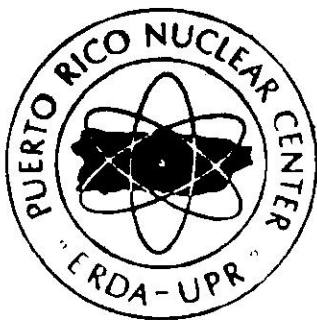


PUERTO RICO NUCLEAR CENTER

**GENERAL  
INFORMATION**



MARCH 1, 1976

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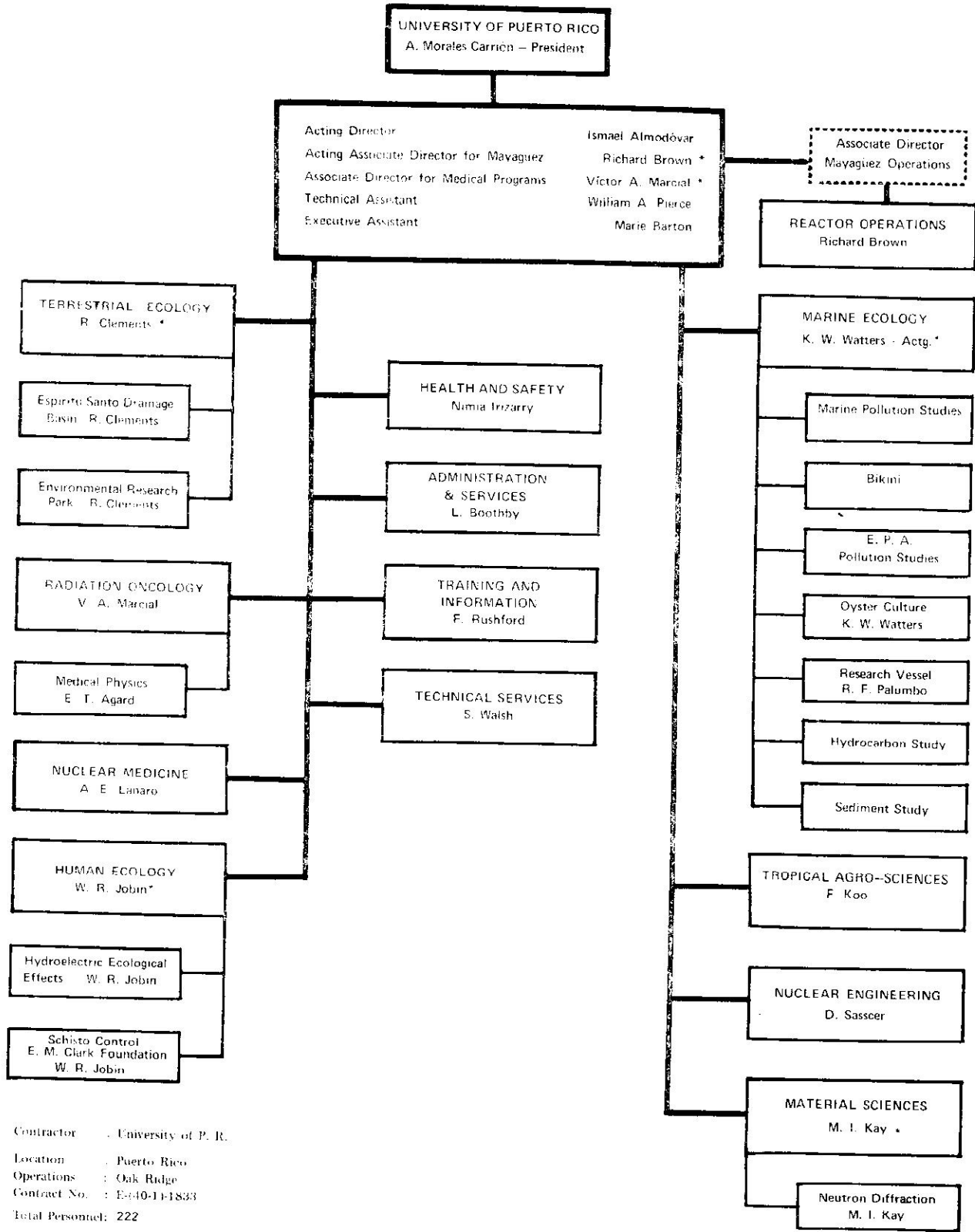
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ORGANIZATION CHART

**A**

# PUERTO RICO NUCLEAR CENTER

ORGANIZATION CHART - MARCH 1, 1976



Contractor : University of P. R.  
 Location : Puerto Rico  
 Operations : Oak Ridge  
 Contract No. : E-40-1-1833  
 Total Personnel: 222

\* MULTIPLE FUNCTION

PERSONNEL

**B**

**PUERTO RICO NUCLEAR CENTER**  
**PERSONNEL PROFILE IN MAN-YEARS**  
 March 1, 1976

Research Programs	Scientific Staff	Direct Support	Ratio	Average Ratio	Indirect Support
1. Materials Science Division	0.60	2.00	1:3.33		
2. Radiation Oncology	1.12	5.50	1:4.91		
3. Nuclear Medicine	1.80	6.28	1:3.49		
4. Tropical Agro-Sciences	2.34	7.00	1:2.99		
5. Human Ecology	6.00	10.00	1:1.66	1:2.21	
6. Nuclear Engineering	0.83	1.00	1:1.20		
7. Medical Physics	1.75	3.05	1:1.74		
8. Terrestrial Ecology	5.00	10.00	1:2.00		
9. Marine Ecology	12.00	28.00	1:2.33*		
10. Neutron Diffraction	1.53	4.50	1:2.94**		
11. Physical Sciences ***	2.00	—			
Totals	35.00	77.30			
<u>Support Activities</u>					
1. Director's Office					7.70
2. Administration and Services					23.15
3. Health and Safety					6.00
4. Technical Services					20.00
5. Training and Information					5.00
6. Electronic Services					3.00
7. Title X Account					30.92
Total					95.77

- \* Includes "Palumbo" crew  
 \*\* Includes Reactor Division  
 \*\*\* Title X Account



PUERTO RICO NUCLEAR CENTER

LAND AND BUILDINGS

March 1, 1976

I. Land

- 20 acres, Mayagüez, Federal Agricultural Experiment Station
- 20 acres, Mayagüez, Cornelia Hill
- 1 acre, Rio Piedras, Puerto Rico Medical Center
- 200 acres, Luquillo National Forest, Use Permit from the U.S. Forestry Service

Total 241 acres

II. Buildings

A- Mayagüez, Federal Agricultural Experiment Station

Building	Laboratory Space (sq.ft.)	Administrative Space (sq.ft.)	Other (sq.ft.)
1. Main	30,000		
2. Shop		10,000	
3. Administration		1,000	5,000
4. Nuclear Engineering	720	5,800	
5. Agricultural Shed	1,848	885	
6. Greenhouse	1,872		
7. Marine Biology Lab.	1,300		
8. Annex	2,400		
9. Neutron Generator	2,500		
10. Helium Liquefier	600		

B- Rio Piedras, Puerto Rico Medical Center

1. Bio-Medical	30,000	10,000	
2. Animal Shop	3,000		2,500

C- Cornelia Hill, Mayagüez

1. Laboratory	2,500	1,000	
2. Aquarium	1,920		

D- El Verde, Luquillo National Forest

1. Laboratory	5,000		
---------------	-------	--	--

Totals	83,660	28,685	7,500
Grand Total: 15 Buildings-119,845 square feet			

III. New Construction

A- El Verde

1. Data Acquisition Lab.	1,184		168
--------------------------	-------	--	-----

B- Cornelia Hill

1. Laboratory	1,884	600	575
Totals	3,068	600	743

Grand Total: 2 Buildings-4,411 square feet



FACILITY INVESTMENT  
 PUERTO RICO NUCLEAR CENTER  
 FY 1958 thru FY 1975

FUNDING

Facility	Initial Occupancy	Cost
<u>Mayagüez Site</u>		
Nuclear Center Laboratory and Reactor	Sep. 1960	\$2,960,811
Center Modifications and Minor Additions	--	785,907
Conversion of PRNC Reactor	Apr. 1972 <sup>a</sup>	355,000
Nuclear Engineering and Training Reactor Annex	Jun. 1961	116,305
Marine Biology Laboratory	Jun. 1966	36,619
Administration Building	Jan. 1967	95,668
Shop Building and Additions	Mar. 1967	141,538
Agricultural Biosciences Laboratory and Additions	May 1968	95,568
Shielded Facility for Neutron Generator	Sep. 1971	49,295
Total Investment Mayagüez		\$4,636,711
<u>Rio Piedras Site</u>		
Biomedical Building	Feb. 1961	\$ 589,278
Biomedical Building Addition	Sep. 1970	1,398,683
Radiotherapy Linear Accelerator	Aug. 1973	360,470
Modifications and Minor Additions	--	212,665
Animal Quarters and Virus Laboratory	Aug. 1965	203,224
Animal Experimental Facilities	Mar. 1975 <sup>a</sup>	132,000
Maintenance Shop Facility	Sep. 1974	98,934
Total Investment-Rio Piedras		\$2,995,254
<u>Cornelia Hill Site</u>		
Marine Biology Lab. and Site Acquisition	Aug. 1966	\$ 130,000
Modifications and Additions	--	280,974
Aquarium Laboratory	-- a	101,200
Waterfront Facilities for Research Vessel	Jan. 1974	355,363
Total Investment-Cornelia Hill		\$ 867,537
<u>Luquillo National Forest Site</u>		
Data Acquisition Laboratory	-- a	\$ 123,510
Total Investment - PRNC		\$8,623,012

<sup>a</sup>Construction not Complete

BUDGET

**D**

PROGRAM COST SUMMARY  
 PUERTO RICO NUCLEAR CENTER  
 FY 1958 - FY 1976

Fiscal Year	Training & Education Program	Physical Research	BER Programmatic Research	Other Programmatic Research	Latin American Exhibit	Work for Others		Total Program Costs
						Federal Agencies	PRWRA & Misc.	
1958	\$ 119,000	\$	\$	\$	\$	\$	\$	\$ 119,100
1959	376,700							376,700
1960	450,300							450,300
1961	750,509							750,509
1962	1,210,646		58,324					1,268,970
1963	1,181,042	38,845	217,847					1,437,734
1964	1,105,997	146,662	524,998					1,777,657
1965	1,121,262	170,317	620,738					1,946,014
1966	1,100,058	212,984	660,049	17,711 <sup>b</sup>	33,727			2,048,190
1967	1,126,764	252,002	557,006	41,996 <sup>b</sup>	54,023	3,365		2,033,869
1968	1,225,215	272,346	549,198	34,509 <sup>b</sup>	56,101	0		2,161,007
1969	1,277,309	270,381	597,466	12,245 <sup>b</sup>	68,349	11,390		2,227,541
1970	1,342,719	274,028	671,394		45,702	24,438		2,334,049
1971	1,440,302 <sup>a</sup>	195,001	671,003	42,000 <sup>c</sup>	33,013	12,895		2,509,926
1972	1,301,535	92,808	673,110	52,000 <sup>c</sup>		5,000	156,620	2,508,632
1973	1,284,988	33,764	899,633	52,000 <sup>c</sup>		73,712	315,467	3,033,218
1974	1,200,582	35,057	761,438	10,000 <sup>c</sup>		0	762,833	3,397,646
1975	1,232,070	34,999	975,001			0	1,390,569	3,762,625
1976*	1,230,000		1,062,000			51,560	1,468,995	2,686,000
						220,000	174,000	

<sup>a</sup> Includes \$164,600 for new reactor fuel and \$1,275,702 for Training and Education activities.

<sup>b</sup> AEC Isotopes Development Program - Irradiation of Tropical Foods

<sup>c</sup> AEC-RRD contribution to support of PRWRA Power Reactor Studies.

\* Estimate

**FINANCIAL AND EMPLOYMENT SUMMARY**  
**PUERTO RICO NUCLEAR CENTER**  
**FY 1958 TO FY 1976**

Fiscal Year	Operating Program Costs	Capital Equipment Costs	Construction Project Funding	Average Employment	
				Regular	Part Time
1958	\$ 119,100	\$ 40,600	\$2,960,811	26	
1959	376,700	19,100	589,278	46	
1960	450,300	222,600	84,732	89	
1961	750,509	164,551	45,759	161	16
1962	1,268,970	169,501	9,576	162	16
1963	1,437,734	282,228	218,210	180	26
1964	1,777,657	303,989	30,294	233	35
1965	1,946,044	177,772	126,340	235	43
1966	2,048,190	161,167	188,489	240	66
1967	2,033,869	196,423	199,602	245	63
1968	2,161,008	163,741	1,848,683 <sup>c</sup>	241	57
1969	2,227,541	184,721	213,880	213	49
1970	2,334,049	178,628	119,982	214	44
1971	2,509,926	592,597 <sup>a</sup>	398,474	197	57
1972	2,508,632	244,630	448,902	192	63
1973	3,033,218	166,876	425,000	204	76
1974	3,397,646	141,631	425,000	220	79
1975	3,762,625	178,898	290,000	224	74
1976	2,686,000	120,000	95,000 <sup>b</sup>	178*	42**

<sup>a</sup> Includes procurement of Palumbo at cost of \$350,000

<sup>b</sup> ORO estimate

<sup>c</sup> Includes \$1,398,683 for Biomedical Building Addition and \$450,000 for GPP.

\* Includes 29 on Title X Job Opportunity Funds.

\*\* Includes 8 on Title X Job Opportunity Funds.

