational and experimental as well as purely analytical approaches. Most of my ecological training and research has emphasized theory and analysis, however I enjoy field work, consider it important, and would expect to incorporate it strongly into future professional research activities.

Thesis research is in analysis of theoretical interactions between species and the resulting population effects.

PUBLICATIONS

- Marshall, N., J. Parrish and A. L. Gall. 1972. A technique for collecting particulate organic matter in situ. *Marine Biology* 12: 194-195.
- Parrish, J. D. 1972. A study of predation on littoral tropical holothurians at Discovery Bay, Jamaica. (Abstr) In: *Marine Studies on the north coast of Jamaica*. Bakus, G. J. (ed.). *Atoll Res. Bull.* 152:6.
- Parrish, J. D. and S. B. Saila. 1970. Interspecific competition, predation and species diversity. *J. Theor. Biol.* 27: 207-220.
- Saila, S. B. and J. D. Parrish. 1972. Exploitation effects upon interspecific relationships in marine ecosystems. *Fish. Bull.* 70: 383-393.

TRAVEL & LANGUAGE

Lived extensively in:

Japan (U.S. Air Force)
 Okinawa (U.S. Air Force)
 Argentina (engineering work)
 Puerto Rico (scientific research)

Lived briefly in:

Jamaica (summer reef research)
 Venezuela (engineering work)
 Brazil " "
 Quebec " "

Travel and shorter stays in:

Bahamas (reef research)
Greater Netherlands Antilles (reef exploration)
Panama (marine research)
St. Thomas
Chile
Uruguay

Fair spoken use of Spanish language; not fluent.
Read Spanish with difficulty.

AVOCATIONAL

Avocational interests are primarily of an outdoor sporting nature, principally aquatic and trail activities. I have used SCUBA extensively recreationally as well as in shallow water research, and have PADI certification.

Name	Pedersen, Knud Borge
Date of birth	26 November, 1932
Academic rank	Associate Professor
Degrees	B.S. Mech Eng. 1958, Iowa State College M.S. Nu. Eng. 1964, Iowa State University Ph.D. Nuc. Eng. 1967, Iowa State University
Service on Faculty	6 years
Other experience	Vice President, Parents-Teacher Organization, Campus School, Inter American University, San German, Puerto Rico, 1968-69. Chairman, School Board, Campus School, Inter American University, San German, Puerto Rico 1969-70 Member, President's Council of Inter American University, San German, 1970-71 Outboard Marine Corporation. Development of outboard motors. July 1958 - July 1960. Ames Laboratory, AEC, Junior Engineer. Research on mechanical properties of materials. August 1960-64. Puerto Rico Nuclear Center, Division of Nuclear Engineering. Scientist II. July 1967 - present. Instructor of Nuclear Engineering, Iowa State University, August 1964 - June 1967. Assistant Professor of Nuclear Engineering, Iowa State University, June 1967 - July 1967.
Consulting work	None
States in which registered	None

**Membership in scientific
and professional societies**

Phi Eta Sigma
Pi Tau Sigma
Tau Beta Pi
American Nuclear Society
American Society for Engineering Education

Honors and Awards

Listed in American Men and Women of Science
Dictionary of International Biography
International Scholarly Directory

**Subjects or courses taught
this year**

None - On Sabbatical Leave

Other assigned duties

Chairman, Reactor Audit Group, PRNC

**Programs participated in, to
improve competence as teacher**

Visiting Scientist, Oak Ridge National Lab.
of the USAEC. Analysis Group. September 1973.

Publications

Approximately 7 to date.

Leslie Piastra

Research Assistant; Department of Marine Sciences, University of
Puerto Rico, Mayaguez, Puerto Rico, 00708

Date and place of Birth:

January 29, 1948, Burlington, Vermont.

Formal Education:

New York State University College at Oswego, B. S., New York State
Teaching Certificate, 1970, (Secondary Biology).
University of Puerto Rico, M. S. 1973, (Marine Science, Ichthyology).

Masters Thesis:

The Behavioral Ecology of the Lizardfish, Synodus intermedius,
movement and feeding periodicity, feeding habits, substrate
preference, reproductive biology.

Experience and Activities:

Research Assistant, Department of Marine Science, University of Puerto
Rico, June 1971- June 1973.