**PUERTO RICO NUCLEAR CENTER**  
**MEDICAL PROGRAM COST ANALYSIS**  
 as of March 1, 1976

	Radiation Oncology		Nuclear Medicine		Medical Physics		Totals	
Salaries and Fringe Benefits	79,800		91,500		55,000		226,300	
Annual Leave			3,000		2,000		5,000	
Overhead	59,900		68,700		36,000		164,600	
Travel	1,000		1,000		1,500		3,500	
Electricity (2.09 sq.ft.)	11,647		9,405		3,737		24,789	
Space Allocation 5,573 sq.ft.	22,300	4,500sq.ft.	22,500	1,788sq.ft.	8,940	11,861sq.ft.	53,740	
Materials and Supplies	4,000		12,000		2,000		18,000	
Transportation & Communication	800		300		300		1,400	
Shop Charges	800		500		200		1,500	
Electronic Charges					300		300	
Reproduction Charges	900		600		200		1,700	
Tuition Charges			1,000		1,700		2,700	
Computer Charges					500		500	
Equipment Maintenance	800		100		500		1,400	
Equipment Depreciation	25,443		14,289		2,461		42,193	
Miscellaneous	1,900		800		100		2,800	
<b>Totals</b>	<b>209,290</b>		<b>225,694</b>		<b>115,438</b>		<b>550,422</b>	
Training (%)*	15%	31,394	15%	33,854	20%	23,088	16%	88,336
Research (%)*	15%	31,394	13%	29,340	40%	46,175	19%	106,909
Medical Serv. (%)*	70%	146,502	72%	162,500	40%	46,175	65%	355,177
	100%	\$209,290	100%	\$225,694	100%	\$115,438	100%	\$550,422

\* As explained on attached sheet.

\* **Radiation Oncology Division** -- The Division Head estimated that 30% of the funds available from ERDA are used directly for training, 30% for research, and 40% for Medical services. However, both training and research are accomplished by offering medical service. Therefore 1/2 of the training effort (15%) and 1/2 of the research effort (15%) represent medical service required and must be added on to the 40% medical service offered but not utilized for these efforts. Consequently the current estimate of the Radiation Oncology Division effort includes 15% training, 15% research, and 70% medical service.

\* **Nuclear Medicine Division** -- The Division Head prepared a detailed analysis of costs involved in offering training, research, and medical service. His analysis yielded 30% for training, 26% for research, and 44% for medical services. However, he estimated that 1/2 the training effort (15%) and 1/2 the research effort (13%) entailed the medical service required and therefore should be added to the medical service component (44%) that is not utilized for these purposes. The final estimate is 15% for training, 13% for research, and 72% for medical service.

\* **Medical Physics Section** -- The Section Head analyzed the FY-1976 effort and determined that 20% goes for training, 40% for research, and 40% for medical service. In this case the medical service is provided to the Radiation Oncology and Nuclear Medicine Divisions as treatment planning, dosimetry, instrument calibration. Medical service is not required for all training or for all research, and therefore it was estimated that the research component has increased to 40% because the training component was decreased this year through the suspension of the M.S. Degree Program in Radiological Health. Training is now primarily for Radiation Oncology and Nuclear Medicine Residents.

**PUERTO RICO NUCLEAR CENTER**  
**FY-1975 BASE PROGRAM BUDGET**

Estimated Distribution Based on Study Made By Director and Observations of Educational Officer\*

Division Title (Form 189)	Budget (100%)	Training Portion (%)	Research Oriented (%)	Health Care (%)	Supporting Services (%)
1. Applied Physical Sciences	\$ 114,000	\$ 39,900 (35%)	\$ 74,100 (65%)		
2. Clinical Applications of Radioisotopes	176,000	58,080 (33%)	58,080 (33%)	\$ 59,840 (34%)	
3. Health and Safety	81,500	24,450 (30%)	16,300 (20%)		\$ 40,750 (50%)
4. Medical Physics	74,400	24,552 (33%)	24,552 (33%)		25,296 (34%)
5. Medical Sciences & Radiobiology	164,500	57,575 (35%)	106,925 (65%)		
6. Mice Colony	13,500				13,500 (100%)
7. Nuclear Engineering	78,000	39,000 (50%)	39,000 (50%)		
8. Nuclear Science	79,500	11,925 (15%)	67,575 (85%)		
9. Radioecology	25,700	3,855 (15%)	21,845 (85%)		
10. Radiotherapy & Cancer	157,300	51,909 (33%)	51,909 (33%)	53,482 (31%)	
11. Reactor	148,700	74,350 (50%)			74,350 (50%)
12. Tropical Agro-Sciences	164,000	65,600 (40%)	98,400 (60%)		
	<u>\$1,277,100 (100%)</u>	<u>\$451,196 (35%)</u>	<u>\$558,686 (44%)</u>	<u>\$113,322 (9%)</u>	<u>\$153,896 (12%)</u>

**PUERTO RICO NUCLEAR CENTER**  
**BASE PROGRAM OPERATIONAL BUDGET**  
 Fiscal Year 1976

Estimated Distribution of Funds -- March 1, 1976

Activity	Budget (100%)	Training (%)	Research (%)	Health Care (%)	Supporting Service (%)
Radiation Oncology	158,700	23,805 (15%)	23,805 (15%)		
Nuclear Medicine	186,700	28,005 (15%)	24,271 (13%)	111,090 (70%)	
Medical Physics	101,000	20,200 (20%)	40,400 (40%)	134,424 (72%)	
Materials Science	71,000	21,300 (30%)	49,700 (70%)	40,400 (40%)	
Reactor Operations	132,900	13,290 (10%)			
Health and Safety	55,400	5,540 (10%)			119,610 (90%)
Tropical Agro-Sciences	180,000	72,000 (40%)	108,000 (60%)		49,860 (90%)
Human Ecology	156,400	54,740 (35%)	101,660 (65%)		
Nuclear Engineering	86,500	51,900 (60%)	34,600 (40%)		
Marine Ecology	25,000	5,000 (20%)	20,000 (80%)		
Terrestrial Ecology	9,000	5,850 (65%)	3,150 (35%)		
Schistosomiasis Control	15,000		15,000 (100%)		
Special Account 84	2,000		2,000 (100%)		
<b>Totals</b>	<b>1,179,600 (100%)</b>	<b>301,630 (26%)</b>	<b>422,586 (36%)</b>	<b>285,914 (24%)</b>	<b>169,470 (14%)</b>
Unassigned	12,000				
	<u>\$1,191,600</u>				



TRAINING AND EDUCATION

E

TABLE SHOWING PRNC STUDENTS BY COUNTRY\*  
From FY-1958 through FY - 1970

	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	TOTAL
Argentina	1	-	2	1	4	1	2	-	4	1	1	3	4	24
Bolivia	1	-	-	-	1	4	1	-	-	1	1	-	1	10
Brazil	-	-	-	-	-	-	-	-	-	1	1	-	1	3
Chile	1	1	2	2	-	-	1	1	2	4	4	3	1	22
Colombia	1	5	3	6	3	6	7	4	4	5	4	8	10	66
Costa Rica	-	2	-	-	-	-	1	-	-	2	1	1	1	8
Cuba	-	1	3	-	-	-	3	1	1	-	-	2	2	13
Dominican Republic	-	-	1	-	-	14	1	1	2	2	5	6	6	38
Ecuador	3	-	1	1	-	-	1	1	1	2	1	3	5	19
El Salvador	-	-	1	-	1	1	2	-	1	2	1	-	-	9
Formosa	-	-	-	-	-	-	-	1	3	2	6	-	-	12
Germany	-	-	-	-	-	-	1	-	1	1	1	-	-	2
Great Britain	-	-	-	-	1	-	-	-	1	1	-	-	-	5
Greece	-	-	-	-	-	-	1	-	-	1	1	-	-	2
Guatemala	-	-	-	1	-	1	2	-	-	-	-	-	2	2
Haiti	-	-	-	1	-	-	-	-	-	-	2	2	1	9
Hungary	-	-	1	-	-	-	-	-	-	-	-	-	-	1
India	1	-	-	-	1	-	-	-	-	-	1	-	-	1
Israel	-	-	-	-	-	-	-	-	-	3	4	-	1	10
Japan	-	-	-	-	-	-	-	-	-	-	1	1	1	3
Korea	-	-	-	-	-	-	1	-	-	-	-	-	-	1
Lebanon	-	-	-	-	-	-	-	-	-	-	-	2	-	2
Liberia	-	-	-	-	-	-	-	-	-	1	1	-	-	2
Mexico	-	5	1	1	2	1	3	2	-	1	1	1	-	3
Nicaragua	-	-	1	1	-	-	-	-	-	1	2	1	2	21
Panama	-	-	-	-	-	1	1	-	-	1	2	2	3	10
Paraguay	-	-	-	-	1	3	2	-	-	-	-	1	-	3
Peru	-	1	3	1	1	3	2	-	-	-	-	3	2	11
Philippine Islands	1	-	-	-	-	1	5	-	1	-	3	2	-	18
South Africa	-	-	-	-	1	-	-	-	2	1	1	1	-	6
Spain	-	1	3	3	3	2	1	-	2	-	2	-	1	20
Thailand	-	-	-	-	-	-	-	-	-	-	-	2	-	2
Turkey	-	-	-	-	-	-	-	-	-	-	-	2	-	2
United Arab Republic	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Uruguay	-	1	1	1	-	1	-	1	1	1	-	-	-	1
Venezuela	-	3	4	3	2	-	-	1	2	3	3	2	1	24
Total Non-U.S. Citizens	9	20	27	21	21	36	35	13	32	37	46	50	45	392
Total U.S. Citizens	50	52	71	74	101	161	176	198	141	199	167	149	146	1,685
TOTAL STUDENTS	59	72	98	95	122	197	211	211	173	236	213	199	191	2,077

\* A student is counted once each Fiscal Year he is in training.

Tabulated: September 30, 1970  
By: Information and Education Services Division

**PRNC Students by Country — FY 1958—FY 1976 \*\***

( A student is counted once each fiscal year he is in training )

	* 1968-70	71	72	73	74	75	76	Total
Argentina	24	6	6	7	2	—	2	47
Bolivia	10	5	5	2	1	1	2	26
Brazil	3	2	2	4	4	4	2	21
Canada	—	1	—	—	1	—	—	2
Chile	22	1	1	1	1	1	—	27
Colombia	66	12	12	9	9	5	3	116
Costa Rica	8	6	2	1	1	1	—	18
Cuba	13	1	—	2	6	—	—	22
Dominican Republic	38	3	4	6	9	3	3	66
Ecuador	19	4	1	2	1	1	1	29
El Salvador	9	—	—	2	1	—	—	13
Formosa	12	1	1	—	—	—	1	14
Germany	2	—	—	—	—	—	—	2
Great Britain	5	—	—	—	—	—	—	5
Greece	2	1	—	—	—	—	—	3
Guatemala	9	—	—	1	3	1	1	15
Haiti	1	1	—	—	2	—	—	4
Honduras	—	1	—	—	—	—	—	1
Hungary	1	—	—	—	—	—	—	1
India	10	—	1	2	2	1	—	16
Indonesia	—	—	1	1	—	—	—	2
Israel	3	—	—	—	1	—	—	4
Jamaica	—	1	2	—	—	—	—	3
Japan	1	—	—	—	—	—	—	1
Kenya	—	—	—	—	—	1	—	1
Korea	2	—	1	—	—	—	—	3
Lebanon	2	—	—	—	—	—	—	2
Liberia	3	—	—	—	—	—	—	3
Malay	—	—	—	1	—	—	—	1
Mexico	21	3	1	2	—	—	—	28
Nicaragua	10	2	—	3	3	2	1	22
Panama	3	2	—	1	2	4	2	14
Paraguay	11	2	1	2	1	2	2	19
Peru	18	1	3	3	3	5	5	38
Philippine Islands	6	—	—	—	—	—	—	6
South Africa	1	—	—	—	—	—	—	1
Spain	20	—	—	—	1	2	—	23
Thailand	2	—	—	—	—	—	—	2
Turkey	1	—	—	—	—	—	—	1
United Arab Republic	1	—	—	—	—	—	—	1
Uruguay	9	3	2	2	—	—	—	16
Venezuela	24	14	5	2	2	2	4	53
<b>Total Non-US Citizens</b>	<b>392</b>	<b>72</b>	<b>51</b>	<b>56</b>	<b>56</b>	<b>36</b>	<b>29</b>	<b>692</b>
<b>Total US Citizens</b>	<b>1685</b>	<b>115</b>	<b>167</b>	<b>169</b>	<b>309</b>	<b>213</b>	<b>153</b>	<b>2811</b>
<b>Total Students</b>	<b>2077</b>	<b>187</b>	<b>218</b>	<b>225</b>	<b>365</b>	<b>249</b>	<b>182</b>	<b>3503</b>

\* Total number of students trained at PRNC from its first year of operation FY-58 through FY-76

\*\* FY 1976 figures are complete through February 15, 1976.

Geographical Distribution of PRNC Students – FY 1970 – FY 1976

Geographical Area	Fiscal Years						
	1970	1971	1972	1973	1974	1975	1976*
South America	24	50	48	34	24	21	19
Central America and Mexico	7	12	3	10	10	8	7
Caribbean	8	6	6	8	17	3	3
Puerto Rico (USA)	141	110	155	164	297	189	141
Continental U S A	5	5	12	5	13	24	12
Europe, Asia, Africa	5	2	4	4	4	4	0
Total Students	190	185	228	225	265	249	182

\* Tabulated February 20, 1976

PRNC Student Enrollment — FY 1974

Training Activity	Maximum Duration	Enrollment	Student Months
Thesis Research, Ph.D. Degree, Biology	12.00	3	22.50
Thesis Research, M.S. Degree, Biology	12.00	4	48.00
Graduate Research, Terrestrial Ecology	0.50	2	1.00
Undergraduate Research, Terrestrial Ecology	2.00	1	2.00
Summer Research, Terrestrial Ecology	2.00	2	3.50
Basic Clinical Radioisotope Applications	2.00	6	12.00
Elementary Nuclear Medicine	0.10	27	2.70
Orientation, Clinical Radioisotope Applications	0.50	59	29.50
Basic, Nuclear Medicine Techniques, Hematology	1.00	4	4.00
Clinical Radioisotope Applications, Elective Class	1.00	1	1.00
Special Training - Nuclear Medicine	12.00	5	14.70
Radiation Therapy Residency Program	12.00	2	22.00
Short Term Radiotherapy Training	2.00	11	12.00
Special Training - Radiotherapy	1.00	1	1.00
Special Training - Medical Physics	2.00	1	2.00
Thesis Research, Ph.D. Degree, Medical Zoology	12.00	1	12.00
Thesis Research, Ph.D. Degree, Microbiology	12.00	2	24.00
Thesis Research, M.S. Degree, Microbiology	12.00	3	29.50
Thesis Research, M.S. Degree, Biology	12.00	2	16.50
Special Training, Virology	1.00	2	1.50
Special Training, Schistosomiasis	9.00	13	31.00
Special Training, Fascioliasis	6.00	16	39.25
M.S. Degree Program, Radiological Health	12.00	14	90.50
Thesis Research, M.S. Degree, Physic	11.00	1	11.00
Special Training - Health Physics	3.00	1	3.00
Thesis Research, Ph.D. Degree, Chemistry	6.00	1	6.00
Thesis Research, M.S. Degree, Chemistry	12.00	3	12.00
Radioisotope Techniques	1.00	14	14.00
Special Training - Gamma Radiolysis	12.00	7	40.00
Special Training - Organic Chemistry	12.00	3	22.50
Thesis Research, M.S. Degree, Physics	9.00	6	50.00
Thesis Research, M.S. Degree, Chemistry	9.00	7	53.00
Introduction to Solid State Physics	0.80	3	2.40
Radiation Chemistry	0.80	8	6.40
Chemical Kinetics	0.80	6	4.80
Theory of Electricity and Magnetism	0.80	6	4.80
Special Training - Solid State Physics	4.00	1	4.00
M.S. Degree Program, Nuclear Engineering	9.00	13	117.00
Introduction to Nuclear Engineering	0.80	9	7.20
Nuclear Measurement and Instrumentation	0.80	2	1.60
Summer Workshop-Electrical Power Generation	0.25	59	14.75
Thesis Research, M.S. Degree, Biology	11.00	3	24.00
Thesis Research, M.S. Degree, Chemistry	4.50	2	9.00
Thesis Research, M.S. Degree, Horticulture	1.00	1	1.00
Nuclear Techniques in Agriculture	0.80	3	2.40
Cytogenetics	0.80	4	3.20
Food Chemistry	0.80	2	1.60
Nuclear Chemistry	0.80	22	17.60
Radiochemistry	0.80	4	3.20
Photophysiology and Crop Productivity	0.80	5	4.00
Special Problems in Horticulture	0.80	1	0.80
Growth Regulators	0.80	2	1.60
Special Training in Mutation Breeding and Radiobiology	3.50	1	3.50
<b>Grand Total</b>		<b>382</b>	<b>868.50</b>

PRNC Student Enrollment -- FY 1975

Training Activity	Maximum Duration	Enrollment	Student Months
Thesis Research, Ph.D., Biology	12.00	2	8.00
Thesis Research, Ph.D., Ecology	12.00	1	11.00
Thesis Research, Ph.D., Fisheries	12.00	1	12.00
Thesis Research, Ph.D., Marine Sciences	12.00	1	9.00
Thesis Research, Ph.D., Oceanography	12.00		2.00
Thesis Research, M.S., Oceanography	12.00	1	6.00
Thesis Research, M.S., Fisheries	12.00	1	12.00
Thesis REsearch, M.S., Biology	12.00	4	27.00
Special Training - Terrestrial Ecology *	2.00	2	4.00
Special Training - Marine Ecology **			
Elementary Nuclear Medicine Course	1.00	27	27.00
Nuclear Medicine Course	5.00	3	15.00
Special Training - Nuclear Medicine *	6.00	8	23.00
Shourt Course - Nuclear Medicine	2.00	9	8.50
Short Term - Radiotherapy Training	5.00	15	25.00
Special Training - Radiotherapy	6.00	3	10.00
Radiation Therapy Residency Program	12.00	1	12.00
Medical Students - Elective Class	1.00	2	2.00
Special Training - Medical Physics *	7.00	5	20.00
Thesis Research, Ph.D., Medical Zoology	12.00	1	12.00
Thesis Research, Ph.D., Microbiology	12.00	3	30.00
Thesis Research, Ph.D., Biochemistry	12.00	1	7.00
Thesis Research, M.S., Microbiology	12.00	4	16.00
Thesis Research, M.S., Biochemistry	12.00	3	26.00
Thesis Research, M.S., Biology	12.00	3	13.00
Special Training, Fascioblasts	10.00	13	53.00
Special Training - Virology	6.00	4	20.00
Special Training - Schistosomiasis	5.00	4	11.00
Special Training - Fossil Fuel Contaminants	6.00	1	3.00
Special Training - Human Ecology *	2.00	1	2.00
M.S. Degree Program - Radiological Health	12.00	16	115.00
Special Training - Health Physics	1.00	1	1.00
Thesis Research, M.S., Chemistry	12.00	3	29.00
Special Training - Gamma Radiolysis	12.00	4	15.00
Special Training - Radiation Chemistry	10.00	2	11.00
Special Training - Organic Chemistry	1.00	1	1.00
On-the-Job Training	4.00	1	4.00
Thesis Research, M.S., Physics	12.00	3	26.00
Thesis Research, M.S., Chemistry	12.00	6	53.00
Postgraduate Research - Physics	11.00	1	11.00
Chem. 608 - Radiation Chemistry	5.00	3	15.00
Special Training - Nuclear Sciences *	2.00	1	2.00
Thesis Research, M.S., Nuclear Engineering	12.00	8	96.00
M.S. Degree Program - Nuclear Engineering	12.00	4	48.00
Special Training - Nuclear Engineering*	2.00	1	2.00
Summer Workshop-Electrical Power Generation	.25	53	13.25
Thesis Research, M.S., Biology	12.00	2	16.00
Thesis Research, M.S., Chemistry	12.00	1	4.00
Thesis Research, M.S., Horticulture	12.00	1	2.00
Thesis Research, M.S., Agronomy	12.00	1	12.00
Nuclear Techniques in Agriculture	4.00	3	12.00
Photophysiology and Crop Productivity	4.00	4	16.00
Special Studies - Biology	4.00	1	4.00
Growth Regulators	4.00	4	16.00
Special Training - Plant Physiology	6.00	4	20.00
Reactor Supervisor Course	6.00	1	6.00
Grand Total		259	996.25

\* One ERDA Undergraduate Research Trainee

\*\*One ERDA Faculty Research Participant

PRNC Student Enrollment - FY 1976 (Tabulated March 1, 1976)

Training Activity	Maximum Duration	Enrollment	Student Months
Thesis Research, Ph.D., Botany	12.00	1	8.00
Thesis, Research, Ph.D., Ecology	12.00	1	8.00
Ecology Research	12.00	3	24.00
Thesis Research, M.S., Fisheries	12.00	1	8.00
Thesis Research, M.S., Biology	12.00	3	24.00
Special Training - Terrestrial Ecology*	2.00	1	2.50
Special Training - Marine Ecology **	3.00	2	6.00
Orientation in Nuclear Medicine	0.50	59	29.50
Nuclear Medicine Course	5.00	6	22.00
Basic Radioisotope Techniques Course	1.00	17	17.00
Special Training - Nuclear Medicine *	6.00	3	5.00
Short Course - Nuclear Medicine	2.00	1	0.50
Short Term - Radiotherapy Training	5.00	14	15.00
Special Training - Radiotherapy	12.00	3	14.00
Radiation Therapy Residency Program	12.00	1	8.00
Special Training - Medical Physics *	7.00	3	12.00
Thesis Research, Ph.D., Medical Zoology	12.00	1	8.00
Thesis Research, Ph.D. Microbiology	12.00	2	16.00
Thesis Research, M.S., Microbiology	12.00	3	24.00
Thesis Research, M.S., Biochemistry	12.00	2	14.00
Human Ecology Research	6.00	1	1.50
Special Training - Fascioliasis	2.00	1	1.00
Aquatic Ecology Studies	12.00	1	8.00
Special Training - Fossil Fuel Contaminants	12.00	1	8.00
Special Training - Human Ecology *	6.00	4	16.00
M.S. Degree Program - Radiological Health	1.00	9	9.00
Thesis Research, M.S., Physics	12.00	4	20.00
Thesis Research, M.S., Chemistry	12.00	3	16.00
Chemistry Research	5.00	3	6.00
Special Training - Nuclear Sciences *	2.00	1	1.50
Thesis Research, M.S., Nuclear Engineering	12.00	3	24.00
M.S. Degree Program - Nuclear Engineering	12.00	5	40.00
Special Training - Nuclear Engineering *	2.00	1	1.50
Thesis Research, M.S., Biology	12.00	3	21.00
Cytogenetics	6.00	3	12.00
Nuclear Techniques in Horticulture	6.00	2	8.00
Thesis Research in Agronomy	12.00	1	0.50
Nuclear Techniques in Biology	5.00	2	8.00
Photophysiology and Crop Productivity	6.00	6	24.00
Special Problems in Crops	6.00	1	2.00
Growth Regulators	6.00	3	6.00
Special Training - Plant Physiology	6.00	6	20.00
<b>Grand Total</b>		<b>191</b>	<b>511.50</b>

\* One ERDA Undergraduate Research Trainee

\*\* One ERDA Faculty Research Participant.

Terrestrial Ecology - Training Activities , January 1974 - June 1975

Two theses for Master of Science degrees in Biology were completed. Research investigations were completed for an additional Master of Science degree and one for Ph.D. dissertation.

Name	Title of Thesis	Major Professor
Carmen Hernandez	Geographic Distribution, Intraspecific Variability and Home Range of <i>Caracolus caracolla</i> (Gastropoda; Pulmonato) in Puerto Rico. M.S. degree completed.	M. Vélez
F. La Caro	Disappearance of <i>Dacryodes excelsa</i> Leaf Litter in a Tropical Montane Rain Forest in Puerto Rico. M.S. degree completed.	R. Clements
E. Cuevas	Changes in Water Quality as Influenced by Land Use Patterns. M.S. Degree	R. Clements
D. Padgett	The Contribution of Aquatic Hyphomycetes in the Decomposition of Submerged Leaf Litter. Ph.D. dissertation.	R. Clements

Rolando Mosquera Moreno; Graduate (Master) Research. "Rejection Criteria for Pairs of Environmental Dose Values Inferred from Thermoluminescence Dosimetry," M. Publ. Health Prog. Research work completed, May 1975. Supervision by Dr. A. McB. Block.

Karl F. Prado; Graduate (Master) Research. "A Computer Program for Calculation of Field Dose Received by Thermoluminescence Dosimeters (TLD CALC in FORTRAN-G.)," M. Publ. Health Prog. Research work completed, May 1975. Supervision by Dr. A. McB. Block.

Daniel Lebrón-Pitre, Graduate (Master) Experimental Research, "Natural Radiation Exposure in Puerto Rico," M. Nucl. Eng., Research work completed April 1974, Degree awarded June 1974. Supervision by Dr. A. McB. Block and Dr. R. G. Clements.

Antonio González, Graduate (Master) Experimental Research on TLD Measurements of Natural Radiation Background in Puerto Rico, M. Nucl. Eng., Research work completed May 1975. Supervision by Dr. A. McB. Block and Dr. R. G. Clements.

Edgardo Hernández; Graduate (Master) Research. "Laboratory Investigation of Statistics of Thermoluminescence Dosimetry using  $\text{CaF}_2$  Dosimeters," M. Publ. Health Prog. Research work completed, May 1975. Supervision by Dr. A. McB. Block.

PRNC-550 (Environmental Radioactivity) course offered for M.S. Degree in Radiological Health was taught by Dr. A. McB. Block, Spring semester, 1975. A total of 8 graduate students completed the course.



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TERRESTRIAL ECOLOGY DIVISION

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Training Activities  
Fiscal Year 1976 \*

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- A. Thesis Research - Ph.D. Botany  
María L. Lebrón Berríos, U. of North Carolina (P.R.)
- B. Thesis Research - M.S. Biology  
Elvira P. Cuevas, UPR (P.R.)  
Pedro I. Cebollero, UPR (P.R.)
- C. Project 380 - Research  
Miguel Vázquez, UPR (P.R.)  
Johnny Villamil, UPR (P.R.)  
Tanya Bruck, UPR (P.R.)
- D. Special Training - Terrestrial Ecology  
Robert M. Aiken, U. of Nebraska (USA)

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MARINE ECOLOGY DIVISION

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Training Activities  
Fiscal Year 1976 \*

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- A. Thesis Research - Ph.D Ecology  
Carolyn Rodgers, U. of Florida (USA)
- B. Thesis Research - M.S. Biology  
Marilyn C. Kimball, U. of Miami (USA)
- C. Thesis Research - M.S. Fisheries  
Mary Price, U. of Washington (USA)
- D. Special Training - Marine Ecology  
Stephen Allen Curtis, Whitman College (USA)  
Walter M. Goldberg, Florida International U. (USA)

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Tabulated March 1st., 1976

Training Activities of the Biomedical Sciences Division, January 1, 1974  
through June 30, 1975.