Cruises on R/V Crawford to the islands of Anegada, St. Croix,
Mona, and Desecheo for fish collection, survey, and photography.
Assist in preliminary baseline study prior to thermal electrical
installations.
Assist in collecting, classifying, and storing fish for Ichthyology
museum, UPR.
Assist in laboratory experiments.

Other positions and experiences:

Basic and advanced NAUI SCUBA certification, 80 open water SCUBA hours.
High School biology teacher (student teaching), Liverpool High School
Liverpool, N. Y. January 1970 - June 1970.
Resident assistant in dormitory, New York State University College
at Oswego, N. Y., September 1968 - December 1969.
Day camp counselor, Central Queens YMCA, Jamaica, L. I., N. Y., June
1968 - August 1968.

Reports

Attraction-Avoidance Reactions of a Fish to a Detergent, 1971, (to
Department of Marine Sciences).
The Ecology and Behavior of Synodus intermedius, 1971, (to Department
of Marine Sciences).

Name	Plaza, Heriberto
Date of birth	13 August 1937
Academic rank	Associate Professor
Degrees	BSEE, Univ. of Puerto Rico, 1961 MSNT, Univ. of Puerto Rico, 1963 Ph.D., Texas A&M Univ., 1966
Service on Faculty	5 years
Other experience	Electrical Engineer, Puerto Rico Water Resources Authority, July 1961- January 1962. Assistant Instructor, Physics Department, Univ. of Puerto Rico, January 1963 - May 1963. Supervisor, Bonus Power Plant, Puerto Rico Water Resources Authority, June 1963 - September 1963. Operator, Gamma Facility, Texas A&M Univ., November 1965 - July 1966. Nuclear Engineer, U.S. Army Engineer Reactor Group, Fort Belvoir, Virginia, March 1966 - December 1968.
Consulting work	None
States in which registered	None
Principal publications of last five years	"Absolute Flux Measurements Using the Activity Ratio Technique" Conference on Research and Training Reactor Utilization, ANS Transactions, supplement number 1 to volume 15., 1972. "Applied Nuclear Power Engineering for Practicing Engineers", Barnes & Noble PECDS Series, 1972. "Experimental Verification of the Asymmetric Source Method in Reactivity Measurements" (with Rafael Alcalá) PRNC Report (to be published) 1970. "Experimental Investigation of Neutron Detector Interaction" (with Juan Caro), PRNC Report (to be published) 1971.

	"Experimental Verification of a Theoretical Model for Evaluating Thermal Neutron Diffusion Lengths in Hydrogeneous Materials Using (n, σ) Reactions" (with Juan Alcaraz) PRNC Report (to be published) 1972.
	"Activity Ratio Technique for Measuring Thermal Neutron Flux Using Activation Detectors" (with Rafael Sardina) PRNC Report (to be published) 1971.
Membership in scientific and professional societies	Tau Beta Pi, Phi Kappa Phi
Honors and awards	None
Subjects or courses taught this year	Nu Eg 603, Nu Eg 626
Other assigned duties	Research Committee of the Faculty of Engineering
Programs participated in, to improve competence as teacher	None

CURRICULUM VITAE

Name: Ritchie, Lawrence S.
Title: Director, Puerto Rico Nuclear Center
Place of Birth: Glenvil, Nebraska, U.S.A.
 December 9, 1906.

Education:

Sioux Falls College, Grand Island, Nebraska.	A.B.	1928	Biology
Northwestern University, Evanston, Illinois.	M.S.	1930	Parasitology
Northwestern University, Evanston, Illinois.	Ph.D.	1936	Parasitology

Honors:Achievements and Commendation:

- July 1955 - Certificate of achievement for meritorious service by the 406th Medical General Laboratory.
- July 1966 - Letter of Commendation of the 406th Medical General Laboratory.
 Letter of Appreciation from the Governor of Yamanshi Prefecture, Japan for effort in study and control of schistosomiasis.
- 1954 - Member of symposium on schistosomiasis for meeting of the American Society of Tropical Medicine and Hygiene.
- 1961 - Recipient of the Isaac González-Martínez Award, Puerto Rican Committee for Bilharzia Control.
- Sept. 1964 - Invited to present a paper at the first International Congress of Parasitologists, Rome.
- 1968 - Member of Cornell Medical College Schistosomiasis Team to the Philippines.
 - Recipient of "Medal of Merit", presidential award, Philippine Islands.

Major Research or Professional Interest:

Parasitology, Mallacology.