Subject	Name	Date
Thesis Research :		
Ph.D. Medical Zoology	Félix Liard Bertin	July 1973 - June 30, 1975
Ph.D. Microbiology	José Carrasco Canales	July 1973 - June 30, 1975
"	Eddie Rios Olivares	July 1973 - June 30, 1975
"	Luis J. Torres Bauzá	July 1974 - Dec. 1974
Ph.D. Biochemistry	Sandra M. Quiñones	Feb. 1974 -
M.S. Microbiology	Nitza M. Dávila Ganz	July 1974 - June 30, 1975
"	Ann Sukri	July 1973 - Aug. 4, 1974
"	Robert R. Saylor	July 1973 - Aug. 1974
"	Mercedes Rodríguez	Jan. 1975 - June 30, 1975
M.S. Biochemistry	Carmen C. Vivero	Aug. 1974 - April 1975
"	Genaro Ortiz	Sept. 1974 - June 30, 1975
M.S. Anatomy	José Luis Torres Cruz	Jan. 1975 - June 30, 1975
M.S. Biology	Eduardo Durán Sands	July 1973 - Dec. 23, 1974
"	Edelmira Mayta	Feb. 1974 - Aug. 2, 1974
"	Ana del Llano	Jan. 1975 - May 30, 1975
Special Training—Fascioliasis:		
"	Gadier de Jesús Zavala	Sept. 1974 - Dec. 31, 1974
"	José A. Azor Ores	Nov. 1974 - Dec. 1974
"	Luis Pérez	July 1974 - Aug. 15, 1974
"	Dr. Néstor Cardona	Aug. 1974 - June 31, 1975
"	Víctor M. Velázquez	Aug. 1974 - Jan. 1975
"	Edgar M. Maidonado	Aug. 19 - Aug. 29, 1974
"	Angel Laracuente	Aug. 1974 - June 30, 1975
"	Yolanda Mendoza	Mar. 1974 - May 15, 1974
"	Santiago M. Quiñones	Feb. 1974 - June 30, 1974
"	Julia E. García	Jan. 1974 - May 31, 1974
"	Raúl A. Ríos	Feb. 1974 - May 31, 1974
"	Leila Milagros Vélez	Feb. 1974 - May 31, 1974
"	Rubén Díaz	Feb. 1974 - May 31, 1974
"	Juan D. Miranda	Feb. 1974 - May 31, 1974
"	Frank C. Astor	Jan. 1974 - June 1, 1974
"	Diana Dávila	Mar. 1974 - May 3, 1974
"	Lourdes Lago	Feb. 1974 - May 3, 1974
"	Gilda M. Otero	Sept. 1974 - May 23, 1975
"	Dr. Jaime A. Rodríguez	Apr. 1974 - Dec. 30, 1974
"	Héctor L. Rodríguez	Oct. 1974 - Dec. 30, 1974
"	Wanda R. Ramos	Mar. 1975 - June 30, 1975
"	Dr. Francisco L. Fuch Soares	Mar. 1975 - June 28, 1975
Special Training—Schistosomiasis		
"	Dr. Gilbert Sánchez	July 1974 - Aug. 16, 1975
"	Luciano Puccio	Jan. 1975 - May 30, 1975
"	Freddy Medina	July 1974 - Sep. 3, 1974
"	José M. Díaz	Aug. 1974 - Sept. 1974
"	Efrán Vidal Cabrera	Jan. 1974 - June 30, 1974
"	Justo O. Ramírez	Jan. 1974 - June 30, 1974
"	Aida L. Dávila	Jan. 1974 - June 30, 1974
"	Enid Acosta	Jan. 1974 - May 31, 1974
"	Angel Laracuente	Jan. 1974 - June 30, 1974
"	Socorro Rivera	Jan. 1974 - June 30, 1974
"	Jorge L. Meléndez	Feb. 1974 - May 21, 1974
"	Fossil Fuel Contaminants	Apr. 1975 - June 30, 1975
"	Ana L. Rodríguez	June 1974 - Aug. 15, 1974
"	Virology	Lynnette Oliver
"	Virology	Nitza M. Dávila
"	Virology	Mercedes Rodríguez
"	Virology	Luis Torres Bauzá
"	Virology	James E. Knight
"	Human Ecology	Michael Uhrin
		June 12, - June 30, 1974
		June 9, - June 30, 1975

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HUMAN ECOLOGY DIVISION

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Training Activities  
Fiscal Year 1976\*

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- A. Thesis Research - Ph.D Medical Zoology  
Félix Liard Bertin, UPR Med. Sci. Campus (PR)
- B. Thesis Research - Ph.D Microbiology  
José A. Carrasco, UPR Med. Sci. Campus (PR)  
Eddie Rios Olivares, U. Nac. Autónoma (Nicaragua)
- C. Thesis Research - M. S. Microbiology  
Mercedes Rodríguez, UPR Med. Sci. Campus (PR)  
Nitza M. Dávila, UPR Med. Sci. Campus (PR)  
Sergio Silva, UPR Med. Sci. Campus (PR)
- D. Thesis Research - M. S. Biochemistry  
Genaro Ortíz, UPR Med. Sci. Campus (PR)  
José L. Torres, UPR Med. Sci. Campus (PR)
- E. Special Training: Human Ecology  
Michael G. Uhrin, Belmont Abbey College, N.C. (USA)  
Martha M. Caballero, UPR, (Peru)  
Iván Carrión, UPR (PR)  
Astrid A. Aponte, Inter American U., (PR)
- Special Training: Fascioliasis  
Nestor Cardona (Ph.D) UPR Mayaguez (PR)  
Wanda R. Ramos, Inter. Am. U. (PR)
- F. Aquatic Ecology Studies  
Angel Laracuente, PRNC employee & PR Junior College (PR)
- G. Fossil Fuel Contaminants Project  
Ana L. Rodríguez Morales, Inter Am. U. (PR)
- H. Biology 380 - Research  
Gaddier de Jesus Zavala, Inter Am. U. (PR)

**Training Activities of the Radiation Oncology Division**  
**January 1974 through June 1975**

Name	Dates	Present Position
<b>A. RADIATION ONCOLOGY RESIDENTS</b>		
Dr. Hernan Castro Vita	Jan 1973 - Jun 1974	4th Year Resident, New York
Dr. Gloria Arroyo	Jul 1974 - Jun 1975	2nd Year Resident, PRNC
Dr. Rafael A. Sánchez Martínez	Aug 1973 - May 1974	Private Practice
<b>B. TRAINING COURSE FOR MEDICAL STUDENTS, UPR SCHOOL OF MEDICINE</b>		
Luis R. Gonzalez	Jun - Jul 1974	
José E. Meléndez	Jun - Jul 1974	
Luis A. Almodovar	Jun - Jul 1974, Jun - Jul 1975	
Maria M. Cardona	Jun - Jul 1974, Jun - Jul 1975	
Antonio G. Sotomayor	Jun - Jul 1974, Jun - Jul 1975	
Néstor C. Tirado	Jun - Jul 1974, Jun - Jul 1975	
Noel Totti III	Jun - Jul 1974, Jun - Jul 1975	
Francisco J. Vizcarrondo	Jun - Jul 1974, Jun - Jul 1975	
Carmen D. Zorilla	Jun - Jul 1974, Jun - Jul 1975	
Ivón E. Del Toro	Jun - Jul 1975	
Sigfredo Acosta	Jun - Jul 1975	
Maria E. Velez	Jun - Jul 1975	
Nayda Figueroa	Jun - Jul 1975	
Eduardo C. Castro	Jun 1975	
Gilberto Collazo	Jun - Jul 1975	
<b>C. SHORT TERM RADIOTHERAPY COURSE</b>		
Dr. Gilberto E. Ocampo	Jan 1975 - Jun 1975	Returned to Colombia
Dr. Josefina Garcia	Jan 1974 - Jul 1974	Intern, San Juan City Hosp.
Dr. Maria E. Tavarez	Jun 1974 - Dec 1974	Radiotherapist, Bahia, Brazil
Dr. Charles H. Kent	Mar 1975 - Apr 1975	N.C.I., Bethesda
<b>D. RADIOLOGICAL PHYSICS</b>		
Dr. Maria E. Tavarez	Nov 1974 - Dec 1974	Radiotherapist, Bahia, Brazil
Germán Ramirez	Aug 1974 - Feb 1975	Medical Physicist, Colombia
Roberto Cuenca	Aug 1974 - Jan 1975	Director, Radiation Technology Program, Colombia

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RADIATION ONCOLOGY DIVISION

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Training Activities  
Fiscal Year 1976\*

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- A. Radiation Therapy Residency Program
- Gloria E. Arroyo Bosch (MD) Veteran's Adm. & PRNC (PR)
- B. Special Training: Radiation Therapy
- Jorge A. Moscol Ledesma (MD) Hosp. Central Aeronáutica (Peru)  
Guillermo Guerra Parody (MD) (Colombia)  
Arturo A. Ydrach (MD) UPR Medical School (PR)
- C. Short Term Radiotherapy Training
- Luis A. Almodovar, UPR Med. Sci. Campus (PR)  
María M. Cardona, UPR Med. Sci. Campus (PR)  
Antonio G. Setomayor, UPR Med. Sci. Campus (PR)  
Nestor C. Tirado, UPR Med. Sci. Campus (PR)  
Noel Totti, UPR Med. Sci. Campus (PR)  
Francisco J. Vizcarrondo, UPR Med. Sci. Campus (PR)  
Iván E. Del Toro, UPR Med. Sci. Campus (PR)  
Carmen D. Zorrilla, UPR Med. Sci. Campus (PR)  
Gilberto Collazo, UPR Med. Sci. Campus (PR)  
Eduardo C. Castro, UPR Med. Sci. Campus (PR)  
Nayda R. Figueroa, UPR Med. Sci. Campus (PR)  
María E. Vélez, UPR Med. Sci. Campus (PR)  
Sigfredo Acosta Pérez, UPR Med. Sci. Campus (PR)  
Marcela de la Torre, U. Nac. de Buenos Aires (Argentina)

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Tabulated March 1st., 1976

**Nuclear Medicine Division Training Activities--January 1974 to June 1975.**

**1. Basic Nuclear Medicine Course**

Name	Country	Duration	Sponsor
Virgilina Guimaraes	Brazil	8 Jul - 29 Nov 1974	PRNC
Enio Freytas de Gomes	Brazil	8 Jul - 29 Nov 1974	PRNC
Milton Barnes	P. R.	8 Jul - 29 Nov 1974	PRNC

**2. Special Training**

Name	Country	Duration	Topic
Rafael J. Rodríguez, M.D.	P. R.	7 Mar - 18 Mar 1974	Lung Studies
Carlos E. Lopez, M.D.	P. R.	May 1974	Lung Studies
Cynthia Cotto Cumba	P. R.	1 Jun - 31 Jul 1974	Nuclear Medicine
José Alba, M.D.	P. R.	2 Jul - 30 Aug 1974	Nuc. Med. - Radiology
Felix I. León, M.D.	P. R.	Sep 1974	Lung Studies
Antonio Rosich, M.D.	P. R.	Oct 1974	Nuc. Med. - Neurology
Luis A. Marchan, M.D.	P. R.	Oct 1974	Nuc. Med. - Radiology
María C. del Rosario, M.D.	P. R.	Dec 1974	Nuc. Med. - Radiology
Zaida Boria Blas, M.D.	P. R.	Nov 1974	Nuc. Med. - Neurology
Fernando L. Catínchi, M.D.	P. R.	Jan 1975	Lung Studies
José M. Rivera, M.D.	P. R.	3 Feb - 31 Mar 1975	Nuc. Med. - Radiology
Carlos M. Meléndez, M.D.	P. R.	Apr 1975	Nuc. Med. - Neurology
Frank Kolodziej, M.D.	P. R.	May 1975	Nuc. Med. - Neurology

**3. Nuclear Medicine Residency**

Frieda Silva, M.D.	P. R.	Oct - Nov 1974
Carmen C. Caballero, M.D.	P. R.	Feb - Mar 1975

**4. Elementary Course in Nuclear Medicine for Technicians**

22 lectures for 27 students	PRNC
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**5. M. S. Degree Program in Radiological Health**

4 Lectures and 9 demonstrations for 7 students	24 Jun - 28 Jun 1974	UPR School of Public Health
4 Lectures and 8 demonstrations for 8 students	9 Jun - 13 Jun 1975	UPR School of Public Health

**6. Oak Ridge Undergraduate Research Training**

1 Student	10 weeks
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**7. Nuclear Medicine for Radiology Residents**

12 Conferences for 22 Residents	UPR School of Medicine
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**8. Nuclear Medicine Course for Endocrinology Fellows**

2 Conferences, 7 Demonstration to 5 students	UPR School of Medicine
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**9. Lectures for Medical Students in Pathology**

2 Lectures	UPR School of Medicine
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NUCLEAR MEDICINE DIVISION

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Training Activities  
Fiscal Year 1976\*

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A. Basic Nuclear Medicine Course

José N. Crespo Carruci (MD) U. de los Andes (Venezuela)  
Carlos A. Spada (MD) Hosp. San Roque (Argentina)  
Jaime A. Yapura (MD) Hosp. Viedma (Bolivia)  
José L. Molinari (MD) Univ. Hosp. (PR)  
Eduardo Ludwig Brunel (MD) Hosp. Porto Alegre (Brazil)  
Yolanda Otero Castro, Univ. del Valle (Colombia)

B. Basic Radioisotope Techniques Course

Angel F. Avilés Ramos, Univ. College Cayey (PR)  
Carmen C. Caballero (MD) Univ. Hosp. (PR)  
Elsa Cora, UPR Med. Sci. Campus (PR)  
José N. Crespo Carruci (MD) U. de los Andes (Venezuela)  
Manuel A. Marcial Solano, UPR Med. Sci. Campus (PR)  
Jorge Sánchez Rodríguez, UPR Med. Sci. Campus (PR)  
Frieda Silva de Roldan (MD) Univ. Hosp. (PR)  
Carlos A. Spada (MD) Hosp. San Roque (Argentina)  
Ruben L. Vélez, UPR Med. Sci. Campus (PR)  
Jaime A. Yapura (MD) Hosp. Viedma (Bolivia)  
Antonia Benítez, Veteran's Adm. (PR)  
Angela Saavedra, Hosp. San Juan de Dios, (Bolivia)  
Eduardo Ludwig Brunel (MD) Hosp. Porto Alegre (Brazil)  
Yolanda Otero Castro, Univ. del Valle (Colombia)  
Maria C. Ballesteros, UPR Med. Sci. Campus (PR)  
Alba Nydia Capps Burgos, PRNC employee (PR)  
Magali de Mari, (MD) auditor (PR)

C. Special Training: Clinical Application of Radioisotopes

Ann L. Morgan, Tenn. Technological Univ. (USA)  
Ruz Queensland (MD) UPR Med. Sci. Campus (PR)

D. Short Courses: Nuclear Medicine

Luis A. de Jesús Vargas, UPR Med. Sci. Campus (PR)

E. Orientation Course in Nuclear Medicine (for medical technologists)

59 students, UPR Med. Sci. Campus

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Tabulated March 1st., 1976



Medical Physics Training Activities, January 1974 — June 1975

Training Activities — Medical Physics Section, Jan. 1974 through June 1975.

A. IN SERVICE TRAINING IN MEDICAL PHYSICS

Mr. Víctor M. Velázquez,	Teacher, Humacao High School	Jan 1974 — Jun 1974
Dr. Gloria Arroyo	Resident in Radiation Oncology	Jul 1974 — Aug 1974
Mr. Germán Ramírez Contreras	I.A.E.A. Fellow, Colombia	Aug 1974 -- Feb 1975
Mr. Roberto Cuencas Fajardo	P.A.H.O. Fellow, Colombia	Aug 1974 — Jan 1975
Mr. Antonio G. Sotomayor	Fourth Year Medical Student, UPR	Jun 3-13, 1975
Ms. María E. Velez	Fourth Year Medical Student, UPR	Jun 16-27 1975
Mr. Sigfredo Acosta	Fourth Year Medical Student, UPR	Jun 30 — Jul 11, 1975
Ms. Jamille B. Pernell	ERDA Undergraduate Res. Partic.	May 27 — Jul 31, 1975
Mr. Drew Remignanti	Tucker Fellow, Dartmouth College	Mar 27 — May 19, 1975

B. MASTER OF SCIENCE DEGREE PROGRAM  
IN RADIOLOGICAL HEALTH, UPR

1. Orientation in Medical Physics

César Picón Chavez	I.A.E.A. Fellow, Peru	Jun 10 — 24, 1974
Germán Ramírez Contreras	I.A.E.A. Fellow, Colombia	
Roberto Cuencas Fajardo	P.A.H.O. Fellow, Colombia	
Rosalinda González Tauli	Puerto Rico (USA)	
Brenda Manich Morales	Puerto Rico (USA)	
Haydee Pérez Kraft	Puerto Rico (USA)	
Cruz María Nazario	Puerto Rico (USA)	
Carmen Zorilla Maldonado	First Year Medical Student, UPR	

2. Summer Training in Medical Physics

Eloy Gibbs	P.A.H.O. Fellow, Panama	May 27 -- Jun 6, 1975
Azucena Garzón Quiroz	O.A.S. Fellow, Ecuador	
Rolando Mosquera	Peru	
Karl Prado	P.H.S. Fellow, Puerto Rico (USA)	
Luz Emilda Cabán	P.H.S. Fellow, Puerto Rico (USA)	
Edgardo Hernández	P.H.S. Fellow, Puerto Rico (USA)	
Armando Torres	Puerto Rico (USA)	
Jamille B. Pernell	ERDA Undergrad. Research Trainee	

3. PRNC-525, Radiation Dosimetry Dr. E. T. Agard

4. PRNC-530, Radiation Protection Hazards Dr. E. T. Agard

5. PRNC-535, X-Ray Protection Mr. J. Pacheco

6. PRNC-501, Radiation Physics Dr. E. T. Agard

C. LECTURES IN RADIOLOGICAL PHYSICS — Offered in collaboration with the Dept. of Radiological Sciences of the UPR School of Medicine.

9 Students

Sep — Nov, 1974

D. LECTURE SERIES FOR UNIVERSITY HOSPITAL NURSES — Offered with the assistance of the Health and Safety Division on Safe Handling of Patients.

Lecturers:

José C. Pacheco, Porfirio Toledo	May 15- 21, 1974
Jose C. Pacheco, Santiago Gómez	Nov 4-8, 1974
José C. Pacheco, Santiago Gómez	Feb 3-7, 1974

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MEDICAL PHYSICS SECTION

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Training Activities  
Fiscal Year 1976\*

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A. Special Training: Medical Physics

Jamille B. Pernell, Bishop College, Dallas (USA)  
Edgardo Hernández (PR)  
Rolando Mosquera (Perú)

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Tabulated March 1st., 1976

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HEALTH AND SAFETY DIVISION

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Training Activities  
Fiscal Year 1976\*

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A. M. S. in Radiological Health (Summer Training)

Rolando Mosquera (Peru)  
Edgardo Hernández (PR)  
Azucena Sarzón Quiroz (Ecuador)  
Armando Torres (PR)  
Eloy Gibbs (Panama)  
Karl L. Prado (PR)  
Rosalinda Gonzalez (PR)  
Cruz Ma. Kazarico (PR)  
Luz E. Cabán (PR)

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Tabulated March 1st., 1976

Nuclear Science and Technology Section Training Activities

Training Activities of the Nuclear Science and Technology Section,  
January 1, 1974 — June 30, 1975

Name	Country	Advisor	Inclusive Dates
<b>A. Thesis Research, M.S. Degree, Physics</b>			
Gentil Esteves	Colombia	J. A. Gonzalo	Aug 1973 — Jun 1974
Prudencio Martínez	Puerto Rico	J. A. Gonzalo	Jul 1974 — Feb 1975
Anibal Camnasio	Argentina		Aug 1973 — Jun 1974
Héctor Santiago	Puerto Rico	P. Paolo del Santo	Aug 1973 — Mar 1975
Oswaldo Matos	Puerto Rico	R. S. Singh	Jul 1974 — Dec 1974
José López Santiago	Puerto Rico		Jul 1974 — Jun 1975
<b>B. Thesis Research, M.S. Degree, Chemistry</b>			
Héctor D. Colman Rolón	Paraguay	R. A. Lee	Jan 1974 — Feb 1975
María B. Colón de Olmo	Puerto Rico	R. A. Lee	Jul 1974 — Jun 1975
José Escabi Pérez	Puerto Rico	R. A. Lee	Jan 1974 — Nov 1974
Luz del Mar García de Rosado	Puerto Rico	R. A. Lee	Jul 1974 — Jun 1975
María García	Puerto Rico	R. A. Lee	Jul 1974 — Dec 1974
Víctor González	Puerto Rico	R. A. Lee	Jul 1974 — Jun 1975
Samuel Hernández	Puerto Rico	F. Herrero and R. A. Lee	Jul 1974 — Jun 1975
<b>C. Post-Graduate Research, Physics</b>			
Genaro Coronel	Paraguay	J. A. Gonzalo and M.I. Kay	Aug 1974 — Jun 1975
Anibal Camnasio	Argentina	J. A. Gonzalo	
<b>D. Graduate Courses</b>			
Course	Enrollment		
Chem 587 Introduction to Solid State Physics	3 students		
Chem 608 Radiation Chemistry	8 "		
Chem 673 Chemical Kinetics	14 "		
Chem 571 Nuclear Chemistry	6 "		
Chem 691 Graduate Seminar	4 "		
Elec Eng 625 Solid State Electronics	4 "		
<b>E. Special Research Training in Nuclear Sciences</b>			
Robert M. Purcell, ORAU Undergraduate Research Trainee	Jun 1975		

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MATERIALS SCIENCE DIVISION

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Training Activities  
Fiscal Year 1976\*

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- A. Thesis Research - M. S. Physics
- José R. López Santiago, UPR Mayaguez (PR)
  - Oswaldo Matos, UPR Mayaguez (PR)
  - Fernando J. Noriega, U. del Valle (Guatemala)
  - Jorge L. Ortiz, UPR Mayaguez (PR)
- B. Thesis Research - M. S. Chemistry
- Luz del Mar García, UPR Mayaguez, (PR)
  - María B. Colón, UPR Mayaguez (PR)
  - Samuel Hernández, UPR Mayaguez (PR)
- C. Special Training in Nuclear Sciences
- Robert M. Purcell, Slippery Rock State College (USA)
- D. Chem. 499
- Cecilia R. Quiñones, UPR Mayaguez (PR)
  - Victor E. Toro, UPR Mayaguez (PR)
  - Gloria O. Márquez, UPR Mayaguez (PR)
- E. Biochemical Raman Spectroscopy Project
- Mario Rojas, UPR Mayaguez (Colombia)
  - Roberto Torres, UPR Mayaguez (PR)
  - René Vieta, UPR Mayaguez (PR)

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Tabulated March 1st., 1976

Nuclear Engineering - Training Activities, January 1974 - June 1975

**Special Courses.** Short courses varying in length from one week to three months covering a variety of topics related to nuclear engineering are offered approximately once a year for scientists, engineers and others who have an interest in or need for knowledge in the nuclear field.

During the first week in June 1975, a Summer Workshop on "The Risks and Benefits of Electrical Power Generation in Puerto Rico" was offered for high school science teachers.

This one-week workshop was jointly sponsored by the United States Energy Research and Development Administration, the Puerto Rico Nuclear Center, the University of Puerto Rico, Mayagüez Campus and the Puerto Rico Water Resources Authority. The purpose of the workshop was to provide secondary science teachers with sufficient background to enable them to guide their students and communities towards a more factual and less emotional consideration of the risks and the benefits of electrical power generation in Puerto Rico.

Fifty-two participants from several cities and town throughout Puerto Rico attended the workshop.

Summary of Student Progress in the Master of Science Degree Program  
in Nuclear Engineering from January 1, 1974 to June 30, 1975

Name	Citizenship
<b>Awarded M.S. Degree</b>	
Chellappan, S.	India
Lebrón, D.	U.S.
Lingappan, K.	India
López Sullivan, P.	U.S.
Michelen, J.	Dominican Republic
Musalem, A.	Dominican Republic
<b>Primarily Engaged in Research</b>	
Andreu, C.	U.S.
Cajigas, J.	U.S.
Carrero, D.	U.S.
González, A.	U.S.
Pérez, R.	U.S.
Reyes, L.	U.S.
<b>Primarily Engaged in Course Work</b>	
Ferrer, F.	U.S.
Pérez, C.	U.S.
Rivera, A.	U.S.
Soto, M.	U.S.

### Student Thesis Research Projects

Student	Title of Thesis	Major Professor
Andreu, C.	Determination of Argon-41 Dose at the Puerto Rico Nuclear Center Site Boundary	D. S. Sasscer
Cajigas, J.	A Cost-Benefit Analysis of Condenser-Cooling Systems for Nuclear Power Plants in Puerto Rico	K. B. Pedersen
Carrero, Dick	Feasibility of Qualitative and Quantitative Elastic Scattering Studies Using a 100 $\mu$ Ci Americium Source	E. Ortiz
Chellapan, S.	* Statistical Analysis of Mercury and Cadmium in Fresh Milk Using Instrumental Neutron Activation Analysis	K. B. Pedersen
González, A.	Population Exposure to Natural Radiation in Puerto Rico	E. Ortiz
Lebrón, D.	* Natural Radiation Exposure in Puerto Rico	A. Gileadi
Lingappan, K.	* Determination of the Concentration of Trace Elements in Some Foods in Puerto Rico Using Instrumental Neutron Activation Analysis	H. Plaza
López Sullivan, P.	* Applicability of the Activity Ratio Technique for the Determination of Various Nuclear Parameters	D. S. Sasscer
Michelen, J.	* A Technique for Measuring Gas Stopping Power of Alpha Particles Using Two Solid State Detectors	E. Ortiz
Musalem, A.	* Computation of Operating History and Cooling Time Dependent Fission Product Inventories and Related Quantities	A. E. Gileadi
Perez, R.	Atmospheric Transport of Volatile and Gaseous Radioactive Effluents From The PRNC-TRIGA Reactor	E. Ortiz
Reyes, L.	Accident Analysis for the Transportation of Irradiated Fuel From a Nuclear Power Plant Located in Puerto Rico	K. B. Pedersen

\* Completed

### Courses Taught by Nuclear Engineering Faculty/Scientists

Course	Professor
Elements of Nuclear Engineering	K. Pedersen
Mathematics of Modern Science I	A. E. Gileadi
Reactor Theory	H. Plaza
Nuclear Measurements & Instrumentation	D. S. Sasscer
Advanced Reactor Theory	H. Plaza
Mathematics of Modern Science II	A. E. Gileadi
Nuclear Reactor Technology II	K. Pedersen
Reactor Laboratory	D. S. Sasscer
Special Problems	A. E. Gileadi
Thesis	Gileadi, Ortiz, Pedersen, Plaza, Sasscer
Seminar	Gileadi, Pedersen, Plaza, Sasscer
Risks and Benefits of Electrical Power Generation in Puerto Rico	Ortiz, Pedersen, Plaza, Sasscer

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NUCLEAR ENGINEERING DIVISION

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Training Activities  
Fiscal Year 1976\*