Military Assignments:

- 1945 - 27th Medical Laboratory - Leyte, Philippines (4 months)
- 1945-46 - 27th Medical Laboratory - Hokkaid, Japan (5 months)
- 1946 - 28th Medical Laboratory - Yokohama, Japan (8 months)
- 1946 - 406th Medical General Laboratory - Tokyo, Japan (4 months)

Civilian Assignments:

- 1947-56 - 406th Medical General Laboratory - Tokyo, Japan.
- 1956-66 - USA Tropical Research Medical Laboratory - Puerto Rico.
- 1966-68 - Walter Reed Army Institute of Research - Washington, D.C.

Civilian Assignments (Cont'd):

- 1968-71 - Senior Scientist I, Puerto Rico Nuclear Center.
 1971-72 - Acting Head, Medical Sciences and Radiobiology Division, PRNC
 1972-73 - Head, Division of Medical Sciences and Radiobiology, PRNC
 1/17/73 to 9/17/73 - Acting Director, Puerto Rico Nuclear Center.

Academic Appointments:

- 1932-36 - Part-time Instructor - Northwestern University.
 Assistant Professor, Biology - Woman's College.
 1936-44 - University of North Carolina.
 1955-56 - Special Lecturer in Parasitology - University of Puerto Rico
 Medical School.
 1972- - Professor (ad honorem), Department of Biology, University
 of Puerto Rico.

Consultant to:

Department of Public Health, St. Lucia, British West Indies, 1960.
 World Health Organization, 1961,62; 1964; 1967.

Professional Societies:

American Society of Parasitology - 1937.
 American Society of Tropical Medicine and Hygiene - 1947.
 Royal Society of Tropical Medicine and Hygiene - 1960.
 Puerto Rican Committee for Bilharzia Control.
 Caribbean Committee for Control Bilharzia.

Publications:

Approximately 100.

Editorial Appointments:

Assists Editor of the Journal of Parasitology by reviewing manuscripts
 in his fields of specialty.
 Chairman of committee, delegated to prepare Chapter 10
 "Chemical Control of Snails", of a WHO Manual entitled
 "Epidemiology and Control of Bilharziasis".

CURRICULUM VITAE

Prepared:
April 15, 1973

NAME: Frederick Edward Rushford

DATE OF BIRTH: April 13, 1929

PLACE OF BIRTH: Springfield, Massachusetts, USA

CIVIL STATUS: Married to Maria Teresa Padilla

Two children: Catherine Teresa Rushford (21)
Frederick Eugene Rushford (19)

PRESENT ADDRESS: 162 Villamil Street
Santurce, Puerto Rico 00907
Telephone: 723-6826

EDUCATION:

Secondary: Bulkeley High School, Hartford, Connecticut
Graduated in 1946

Undergraduate: B. S. degree - General Science - 1950
Trinity College, Hartford, Connecticut

Graduate: 102 credits in Education, Educational Administration, and Biology
University of Puerto Rico, Río Piedras, Puerto Rico- 1954 to present

SPECIAL TRAINING: NSF Summer Institutes for Secondary Teachers, 1958-1961
University of Puerto Rico, Río Piedras

Traveling Science Teacher Training, Summer 1959
Oak Ridge Institute of Nuclear Studies
Oak Ridge, Tennessee

Basic Radioisotope Techniques Course, 1963
Puerto Rico Nuclear Center

PROFESSIONAL DIPLOMAS: License, Secondary School Science Teacher,
Government of Puerto Rico

License, Secondary School Principal,
Government of Puerto Rico

PROFESSIONAL SOCIETIES: Member - American Nuclear Society

Member - Puerto Rico Teachers Association

Member - Councilman, Puerto Rico Chapter of the
Health Physics Society

MILITARY SERVICE: U. S. Army, May 25, 1951 to May 24, 1953; active duty
Medical Laboratory Technician
Rank: Private E-2

EXPERIENCE:

- 1950-51 - Civilian Clerk, U. S. Army Corps of Engineers
- 1951-53 - Active Military Service - Medical Laboratory Technician,
Rodríguez Army Hospital
- 1953-59 - Secondary School Teacher of mathematics, biology, chemistry,
and physics - Antilles Consolidated Schools, U. S. Naval
Station, San Juan, Puerto Rico
- 1959-60 - Traveling Science Teacher - Oak Ridge Institute of Nuclear
Studies
- 1960 - Assistant Scientist, Oak Ridge Institute of Nuclear Studies,
assigned to U. S. Atomic Energy Commission Exhibits in
Buenos Aires, Argentina.
- 1960-62 - Mathematics and Science Teacher, Antilles High School,
U. S. Naval Station, San Juan, Puerto Rico
- June 1962 to July 1970 - Technical Assistant to the Director,
Puerto Rico Nuclear Center (PRNC), Caparra Heights Station,
San Juan, Puerto Rico
- January 1970 to present - Head, Information and Education Services Division,
Puerto Rico Nuclear Center
- August 1970 to present - Educational Officer, Puerto Rico Nuclear Center
- June 1972 to present - Coordinator for Nuclear Programs, University of
Puerto Rico, Office of the President - Joint Appointment
33% UPR and 67% PRNC.

PUBLICATIONS:

1. Evaluation Study of Summer Institute in Radiation
Biology (PRNC 66)
2. Atomos..Puerto Rico También, Vitae 1 noviembre 1965
3. The Puerto Rico Nuclear Center: Its Principal Irradiation
Facilities and Scientific Program, Isotopes and Radiation
Technology published by Isotopes Information Center,
Oak Ridge National Laboratory, Vol. 4, No. 3, Spring 1967.

Name	Sasscer, Donald S.
Date of birth	30 January 1929
Academic rank	Professor, full time
Degrees	BSME, Univ. of Utah, 1953 MSNE, Iowa State Univ., 1959 Ph.D. Iowa State Univ., 1964
Service on Faculty	9 years
Other experience	Douglas Aircraft Corp. - Power Plant Analyzation Section, June-December, 1963. McDonnell Aircraft Corp. - Engine Components Design Summer, 1956. Instructor of Theoretical and Applied Méchanics, Iowa State University, 1956-1959. Assistant Professor of Nuclear Engineering, Iowa State University, 1961 -1964. Research Scientist, Division of Nuclear Engineering, Ames Laboratory of the USAEC, Ames, Iowa, 1961 - 1964. Lecturer, AEC-ASEE Summer Institute in Nuclear Engineering, Iowa State University, Summer 1962. Lecturer, AEC-ASEE Summer Institute in Nuclear Metallurgy, Iowa State University, Summer 1963. Co-Director and Lecturer, OCD-ASEE Summer Institute in Fallout Shelters, Summer 1967. Director and Lecturer, PRWRA (Puerto Rico Water Resources Authority) Special Reactor Operator Training Program, Summer 1970. Director PRWRA Special Reactor Supervisor Training Program, Summer 1972. Director and Lecturer AEC Summer Institute on Electrical Power Generation in Puerto Rico, Summer 1973. Chief Scientist I, Division of Nuclear Engineering of the Puerto Rico Nuclear Center, 1965 - Present.
Consulting work	Commonwealth Oil Refining Company, (CORCO) part- time 1968-69.

States in which registered	None
Membership in scientific and professional societies	<p>American Nuclear Society (ANS) Health Physics Society (HPS) American Society for Engineering Education (ASEE)</p>
Honors and Awards	<p>National Honor Society of Phi Kappa Phi U.S. Atomic Energy Commission Special Fellow 1959-1961 Listed in "American Men and Women of Science" Guest Lecturer, USAEC Atoms in Action Program. Univ. of Guatemala, Guatemala City, Dec. 1965. Guest Lecturer, USAEC Atoms in Action Program. Univ. of Panama, Panama City, Feb. 1967.</p>
Subjects or courses taught this year	<p>Elements of Nuclear Engineering Introduction to Nuclear Engineering Research</p>
Other assigned duties	<p>Chairman Dept. of Nuc. Eng. UPR-RUM (extra compensation) Head Division of Nuc. Eng. Puerto Rico Nuclear Center USAEC-UPR</p>
Programs participated in, to improve competence as teacher	<p>Visiting Scientist, Div. of Theoretical Reactor Phy. Brookhaven Nat. Lab. (USAEC) Summer 1969. Visiting Scientist, Center for Educational Affairs and Radiological Physics Div. Argonne Nat. Lab. (USAEC) July 1970 - July 1971.</p>
Publications	Approximately 13 to date.

CURRICULUM VITAE

Name: George A. Simpson

Date and Place of Birth: July 16, 1938; Washington, D.C.

Education:

A.B., The Catholic University of America,
Washington, D.C.