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- A. M. S. in Nuclear Engineering
- Luis E. Batiz Pereira, UPR Mayaguez (PR)
  - Manuel E. López, UPR Mayaguez (PR)
  - Edmundo Martínez, UPR Mayaguez (PR)
  - Milton Ruben Soto, UPR Mayaguez (PR)
  - César Pérez Arenas, UPR Mayaguez (PR)
- B. Thesis Research - M. S. in Nuclear Engineering
- Dick Carrero, UPR Mayaguez (PR)
  - Frank Ferrer UPR Mayaguez (PR)
  - Angel Luis Rivera, UPR Mayaguez (PR)
- C. Special Training: Nuclear Engineering
- Lorraine M. Salazar, Yale Univ. (USA)

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Tabulated March 1st., 1976



### Tropical Agro-Sciences - Training Activities, January 1974 - June 1975

Course		No. of Students	Professor
First Semester, 1974-75			
Agro 552	Radioisotopes Techniques in Agriculture	1	J. Cuevas Ruiz
Agro 699	Research	1	F. K. S. Koo
Hort 605	Nuclear Techniques in Agricultural Research	2	J. Cuevas Ruiz
CiFi 648	Photophysiology and Crop Productivity	4	A. Cedeño-Maldonado
Biol 660	Special Studies in Biology	1	F. K. S. Koo
Biol 699	Research	1	A. Cedeño-Maldonado
Biol 699	Research	1	J. A. Ferrer-Monge
Chem 699	Chemistry Research	1	S. N. Deshpande
Second Semester, 1974-75			
Agro 699	Research	1	F. K. S. Koo
Hort 668	Growth Regulators in Horticulture	4	A. Cedeño-Maldonado
Biol 660	Special Studies in Biology	1	F. K. S. Koo
Biol 699	Research	1	A. Cedeño-Maldonado

Student	Department	Thesis Title	Major Professor
Federico Cuevas Pérez (Dom. Rep.)	Agro.	Mutagenic specificity of 5-bromo-deoxyuridine in relation to soaking time of soybean seeds.	F. K. S. Koo
María Arzola (P.R.)	Chem.	Microanalysis of sulfur-containing amino acids by isotopic dilutions of <sup>14</sup> C-labelled silyl derivatives.	S. N. Deshpande
Alice Ortiz (P.R.)	Biol.	Cytogenetic effect of insulin on human chromosomes.	J.A. Ferrer-Monge
Carmen Asencio (P.R.)	Biol.	Effects of cadmium on the photosynthetic process in isolated chloroplasts.	A. Cedeño-Maldonado

Trainee	Country	Sponsorship	Training Period
Jesús N. García Villalobos	Venezuela	Gran Mariscal de Ayacucho Fellowship (Venezuela)	Jan-Jul 1975
Lilia Delgado Martes	Venezuela	" " "	" " "
Héctor E. Flores Merino	Peru	OAS	Mar-Sep 1975
Julia M. Radosevich-Yrigoyen	"	"	" " "

In addition, these trainees are engaged in research training in the following topics:

Trainee	Research
Jesús N. García Villalobos	Protection of crop plants against SO <sub>2</sub> by organic acids.
Lilia R. Delgado Martes	Physiological effect of herbicides on <i>L. mima</i> .
Héctor E. Flores Merino	Plant Tissue culture.
Julia M. Radosevich Yrigoyen	Role of endogenous hormones on cornelization in tannier.

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TROPICAL AGRO-SCIENCES DIVISION

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Training Activities  
Fiscal Year 1976\*

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- A. Thesis Research - M. S. Biology
- Carmen Asencio, UPR Mayaguez, (PR)  
Alice Ortiz de Caraballo, UPR Mayaguez (PR)  
Blanca R. Riesco, UPR Mayaguez (USA)
- B. Thesis Research - M. S. Agronomy
- Federico Cuevas, UPR Mayaguez (Dominican Rep.)
- C. Special Training: Plant Physiology
- Lilia R. Delgado, U. del Zulia (Venezuela)  
Jesús N. García, U. del Zulia (Venezuela)  
Héctor H. Flores, U. Mayor San Marcos (Perú)  
Julia M. Radosevich, U. Mayor San Marcos (Perú)  
Hirose Ruter, Instituto Agronómico Sao Paulo (Brazil)  
Félix Jorge Olivera, (Mexico)
- D. Ci Fi 648 - Photophysiology and Crop Productivity
- Antonio Rivera, UPR Mayaguez (PR)  
José A. Rodríguez, UPR Mayaguez (PR)  
Ruben Guadalupe Luna, UPR Mayaguez (PR)  
Edwin Acevedo, UPR Mayaguez (PR)  
Efren Pérez, UPR Mayaguez (PR)  
Ricardo Y. León, UPR Mayaguez, (El Salvador)
- E. Biol. 699 - Research
- ( 3 students)
- F. Hort. 668 - Growth Regulators
- Guadalupe Luna, UPR. Mayaguez (PR)  
Efren Pérez, UPR Mayaguez (PR)  
Héctor Flores, U. Mayor San Marcos (Peru)
- G. Biol. 618 - Cytogenetics
- Jose L. Lizarribar, UPR Mayaguez (PR)  
Yolanda Castro, UPR Mayaguez (Colombia)  
Deyanira Lemus, UPR Mayaguez (Venezuela)

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Continue.....

Tabulated March 1st., 1976

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TROPICAL AGRO-SCIENCES DIVISION

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Training Activities

Fiscal Year 1976\*

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Cont.....

H. Biol. 614 - Nuclear Techniques in Biology

Blanca R. Riesco, UPR Mayaguez (USA)

Yolanda Castro, UPR Mayaguez (Colombia)

I. Hort. 605 - Nuclear Techniques in Horticulture

Efren Pérez, UPR Mayaguez (PR)

Aleyda Juárez, UPR Mayaguez (Nicaragua)

J. Agro. 415 - Special Problems in Crops

(1 student)

**Summary of Training Activities of the Applied Physical Sciences Division  
January 1974 - June 1975**

1. Thesis Research, Ph.D. Degree, Chemistry, UPR Rio Piedras				
Lorna Ramírez		Jan 1974	Jun 1974	
2. Thesis Research, M.S. Degree, Chemistry, UPR Rio Piedras				
Lydia Scarano Fiol		Jul 1973	Jun 1974	
Carmen Velázquez		Jul 1973	Jan 1974	
Marisol Rodríguez Rosario, SUBE Trainee		Jul 1974	Jun 1975	
Betzaida Castilla		Aug 1974	Dec 1974	
Melissa Charron		Jul 1974	Jun 1975	
3. Special Training in Gamma Radiolysis				
Luis A. Jiménez, ORAU Undergraduate Research Trainee		Jul 1973	Jun 1975	
Idalia de la M. Hernández "		Jun 1974	Aug 1974	
Melissa Charron "		Jul 1973	Jun 1974	
Carlos L. Vilá "				
Myrtha Trujillo Sanchez, Ph.D., ORAU Faculty Res. Part.		Jun 1974	Jul 1974	
Elsa Violeta Jimenez, ORAU Undergrad. Res. Trainee		Jun 1974	Aug 1974	
4. Special Training in Organic Chemistry				
Deborah S. Narváez Beauchamp, SUBE Trainee		Sep 1973	Aug 1974	
Marisol Rodríguez Rosario, SUBE Trainee		Jul 1973	Jun 1974	
Maria Ivelisse Martínez, ORAU Undergrad. Res. Trainee		Jun 1974	Jul 1974	
Julio A. Colon Maldonado, SUBE Trainee		Sep 1974	Jun 1975	
5. Radioisotope Techniques Course,				
Ramón Ricart Espinosa, Dom. Rep.		Jun 2	Jul 5, 1974	
Ricardo Sigurani Martínez		Francisco A. Fuentes		
Virgínia Guimarães, M.D., Brazil		Salem Hallum Han, Israel		
Gladys Rodríguez Gata, Cuba		Enio de Freitas Gomez, M.D. Brazil		
Mario A. Garcia Hernandez, Cuba		Calixto Perez Ostuaza		
Carlos Jiménez Ferrer		Augusto Moscarella Bolaño, Colombia		
Mercedes Rodríguez Nieves		Milton Barnes		
		Nelson Cuello Suarez, Dom. Rep.		

## PUERTO RICO NUCLEAR CENTER

Partial List of Distinguished Alumni  
March 1st., 1976

1. Dr. Juan J. Rigau, Director  
Office of Petroleum Affairs  
Commonwealth of Puerto Rico  
San Juan, Puerto Rico
2. Dr. Juan A. Bonnet, Head  
Environmental Protection, Quality  
Assurance, and Nuclear Division  
Puerto Rico Water Resources Authority  
San Juan, Puerto Rico
3. Jeanne Ubiñas, M.D., Chief  
Radiotherapy Service  
Veterans Administration Hospital  
San Juan, Puerto Rico
4. Luz Toro de Berríos, M.D., Chief  
Radiotherapy Department  
I. González Martínez Oncologic Hospital  
San Juan, Puerto Rico
5. José N. Correa, M.D., Director  
Radiotherapy Department  
Oncologic Clinic  
Ponce, Puerto Rico
6. Lillian Conde, M.D., Chief  
Nuclear Medicine Laboratory  
San Juan Municipal Hospital  
San Juan, Puerto Rico  
President, Nuclear Medicine  
Society of Puerto Rico
7. Pedro J. Santiago, M.D., Director  
Medical Education Office and Chief,  
Pediatric Oncologic Hematology Section  
University Hospital  
San Juan, Puerto Rico
8. José J. Corcino, M.D., Director  
Medical Research Center  
Puerto Rico Medical Center  
San Juan, Puerto Rico
9. Juan E. Rizek, M.D.  
Assistant Secretary of Health  
Department of Health  
Commonwealth of Puerto Rico  
Head, Clinics, Teachers Association Hospital  
San Juan, Puerto Rico
10. César Soto Gaudier, M.D., Chief  
Radiology Department  
Metropolitan Hospital  
San Juan, Puerto Rico
11. Mr. Raul McClin, Supervisor  
Environmental Protection  
Department  
Puerto Rico Water Resources  
Authority, San Juan  
Puerto Rico
12. Mr. Orlando Angleró, Chief  
Environmental Protection  
Division  
Puerto Rico Water Resources  
Authority
13. Mr. Juan Alcaraz, Supervisor  
Nuclear Studies  
Puerto Rico Water Resources  
Authority
14. Dr. Flavio Padovani, Assoc.  
Professor, Director, Entomology  
Laboratory, University of  
Puerto Rico - Mayaguez
15. Mr. Jesús Parrilla, Dean of  
Sciences, Catholic University  
of Puerto Rico, Ponce P.R.
16. Mr. Pedro Cruz, Supervisor  
Meteorology and Dispersion  
Section, Puerto Rico Water  
Resources Authority  
San Juan, Puerto Rico
17. Dr. Heriberto Torres  
Assistant Professor  
School of Public Health  
Medical Sciences Campus  
University of Puerto Rico
18. Mr. Richard Brown,  
Acting Associate Director  
Puerto Rico Nuclear Center  
Mayaguez, Puerto Rico

19. Angel L. Rodríguez Rosado, M.D., Director  
Nuclear Medicine Laboratory  
Pavia Hospital  
San Juan, Puerto Rico  
Past-President, Nuclear Medicine  
Society of Puerto Rico
20. Martina Castells López, M.D., Chief  
Radiotherapy Department  
Presbyterian Hospital  
San Juan, Puerto Rico
21. Bernardo J. Márquez, M.D., Chief  
Radiology Department  
I. Gonzalez Martínez, Oncologic Hospital  
San Juan, Puerto Rico
22. Norma I. Maldonado, M.D., Medical  
Director, San Juan Municipal Hospital  
San Juan, Puerto Rico
23. Evelyn Cintrón Ruiz, M.D., Director  
Nuclear Medicine Laboratory  
"Hospital de Damas" and Ponce District  
Hospital, Ponce, Puerto Rico
24. Jafeth Ramirez Ledesma, M.D., Chief  
Nuclear Medicine Laboratory  
Mayaguez Medical Center  
Mayaguez, Puerto Rico
25. Nestor Ruben Ortíz, Ph.D. Scientist  
Department of Natural Resources  
Commonwealth of Puerto Rico  
San Juan, Puerto Rico
26. Heriberto Plaza, Ph.D. Associate  
Professor, Nuclear Engineering  
Department, University of Puerto Rico  
Mayaguez, Puerto Rico -Scientist II-PRNC
27. Carlos Reoyos, Dean of Studies  
Regional College System  
University of Puerto Rico
28. Efigenio Rivera, Compliance Safety Officer  
U. S. Department of Labor  
Occupational Safety and Health Act  
San Juan, Puerto Rico
29. Daniel Torres, Medical Physicist  
Radiotherapy Department  
Mayaguez Medical Center  
Mayaguez, Puerto Rico
30. José C. Pacheco, Res. Assoc. III  
Medical Physics Section  
Puerto Rico Nuclear Center  
San Juan, Puerto Rico
31. José R. González, professor  
UPR Arecibo Regional College  
Arecibo, Puerto Rico
32. Pedro del Valle, Radiation  
Protection Specialist  
Department of Health  
Commonwealth of Puerto Rico  
San Juan, Puerto Rico
33. José Pérez, Radiochemist  
Department of Health  
Commonwealth of Puerto Rico  
San Juan, Puerto Rico
34. Porfirio Toledo, professor  
Colegio Universitario del  
Turabo, Caguas, Puerto Rico  
Research Assoc. II (Ad honorem)  
PRNC
35. David Saldaña, Director  
Radiation Health Program  
Department of Health  
Commonwealth of Puerto Rico  
San Juan, Puerto Rico
36. Nimia Irizarry, Acting Head  
Health and Safety Division  
Puerto Rico Nuclear Center  
Mayaguez, Puerto Rico
37. Efraim Bonilla, professor  
Catholic University of  
Puerto Rico, Ponce, Puerto Rico
38. Marcelina Vélez de Santiago  
Director, Chemistry Dept.  
Catholic University of  
Puerto Rico, Ponce, Puerto Rico
39. Milagros Santos, Chemist  
UPR Agricultural Experiment  
Station, Rio Piedras  
Puerto Rico

40. Elsie Granell, Assistant Professor  
Chemistry Department  
UPR - Mayaguez
41. José Rivera Rivera, Asst. Professor  
Puerto Rico Junior College  
San Juan, Puerto Rico
42. Maria L. McClin, Assistant Professor  
Chemistry Department  
UPR Bayamón Regional College
43. Carmen Lecumberry, Asst. to the Director  
Chemistry Department  
UPR - Mayaguez
44. Fernanda Román, Chemist  
Puerto Rico Industrial Development  
Company, San Juan, Puerto Rico
45. Luis Rivera Oyola, Scientist  
Commonwealth Oil Refining Company  
Peñuelas, Puerto Rico
46. Fernando Díaz, Assistant Professor  
UPR Ponce Regional College
47. Candida Rosa de Jesús, Instructor  
Chemistry Department  
UPR Arecibo Regional College
48. Iván Nazario, Scientist  
Digital Equipment Corporation  
San Germán, Puerto Rico
49. Osvaldo Matos, Asst. to the Director  
Physics Department  
UPR - Rio Piedras
50. Dr. Manuel Rodríguez Peraza, professor  
Department of Engineering  
UPR - Mayaguez
51. Dr. Nestor Azniz, professor  
Department of Physics  
UPR - Mayaguez
52. Fausto Muñoz Ribadeneira, Director  
Research in Environmental Engineering  
Catholic University, Quito, Ecuador  
General Secretary, Atomic Energy Commission  
of Ecuador
53. José Facetti, Director  
Physics Department,  
Science Institute  
Asunción, Paraguay
54. Luciano Griffin,  
Nuclear Engineer, Reactor  
Department, Venezuelan  
Institute of Scientific  
Investigation  
Caracas, Venezuela
55. Vicente Rodríguez, Ph.D.  
professor, Genetics Dept.  
"Universidad Autónoma de  
México"
56. Dr. Pedro Soló, Plant Manager  
Casera Food Products  
Manati, Puerto Rico
57. Fernando López Carrasco  
Nuclear Engineer  
Institute of Nuclear Energy  
Mexico
58. Vachira Jiravatana  
Nuclear Energy Commission  
Bangkok, Thailand
59. Abraham Musalem, professor  
Department of Physics  
"Universidad Autónoma de  
Santo Domingo"  
Dominican Republic
60. Augusto Tullman, Scientist  
National Nuclear Energy  
Commission, Campiñas, Brazil
61. Edith Pobles de Irizarry  
Omni Research Laboratory  
San Germán, Puerto Rico
62. Santiago Gómez, Senior Assoc.  
Health and Safety Division  
PRNC - Rio Piedras
63. Hector Colman  
Department of Chemistry  
"Universidad de Paraguay"

64. José Narváez  
Soil Department  
"Universidad de Nicaragua"
65. Bernabé Zuloaga Tobón, professor  
Chemistry Department  
"Universidad de Antioquia"  
Bucaramanga, Colombia
66. José M. Tomé, M.D., Assoc. Professor  
of Radiotherapy - School of Medicine  
UPR - San Juan
67. Antonio Bosch, M.D., Radiotherapist  
University of Wisconsin Hospital  
Madison, Wisconsin
68. Juan Reusche, M.D. Senior Scientist  
Radiation Oncology Division  
PRNC - Rio Piedras
69. Mario Vuksanovic, M.D., Director  
Department of Radiation Therapy  
Cedars of Lebanon Hospital  
Miami, Florida
70. Juan B. René, M.D., Radiotherapist  
New England Medical Center Hospital  
Boston, Massachusetts
71. Aldo E. Lanaro, M.D., Head  
Nuclear Medicine Division, PRNC  
Past-President, Nuclear Medicine  
Society of Puerto Rico
72. Oriel Alva, M.D., Chief  
Radiology and Nuclear Medicine Department  
British Hospital  
Buenos Aires, Argentina
73. Peter Eberstadt, M.D., Radiologist-Chemist  
Atomic Energy Commission, Mexico
74. Hector M. Forcher, M.D., Director  
Nuclear Medicine Laboratory  
Endocrinology and Metabolism Clinic  
Buenos Aires, Argentina
75. Rafael González, M.D., Director  
Institute of Nuclear Medicine  
Santo Domingo, Dominican Republic
76. Alvaro Ortíz, M.D., Consultant  
Department of Health  
San José, Costa Rica
77. Antonio Quijano B., M.D.  
Ex-Director, Medical and  
Biological Uses of Radio-  
isotopes, Atomic Energy  
Commission, Mexico
78. Arturo Valencia Serna, M.D.  
Chief, Radiotherapy Service  
Cali, Colombia
79. Gastón H. Fernepin, M.D.  
Director, Nuclear Medicine  
Department, Central Military  
Hospital, Buenos Aires  
Argentina
80. Eduardo F. Touyá, M.D., Director  
Nuclear Medicine Laboratory  
Clinical Hospital  
Montevideo, Uruguay
81. Luis F. Barragan, M.D., Head  
Nuclear Medicine Department  
Nuclear Energy Commission  
La Paz, Bolivia  
President, Latin American  
Association of Societies of  
Biology and Nuclear Medicine
82. Joao Soares de Almeida, M.D.  
Chief, Nuclear Medicine Service  
Bahia, Brazil
83. Arístides H. Sarmiento, M.D.  
Senior Scientist I  
Nuclear Medicine Division  
PRNC - Rio Piedras
84. René C. Dietrich, M.D.  
Radiology Resident  
University Hospital  
Rio Piedras, Puerto Rico
85. Roberto Cuenca, Director  
Radiation Technology Program  
Universidad del Valle  
Cali, Colombia



FELLOWSHIP SUPPORT

F

PUERTO RICO NUCLEAR CENTER  
 PRINCIPAL SOURCES OF FINANCIAL SUPPORT  
 FOR TRAINEES  
 FY 1961 – FY 1976

Fellowship Program	Number of Grants
ERDA Faculty Research Participation	24
ERDA Laboratory Graduate Participation	12
ERDA Undergraduate Research Training	16
UPR President's Office Fellowship Support	113
International Atomic Energy Agency	36
Organization of American States	24
Pan American Health Organization	16
TOTAL	241

ERDA - FACULTY RESEARCH PARTICIPATION AT PRNC

<u>Name</u>	<u>Country</u>	<u>Year</u>
1. Walter M. Goldberg	U.S.A.	1975-76
2. Nestor Cardona	Puerto Rico	1973-74
3. Gilbert Sánchez	U.S.A.	1973-74
4. Freddy Medina	Dominican Republic	1972-73
5. Harpal Singh	U.S.A.	1972-73
6. Jorge L. Meléndez	Puerto Rico	1972-73
7. Jose M. Revuelta	U.S.A.	1972-73
8. D. H. Thompson	U.S.A.	1971-72
9. Charles D. Kylstra	U.S.A.	1971-72
10. Harold A. Gersh	U.S.A.	1968-69
11. Walter A. Glooschenko	U.S.A.	1968-69
12. John W. Kauffman	U.S.A.	1967-68
13. Martin Feldman	U.S.A.	1967-68
14. Raymond E. Henzlik	U.S.A.	1967-68
15. Elizabeth McMachan	U.S.A.	1966-67
16. Gordon Pirie	U.S.A.	1966-67
17. Carlos Reoyo	U.S.A.	1966-67
18. Howard Ritter	U.S.A.	1966-67
19. James A. Zizchke	U.S.A.	1966-67
20. Herbert S. Verter	U.S.A.	1966-67
21. Robert W. Clack	U.S.A.	1965-66
22. Shreekant N. Meshpande	India	1965-66
23. Charles Norman	U.S.A.	1964-65
24. Seymour Block	U.S.A.	1964-65

ERDA -- LABORATORY GRADUATE PARTICIPATION AT PRNC

	<u>Name</u>	<u>Country</u>	<u>Year</u>
1.	Nitza M. Dávila	Puerto Rico	1975-76
2.	Mercedes Rodriguez	Puerto Rico	1975-76
3.	Marilyn C. Kimball	U.S.A.	1975-76
4.	Jose A. Carrasco	Puerto Rico	1975-76
5.	David E. Padgett	U.S.A.	1974-75
6.	Luis A. Jiménez	Puerto Rico	1973-74
7.	Peter B. Schroeder	U.S.A.	1973-74
8.	Myrtha Trujillo	U.S.A.	1973-74
9.	José R. López Santiago	Puerto Rico	1973-74
10.	Robert Ford Smith	U.S.A.	1966-67
11.	Baltazar Cruz	Puerto Rico	1966-67
12.	Nestor Ruben Ortiz	Puerto Rico	1966-67

ERDA - UNDERGRADUATE RESEARCH TRAINEES AT PRNC

<u>Name</u>	<u>Country</u>	<u>Year</u>
1. Robert M. Aiken	U.S.A.	1974-75
2. Stephen Allen Curtis	U.S.A.	1974-75
3. Ann L. Morgan	U.S.A.	1974-75
4. Jamillo B. Pernel	U.S.A.	1974-75
5. Michael Uhrin	U.S.A.	1974-75
6. Robert M. Purcell	U.S.A.	1974-75
7. Loraine Salazar	U.S.A.	1974-75
8. Angel Laracuente	U.S.A.	1974-75
9. Idalia de la M. Hernández	Puerto Rico	1974-75
10. Elsa Violeta Jiménez	Puerto Rico	1973-74
11. María Ivelisse Martínez	Puerto Rico	1973-74
12. Carmen O. Zorrilla Maldonado	Puerto Rico	1973-74
13. Enid A. Acosta	Puerto Rico	1973-74
14. José M. Fragoso	Puerto Rico	1972-73
15. Melissa Charrón	Puerto Rico	1972-73
16. Luis A. Jiménez	Puerto Rico	1972-73

PUERTO RICO NUCLEAR CENTER  
UPR President's Office Fellowship Support

<u>Fiscal Year</u>	<u>Students</u>	<u>Total Amount</u>
1969	12	\$ 9,780
1970	13	9,775
1971	17	10,000
1972	19	10,000
1973	18	10,000
1974	14	10,000
1975	12	10,000
1976 *	8	8,150
	<hr/>	<hr/>
	113	\$77,705

\* complete through March 1, 1976

## INTERNATIONAL ATOMIC ENERGY AGENCY

## Fellows at PRNC

<u>Name</u>	<u>Country</u>	<u>Year</u>
1. Germán Ramirez Contreras	Colombia	1973-74
2. César Picón Chávez	Perú	1973-74
3. Augusto Tulman Neto	Brazil	1973-74
4. Abdulic E. Maldonado	El Salvador	1972-73
5. Alvaro Luongo Céspedes	Uruguay	1972-73
6. René C. Dietrich Ormachea	Bolivia	1971-72
7. Hernan G. Vera Ruiz	Bolivia	1971-72
8. Charles A. Fantom	Jamaica	1971-72
9. Jesús Sanabria Larez	Venezuela	1971-72
10. Evangelina Pimenidou	Greece	1970-71
11. Christian Pfeiffer	Brazil	1970-71
12. Fausto Muñoz Ribadencira	Ecuador	1970-71
13. Vinicio Perez Ulloa	Costa Rica	1970-71
14. Marisela Vázquez Plata	Mexico	1970-71
15. Leopoldo Torres Mendoza	Nicaragua	1970-71
16. Manuel Roy	Panamá	1970-71
17. Ricardo Lajón Palma	Panamá	1970-71
18. Juan M. Crosa Sorondo	Uruguay	1970-71
19. Joaquín Solanas	Venezuela	1970-71
20. José Nicolas Rojas	Venezuela	1970-71
21. José Samuel Duran	Colombia	1967-68
22. Ignacio Maldonado Rico	Mexico	1967-68
23. Carmen C. Motta	Colombia	1967-68
24. Vachira Jiravatana	Thailand	1967-68
25. Sergio Quadri	Chile	1967-68
26. Graciela Davila	Ecuador	1966-67
27. Benjamín de la Cruz	Philippines	1965-66
28. Edgar A. Paez Mozo	Colombia	1965-66
29. Arnaldo de Hoyos	Mexico	1965-66
30. Loh Kong	Formosa	1964-65
31. Ahmed Sadeek	United Arab Republic	1964-65
32. Cho Fu Lee	Taiwan	1964-65
33. Luis Fernando Luna	Guatemala	1962-63
34. Leonor E. Orozco	Ecuador	1961-62
35. Oscar Gifford	Peru	1961-62
36. Rodolfo Arroyavé	Guatemala	1960-61

OAS REGIONAL SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT PROGRAM-NUCLEAR ENERGY