Ph.D., Chemistry
University of Notre Dame,
South Bend, Indiana

Professional Experience:

- Sept. 1965-Oct. 1969 - Associate Scientist I, Puerto Rico Nuclear Center.
Research in gamma radiolysis and photolysis of heterocyclics at low temperatures
- 1966-1969 Assistant Professor, Department of Physics,
University of Puerto Rico. Graduate research
program advisor.
- 1968-1969 Lecturer, Department of Chemistry, U.P.R.
Course given in "Chemical Kinetics", and
Radiation Chemistry and Photochemistry".
- Oct. 1969-April 1970 Staff Scientist, Aerochem. Research Laboratory,
Princeton, New Jersey. Research on reactions
of neutral and ionic species in high temperature
flames.
- Sept. 1970-April 1971 Research Scientist, Energy Conversion Devices, Inc.
Troy, Michigan. Research on photographic aspects
of amorphous semiconductors.
- July 1972 to date Puerto Rico Nuclear Center and University of Puerto
Rico, Chemistry Department, Río Piedras Puerto Rico.
Research in gamma radiolysis and photolysis of
heterocyclic compounds, and in chemiluminescence
of cyclic peroxides, and possible intermediates in
bioluminescent systems.

Publications:

Approximately 5 publications to date.

C U R R I C U L U M V I T A EPersonal

Name : Porfirio A. Toledo Charneco
 Date of Birth : November 20, 1946
 Place of Birth : Arecibo, Puerto Rico
 Marital Status : Married, no children

Education

<u>Institution</u>	<u>Degree</u>	<u>Subject</u>	<u>Month/year</u>
University of P.R. RUM	B.S.	Mathematic & Psyc.	May 70
University of P.R.- Medical Science Campus- R.P.	M.S.	Radiological Health	July 72

Professional Experience

<u>Position</u>	<u>Institution</u>	<u>Dates</u>
Research Ass. III	Puerto Rico Nuclear Center Mayaguez- Radioecology Div.	Sept.70-July 71
Associate Scientist II	Puerto Rico Nuclear Center Health and Safety Division Río Piedras, P.R.	Sept. 72-July 1973
Associate Scientist III	Puerto Rico Nuclear Center (50%) Health and Safety Division Río Piedras, P.R.	Aug. 1973 to Present
Instructor	University of P.R. Medical Science Campus, R.P. (50%)	Aug. 1973 to present

Additional Data

Health Physics Society Member

Curriculum vitae

Name: Vance P. Vicente

Bachelor of Science: University of Puerto Rico, Río Piedras
Campus. Concentration in Biology, 1970.

Master of Science: University of Puerto Rico, Mayaguez Campus,
Degree in Marine Sciences, Specialty in Marine
Microbiology, 1973.

Certificates and Memberships

- 1) National Association of Underwater Instructors Certificate.
- 2) Member of the International Oceanographic Foundation.

Previous Experience

- 1) Taxonomy of the benthic samples of St. Thomas for the Earth Resource Technology Satellite Program under PRINUL.
- 2) Qualitative and Quantitative determination of the plankton in St. Thomas for E.R.T.S. under PRINUL.
- 3) Design of a microbiological study within the undersea laboratory "La Chalupa", PRINUL.
- 4) Assistant Science Program Coordinator for the Puerto Rico International Undersea.

Publications in Progress

- 1974 Vicente Vance P. and Dr. Luis R. Almodóvar. Some aspects of the feeding habits of Chaetodon capistratus and the zooxanthellas.

Vicente Vance P. The shallow water sponges (Demospongiae) of the North Coast of Puerto Rico.

CURRICULUM VITAE

David W. Walker
 Senior Scientist, Tropical Agro-Sciences Division, PRNC
 Associate Professor, Biology Department, University of Puerto Rico

Education

University of Washington, B.S., 1950
 Washington State University, M.S., 1951
 Washington State University, Ph.D., 1959

Academic Experience

Teaching: Introductory Biology, Introductory Zoology, Systematic Entomology, Genetics, Biological Control, Vertebrate Physiology, General Ecology, Invertebrate Zoology, Insect Control, Immature Insects (taxonomy), Insect Biology.

Research: Bionomics, ecology and control of insects in stored grains; taxonomy of immature insects; gamma-induced sterility of Lepidoptera and other holocentric organisms; transmission capability, population change and distribution of malaria vectors; growth inhibition of skin micro-organisms by pigments.