Activity at the Puerto Rico Nuclear Center

<u>Name</u>	<u>Country</u>	<u>Dates</u>
1. Felix Jorge Oliveras	Mexico	Aug.4-10, 1975
2. Hiroce Ruter	Brazil	July 31,75-Jan.31,76
3. Julia M. Radosevich	Peru	Mar. 18,75-Sep 19,75
4. Hector Flores Merino	Peru	Mar 5,75 -
5. Carlos A. Morales	Nicaragua	Mar 3,75-Mar 15,75
6. Clovis Abrahao Hazin	Brazil	Feb 15,73-Aug 15,73
7. Ariel Alonso Oroz	Uruguay	Feb 1, 72 -Feb 9,73
8. Santiago Gómez Figueroa	Colombia	Jan 13,72-July 31,73
9. José Mireles Sahagun	Mexico	Jan 10,72-Oct 16,72
10. Angel B. Reyes Vega	Ecuador	Jan 10,72-Sep 9,72
11. Gentil A. Esteves	Colombia	Jan 10,72-Apr 10,73
12. Anibal Jorge Camnasio	Argentina	Jan 1,72-June 30,73
13. Eleuterio Molinas	Paraguay	Aug 1,71-Aug 31,72
14. Masayoshi Yoshida	Brazil	Dec 1,70-Aug 31,71
15. Ricardo Gerdingh Landin	Mexico	Oct 1,69-July 31,70
16. Lisandro Vargas	Colombia	Aug 13,69-June 24,71
17. León Pereira	Colombia	Aug 6,69-June 24,71
18. Juanita Freer Calderón	Costa Rica	July 26,69-Oct 31,70
19. Rafael Pereira Ramos	Colombia	July 1,69-Dec 31,70
20. Julio Alberto Mainardi	Argentina	July 1,69-Sept 7,70
21. Genaro Coronel	Paraguay	July 1,69-Dec 3,70
22. Oscar Aragón	Nicaragua	July 1,69-Dec 31,70
23. Angela E. Vallejos	Paraguay	July 1,69-July 30,70
24. Manuel Lagunas	Chile	July 1,69-July 31,70



PAN AMERICAN HEALTH ORGANIZATION

Fellows at PRNC

	<u>Name</u>	<u>Country</u>	<u>Year</u>
1.	Eloy Gibbs	Panamá	
2.	Francisco Fuchs Soares	Brazil	1974-75
3.	Roberto E. Cuenca Fajardo	Colombia	1974-75
4.	Javier A. Rodríguez Frías	Peru	1973-74
5.	Ricardo Chavez Hernández	Costa Rica	1973-74
6.	Alfonso D. Parra Flores	Colombia	1973-74
7.	Vilma Stolfi de Rótolo	Argentina	1972-73
8.	Alvaro Jordán Medrano	Bolivia	1972-73
9.	Luis A. Rodríguez Gordon	Ecuador	1972-73
10.	Patricio Donoso	Chile	1972-73
11.	Juan Francisco Cabezas	Costa Rica	1972-73
12.	Gladys Careaga de Valda	Bolivia	1971-72
13.	Plinio Costa Gómez	Brazil	1971-72
14.	Alfredo Velarde Ponce	Peru	1971-72
15.	Vicente Morales Berra	Venezuela	1971-72
16.	Modesto Rivero	Venezuela	1970-71
			1960-61

**PUBLICATIONS AND PRESENTATIONS  
( RESEARCH OUTPUT)**

**G**

**PUERTO RICO NUCLEAR CENTER**  
**Publications and Presentations**  
**1958-1975**

Calendar Year	Journal Articles	Publications *	PRNC Reports	Abstracts and Presentations
1958	1	2	0	5
1959	4	0	2	8
1960	4	1	1	11
1961	6	3	2	23
1962	24	6	0	32
1963	25	6	17	35
1964	24	3	19	37
1965	20	14	25	61
1966	36	7	15	76
1967	30	6	20	72
1968	38	3	10	43
1969	40	7	13	37
1970	48	5	6	32
1971	35	7	10	46
1972	18	6	9	42
1973	27	7	13	20
1974	27	18	5	49
1975	22	14	22	22
<b>Totals</b>	<b>429</b>	<b>115</b>	<b>189</b>	<b>651</b>

\* Includes book chapters, proceedings of scientific meetings, Theses, and other non-journal publications.

PUERTO RICO NUCLEAR CENTER  
JOURNAL PUBLICATIONS  
MARCH 1, 1976

Journal	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	Total
1. Bol. Asoc. Med. P.R.	1	2			2	1		1	3	2	1	2	2				2	1	20
2. J. Phys. Chem.				1	2	1	1				3	3				2	3	3	19
3. J. Agric. Univ. P.R.								1	2			1	1	2	3	2	2	2	16
4. J. Org. Chem.					2	2	3	1	2	1		1		1	2				15
5. Int. J. Appl. Radiat. Isot.							1	2		2	2	1	3	2			1		14
6. Ferroelectrics													1	2	4	3		2	12
7. Can. J. Chem.					2	1	2		2			2	2						11
8. Phys. Rev.					1	1	1	1	2				1			1	2	1	10
9. Photochem. Photobiol.				4	2	1					1		1					1	10
10. J. Phys. Chem. Solids							1		1	1			1					1	10
11. J. Chem. Phys.							1		3			1	2			2			8
12. Am. J. Roentgenol Radium Ther. Nuc. Med.									1	1	1	1	2	1	1				8
13. Acta Crystalogr.									2	3	1		1	1					8
14. Rev. Latinoam. Quim.													2	2	1	2		1	8
15. Radiat. Res.						2	1	1			1	2							7
16. Radiochim. Acta										1	3	1	2						7
17. Science				2	1	1	1	1											6
18. Phys. Rev. Lett.					2			1			1					2			6
19. J. Am. Chem. Soc.							1		2		1	1					1		6
20. J. Econ. Entomol.									1		1		3	1					6
21. Solid State Commun.										1	1	2		1		1		1	6
22. Radiology				1	1			1	1	1			1						5
23. Tetrahedron							1	1	1	1			1						5
24. J. Phys. Soc. Japan								1					3					1	5
25. Bull. W.H.O.											2	3							5
26. Acta Cytol.			2		1			1											5
27. Arch. Biochem. Biophys.									1	1									4
28. BioScience													3	1			2		4
29. Rev. Española Micropalantol.												1		2	1				4
30. Rev. Biol. Med. Nucl.																	1	3	4
31. Rev. Colegio Ing., Arquitect. y Agrimensores de P.R.		1						1					1						3
32. Publ. Inst. Mar. Science					3														3
33. Nature					2					1									3
34. Ecology							1							1			1		3
35. Ann. Entomol. Soc. Am.							1					2							3
36. Chem. Ind.								1		1	1								3
37. J. Nucl. Med.								1											3
38. Spectrochim. Acta									2								1	1	3
39. J. Molecular Crystals									1		2						1		3
40. Theor. Chim. Acta										1			1	1					3
41. Quim. Farm.											1				1				3
42. Rev. Colegio Quim. P.R.													2	1		1			3
43. Am. J. Trop. Med. Hyg.												1	1						3
44. Caribb. J. Sci.												1							3
45. Cancer												1					1		3
46. Health Phys.															1	1		1	3
																3			3

PKNC JOURNAL PUBLICATIONS (CONTINUED)

Journal	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	Totals
47. Am. J. Phys.				1	1														2
48. J. Chem. Educ.				1							1								2
49. Genetics						1		1											2
50. Nat. Cancer Inst. Monogr.							1												2
51. Anal. Chim. Acta.								1											2
52. Proc. Entomol. Soc. Wash.								1											2
53. Acta Physiol. Lat. Am.									1										2
54. Acta Cient. Venez.									1										2
55. Rev. Sci. Instrum.															1				2
56. J. Clin. Endocrinol. Metab.															1				2
57. Radiologia									1						1				2
58. Bull. Am. Phys. Soc.										1	1								2
59. J. Appl. Phys.										1							1		2
60. Rev. Interam. Radiologia										1	1								2
61. J. Anal. Chem.												1				1			2
62. Rev. Soc. Cient.											2								2
63. Politecnica											2								2
64. Arch. Latinoam. Nutr.											1				1				2
65. J. Nucl. Energy												1	1						2
66. Rev. Mex. Fis.												1	1						2
67. Appl. Opt.													1	1					2
68. Nucl. Technol.															2				2
69. Rev. Asoc. Maestros Ciencias P.R.															2				2
70. J. Labelled Comp.																1	1		2
71. Rev. Soc. Quim. Mex.															1			1	2
72. Am. J. Roentgenol.		1													1	1			2
73. Acta Unio Int. Contra Cancrum			1																1
74. Ann. N.Y. Acad. Sci.			1																1
75. Phoenix				1															1
76. Am. J. Public Health					1														1
77. Branched Chain (ACS)					1														1
78. Radiation Botany					1														1
79. J. Bacteriol.					1														1
80. Chemical Reviews					1														1
81. Chemie der Erde						1													1
82. Nucl. Instrum. Methods						1													1
83. J. Inorg. Nucl. Chem.						1													1
84. J. Mar. Res. (Sears Foundation)						1													1
85. Proc. Nat. Acad. Sci.						1													1
86. Am. Biol. Teach.						1													1
87. Jpn. J. Appl. Phys.						1													1
88. Z. Phys.							1												1
89. J. Nucl. Sci. and Eng.							1												1
90. Biochem. Biophys. Res. Commun.							1												1
91. Radiol. Clin.							1												1
92. Am. Sci.							1												1
93. Borinchem							1												1
94. J. Physique								1											1
95. Ann. Mo. Bot. Gard.									1										1
96. J. Am. Med. Assoc.										1									1
97. Botanica Marina											1								1
98. J. Reprod. Fertil.												1							1
99. Trans. Assoc. Am. Physicians													1						1
100. J. Am. Med. Women's Assoc.														1					1

PRNC JOURNAL PUBLICATIONS (CONTINUED)

Journal	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	Total
101. Am. J. Parasitol.									1										1
102. J. Urology										1									1
103. Experientia										1									1
104. J. Protozool.										1									1
105. Enzymologia										1									1
106. Organo Soc. Venez. Gastroenterol.										1									1
107. Isotopes Radiation Technol.										1									1
108. Tetrahedron Letters										1									1
109. Entomology										1									1
110. Soil Science											1								1
111. Taiwan Sugar Res. Quarterly											1								1
112. Rev. Bras. Pesqui. Med. Biol.											1								1
113. Scand. J. Gastroenterol.											1								1
114. Missouri Medicine											1								1
115. Angewandte Chemie											1								1
116. Am J. Obstet. Gynecol.												1							1
117. J. Waterways Harbors Div.												1							1
118. Exp. Parasitology												1							1
119. Contrib. Cushman Found Foraminifer-Res.													1						1
120. Tulane Studies in Geol.												1							1
121. Nuclear News (ANS)													1						1
122. An. Fis.													1						1
123. Rev. Inst. Med. Trop. Sao Paulo													1						1
124. Bol. Endocrinol. Metab.													1						1
125. Weed Sci.													1						1
126. Cryobiology													1						1
127. Proc. Soc. Exp. Biol. Med.													1						1
128. Rev. Mex. Fis.													1						1
129. Phys. Lett.														1					1
130. Radiol. Health Data Rep.														1					1
131. Birding														1					1
132. Rev. Soc. Cientifica Paraguay														1					1
133. Amer. Natur.															1				1
134. Tulane Stud. Geo. Paleontol.															1				1
135. Acta Radiol. Scand.																1			1
136. J. Foraminiferal Res.																1			1
137. Int. J. Quantum Chem.																1			1
138. Materials Res. Bull.																1			1
139. Nuclear Physics																1			1
140. Radiation Data and Reports																1			1
141. Med. Phys.																	1		1
142. Rev. Latinoam. Microbiol.																	1		1
143. Mar. Pollut. Bull.																	1		1
144. Int. J. of Magnetism																	1		1
145. Environ. Pollut.																	1		1
146. Environ. Quality and Safety																	1		1
147. Can. J. of Botany																	1		1
148. J. Am. Soc. Hort. Sci.																	1		1
149. Estuarine Coastal Mar. Sci.																		1	1
150. Bull. Am. Meteorol. Soc.																		1	1
151. Rev. Iber. Parasitologia																		1	1
<b>TOTALS</b>	<b>1</b>	<b>4</b>	<b>4</b>	<b>6</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>21</b>	<b>36</b>	<b>30</b>	<b>38</b>	<b>40</b>	<b>48</b>	<b>35</b>	<b>18</b>	<b>27</b>	<b>27</b>	<b>22</b>	<b>429</b>

PUERTO RICO NUCLEAR CENTER  
ENVIRONMENTAL IMPACT STUDIES REPORTS

August 1974 -- December 1975

Number	Title	Author
197	Environmental Studies of the Proposed North Coast Nuclear Plant Unit No. 1 Site File	R. E. Munson and staff
197-A	Report 2 volumes + Supplementary Report	
196	Aguirre Environmental Studies Jobos Bay, Puerto Rico Final Report 2 volumes	M. J. Canoy and staff
<u>Site Selection Survey Project Series</u>		
181	Tortuguero Bay Environmental Studies	E. D. Wood and staff
182	Punta Manati Environmental Studies	E. D. Wood and staff
183	Punta Higuero Environmental Studies	E. D. Wood and staff
183-A	Punta Higuero Environmental Studies Supplementary Report	J. D. Parrish
187	Cabo Rojo Platform Environmental Studies	E. D. Wood and staff
188	Cabo Mala Pascua Environmental Studies	E. D. Wood and staff
189	Punta Verraco Environmental Studies	E. D. Wood and staff
<u>Hydrographic Data Reports</u>		
177	Hydrographic Data Report North Coast of Puerto Rico 1973-1974	T.R. Kendall et al.
184	Hydrographic Data Report West Coast of Puerto Rico 1973-1974	E. D. Wood and Rosa Asencio
185	Hydrographic Data Report South Coast of Puerto Rico 1973-1974	E. D. Wood and Rosa Asencio
178	La Chalupa Mission #12 Final Report	R. Castro, et al.
179	Guayanilla Bay Environmental Report 1971-1974	Staff
180	Aerial Infrared Scanning of Discharge Regions of Present and Alternate Power Plant Sites. 2 volumes	E. D. Wood
186	Toxic Metals in the Atmosphere	F. J. Munoz-Ribadeneira, et al.
190	A Manual for Hydrographic Cruises	E. D. Wood
192	Winds for Puerto Rico With Summaries Vol. 1 Ponce 1971-1974 Vol. 2 San Juan 1971-1974	E. D. Wood