Research Grants: AEC 1963 to present for work on insect sterility; Chemagro Corporation 1962-63 for work with vegetable insect control by insecticides; American Cyanamide Corporation 1955-58 for work with insecticides; Union Carbide Corporation 1954-58 for insecticide studies; USDA 1955-59 for work with grain insects; USDA 1966 to present for work on insect sterility.

Administrative Experience

Director, Induced Sterility in Insects Program, Puerto Rico Nuclear Center 1963 to present; Project Leader, Stored Products Insects Investigations, Washington State University 1953-59; Director, Malaria Control Program for the Philippines by the Mutual Security Administration (AID) 1950-51; Chief of Environmental Sanitation Program for United Nations Relief for Palestinian Refugees Program Gaza, Egypt 1949-50.

Non-Academic Positions Held

1947-49, Laboratory Technician, Department of Public Health and Preventive Medicine, University of Washington School of Medicine; 1949-50, Chief Sanitarian and Malaria Control Officer, United Nations Relief for Palestinian Refugees Commission, Gaza, Egypt, UAR; 1951-53, Entomologist, U.S. Public Health Service, Malaria Control Program, Government of the Philippines; 1953-59, Junior Entomologist and Assistant Entomologist, Agricultural Experiment Station, Washington State

Curriculum Vitae (David Walker)

University; 1963 to present, Associate Scientist, Chief Scientist, and Scientist II, and ad honorem professor in Biology, Puerto Rico Nuclear Center, UPR; 1968-69, Radiation Entomologist, International Atomic Energy Agency, assigned to the Atomic Energy Commission of Thailand as Director of work on insect sterility.

Overseas Experience and Travel

AEC Atoms for Peace Program, lectures on peaceful applications of atomic energy presented in spanish in Guatemala, El Salvador, Nicaragua, Costa Rica, Venezuela and Ecuador. Lectures given at National Universities and Research Centers, 1965-67.

Foreign travel has included the middle east, 1949-50; Far east, middle east and europe, 1968-69; Central and South America, 1965-66.

Publications

Approximately 35 to date.

PERSONAL BIOGRAPHY

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ELWYN D. WOOD

Oceanographer
Scientist II
Puerto Rico Nuclear Center

Birth: September 15, 1934

B.A. Chemistry, Western Washington State College, 1964
B.A. Education, Western Washington State College, 1964
M.S. Oceanography, University of Washington, 1966
Ph.D. Oceanography, University of Alaska, 1971

Oceanographer, 1966-67, University of Washington
NORCUS Fellow, 1969-70, Battelle-Northwest
Scientist I, 1970-73, Puerto Rico Nuclear Center
Scientist II, 1973-present, Puerto Rico Nuclear Center

Member:

Professional

American Chemical Society
American Geophysical Union
American Society of Limnology and Oceanography
International Oceanographic Foundation
The Geochemical Society

Nonprofessional

Aircraft Owners and Pilots Association
National Geographic Society
National Rifle Association

Experience:

Professional

University of Washington, Research and Teaching Assistantships, 1964-66
University of Washington, Oceanographer, in charge of Marine Routine
Chemistry Laboratory, 1966-67
University of Alaska, Research Assistantships, 1967-69
Battelle-Northwest, Pacific Northwest Laboratories, NORCUS Research
Fellow, 1969-70
Puerto Rico Nuclear Center, Oceanographer, 1970-73
Puerto Rico Nuclear Center, Head, Site Selection Survey, 1973-present

Nonprofessional

Alaskan Fishing Industry, one season, engineer; twelve seasons,
captain of fishing vessels and tenders

Publications:

Approximately 12 to date.

Curriculum Vitae

Name: Marsh J. Youngbluth
 Date and place of birth: 15 September 1940, Portland, Oregon
 Education: B.S. Biology, 1963, Portland State University
 M.S. Zoology, 1966, University of Hawaii
 Ph.D. Biology, 1972, Stanford University

Academic Awards:

National Science Foundation Research Assistantship (1971-1972)
 National Science Foundation Dissertation Grant (1971)
 Society of the Sigma Xi Research Grant (1971)
 California State Tuition Scholarship (1969-1970)
 National Science Foundation Predoctoral Traineeship (1967-1971)

Professional Experience:Research Scientist:

1972-date Head, plankton research program at Puerto Rico Nuclear Center. ____
 1) Studying coastal zooplankton communities in polluted and unpolluted regions to assess major components and to determine seasonal fluctuations in their abundance and diversity.
 2) Examining in detail the magnitude of variability associated with diurnal vertical migration and aggregated distribution patterns.

Chief Scientist:

1969-1972 Responsible for directing and conducting research programs on RV Proteus for periods ranging from one day to two weeks.

Instructor:

1970, 1971 (June-July), Hopkins Marine Station of Stanford University
 Subject: Biological Oceanography (co-instructor)
 1968 (February, July-August), Universidad de Costa Rica (under auspices of the Organization for Tropical Studies)
 Subject: Marine Ecology (co-instructor)

Teaching Assistant:

1967-1968 Stanford University
 Subjects: Biological Oceanography, Marine Biology
 1965-1967 University of Hawaii
 Subjects: General Zoology, Invertebrate Zoology, Marine Ecology, Animal Behavior

Laboratory Manager:

1966 (June-September), Eniwetok Marine Biological Laboratory (under auspices of the Atomic Energy Commission and University of Hawaii)

Research Assistant:

- 1966 (June-September), Eniwetok Marine Biological Laboratory
Assisted with several research projects, e.g., isolated unusual biochemical polymers from zooxanthellae, collected organisms for taxonomic and zoogeographic studies, gathered ecological and ethological data on coconut crab populations, tested aggressive behavior of lagoon sharks toward plastic bag models, surveyed effect of atomic radiation on indigenous rats.
- 1966 (January, April), Johnston Island (under auspices of Hawaii Institute of Marine Biology)
Participated in a fish toxin (ciguatera) research program; duties included mapping subtidal coral reef study areas, underwater photography of these habitats, and collection of top carnivores for biochemical assays.

Research Experience and Interests:

- 1969-1972 Gulf of California, Central and Northern California Current, Tropical Eastern South Pacific Gyre. Studied the vertical distribution, diel migration, and community structure of euphausiids.
- 1968, 1970 Eastern Tropical Pacific, Eniwetok Marine Biological Laboratory. Studied crustacean assemblages symbiotic with coral-head microhabitats to explore mechanisms responsible for the maintenance of species diversity.
- 1967 Gulf of California. Attempted to determine with a time-dependent sampling program if the phaeopigment/chlorophyll ratio could be employed to evaluate grazing pressure at mesopelagic depths.
- 1967, 1969, 1970 Eniwetok Marine Biological Laboratory. Studied ecological and ethological aspects of cleaning symbiosis--a relationship in which a small reef fish removes ectoparasites from other tropical reef fish.

Cruise Experience:

- Major: November-December, 1970, RV T. WASHINGTON, Tropical Eastern South Pacific Gyre
July-August, 1970, RV PROTEUS, Central and Northern California Current
April-June, 1968, RV TE VEGA, Peru to Baja California
June-September, 1967, RV TE VEGA, Gulf of California
- Minor: 1969-1972, 1-8 days, RV PROTEUS, Central California Current
1969, two weeks, RV PROTEUS, Gulf of California
1964-1966, 1-8 days, RV TERITU, RV SALPA, Hawaiian waters

Marsh J. Youngbluth

Membership in Professional Societies:

American Institution of Biological Sciences
 American Society of Naturalists
 American Society of Limnology and Oceanography
 The Association for Tropical Biology
 The Society of the Sigma Xi

Publications:

- Youngbluth, Marsh J. 1968. Aspects of the ecology and ethology of the cleaning fish Labroides phthirophagus Randall. Z. Tierpsychol., 25: 915-932.
- Youngbluth, M. 1967. Some marine fauna at Playa del Coco, Costa Rica. Organization for Tropical Studies. Mimeographed, San Jose, Costa Rica. 10 p.
- Youngbluth, M. 1966. Some aspects of the ecology of the cleaning fish, Labroides phthirophagus Randall. Amer. Zool., 6 (4): 532-533.

Prospective Publications:

1. Vertical distribution, diel migration, and community structure of euphausiids in marine environments.
 - I. Tropical, oceanic waters (East Tropical South Pacific)
 - II. Temperate, offshore waters (Central California Current)
 - III. Temperate, nearshore waters (Monterey Bay, California)
 - IV. Recurrent groups of euphausiids in stable and transitional water masses
2. Diurnal changes in the faunal components of sonic scattering layers in Monterey Bay, California.
3. Energy transfer by populations of vertically migrating euphausiids.
4. Seasonal variation in the zooplankton communities of Monterey Bay, California.
5. Accuracy and precision of methods used to subsample zooplankton.

