

PRNC214

PUERTO RICO NUCLEAR CENTER

GENERAL

INFORMATION

MARCH 1, 1976

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Organization Chart

(COrganization Chart, March 1, 1976.

Personnel

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and Muldings, Neel 1 1976

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Program Cost Summare, PYIMIS = FY1976

Financ? nd Employment Sassmary. PY-1988- FYI. |

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ose Vrugram Operational Budget. Estimate Debuton, FY-ASTS:

iw Program Operational Bude! #stimated Distbuton, PY-1976

ring and Eaueston

Students by Country, FY-1958 ~ PY-1970

Shudents by Country. PY.1968 ? PY-RO7R

Geogriphie! Distrbation of Students, FY:1970 ~ PY-1976

Student Enrolment, PY971

Student Enrolment, FY-2975,

Student Enrolment, FY-1976.

Training Artes by Decision of §

ton:

uns! Biology. January 1, 1974 ? March 1, 1976

Massiology, FAITE

Huns. Ecology tsimedic

Suvi Veuleime. January 1. 1974 ? March 1, 1976.

Medical Physics, January 1, 1974 ~ March 1, 1976

Health and Safety, FY-1976

Maternal Science Nuclear Science and Technology

Shan. 1, 1974 ~ March 1, 1976,

1 Seenoos), Jan. 1, AYTEMar, 1, 1976

Oncology, January 1, 1971 = March 1, 1976

Nuclear Engineering, January 4, 1971 ~ March 1, 1976

"ropical AgroSciences, January 1, 1974 ~ March 1, 1976

Applied Physical Sciences, January 1971 June 1975,

Parva List of Distinguished Alumni

Fellowship Support

Principal Sources of Financial Support, FY

RDA Faculty Research Participation

ERDA Laboratory Graduate Participation

ERDA Undergraduate Research Training

COR Presents Office

International Atomic Energy Agency

Organization of American States

Pan American Health Organization >

Publications and Presentations (Research Output)

Publications and Presentations, 1958-1975.

Journal Publications, 1958 ? 1975,

Environmental Impact Studies Reports, Aug 1974 ~ Dec

vet ? FY.1976

1075

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a

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ORGANIZATION CHART

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PUERTO RICO NUCLEAR CENTER

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PERSONNEL,

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PUERTO RICO NUCLEAR CENTER

PERSONNEL PROFILE IN MAN-YEARS

March 1, 1976

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Research Programs Selenite Direct gto Averde Indirect.

port ato Support,

? Sat Serre Rato Support

1. Materials Science Division 0.60200 1:3.33,

2, Radiation Oncology 11288013491

3. Nuclear Medicine 180 62811249

4. Tropical Agro Sciences 234 700 1:2.99

5. Human Ecology 6.00 10.00 1:1.66 1221

6. Nuclear Engineering 083 100 1:1.20

7. Medical Physics 1758305 1.74

8. Terrestrial Ecology 600 1000 1:2.00

8. Marine Ecology 12.00 2800 1:2.93"

10. Neutron Diffraction 153450 1:2.94"

11. Physical Sciences 2000

Totals 3500 77.30

Support Activities

1. Director's Office 7.70

2. Administration and Services 23.15

3. Health and Safety 6.00

4. Technical Services 20.00

S. Training and Information 5.00

6. Electronic Services 3.00

7. Title X Account 30.92

Total 95.77

SI

Includes ?Palumbo? erez

?+ Includes Reactor Division

"Title X Account

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FACILITIES

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PUERTO RICO NUCLEAR CENTER

LAND AND BUILDINGS:

March 1, 1976

Tg

20 acres, Mavagies, Federal Agricultural Experiment Station

20 acres, Mayopier, Comalia Will

acre, Rio Pieras, Puerto Rico Medical Center

200 acres Laguito National Forest, Use Permit from the US, Foesry Service

Total 247 acres

?A: Mayanina, Federal Agricultural Experiment Station

Sudng Laboratory Space aft.) Adminstative Space (sft) Other ft)

1. Min 30.000 10000

2 Shop +000 5.000

3 Admintation 5800

4 Nuclear Engineering 20 05

5 Agcuturat She 1388

6 Greenhouse tare

7. Marine Biology Lab. 1300

B Arnon 2400

8. Neutron Generator 2500

10. Hetum Lucier 600

8 Ro Piedras, Puerto Rico Medical Center

1 Bo Medial 30,000 10,000

2. Animal Shop 3.000 2500

© Comets Hi, Mayonuee

1. Laboratory 2500 1.000

2 Aware 1820

El Verde, Luguít National Foret

1. Laboratory 000

oral 23.660 205 7500

Grand Tota 16 Budings-119,845 sore feet

1. New Construction

El Verde

Bete Acquistion Lab, 1.304 168

B- Conn Hit

© Laboratory 108 00 on

Tora 5060 ?600 743

Grand Tota: 2 Buidings 4.417 square tect

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FACILITY INVESTMENT

PUERTO RICO NUCLEAR CENTER

FY 1958 thru FY 1975

FUNDING

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Fecity

Nuclear Center Laboratory and Resctor

Gonter Modifications and Minor Additions

Conversion of PRNC Reactor

?Nuclear Engineering and Training Reactor Annex

Marine Biology Laboratory

Administration Building

?Shop Building and Additions

Agricultural Biosciences Laboratory and Additions

Shielded Facility for Neutron Generator

Total Investment Mayagiez

Biomedical Building

Biomedical

Radiotherapy Linear Accelerator

?Modifications and Minor Additions

Animal Quarters and Vitus Laboratory

Animal Experimental Facilities

Maintenance Shop Facility

Total Investment Rio Piedras

Cometia Hill Site

Morine Biology Lab. and Site Acquisition

Modifications and Additions

?Aquarium Laboratory

Waterfront Facilities for Research Vessel

Total Investment-Cornelia Hill

Total investment - PRNC

Foti

Occupancy

Ape. 19728

Jun. 1969

Jun, 1966

?Jan. 1967

Mar. 1967

May 1968

Sep. 1971,

Feb, 1961

Sop. 1970

?Aug. 1973

Aug. 1965

Mar. 19758

Sep. 1974

?Aug. 1966

ston, 1974

Cost

\$2,960,811

725,907

385,000,

116,305

36,619

95.668

141538

95.568

49,205

\$4636,711

\$589,278

1,398,683

360,470

212,665

203,224

132,000

98,934

\$2,995,254

\$130,000

20,974

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355,363

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\$123,510

\$8,623,012

Construction not Complete

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PROGRAM COST SUMMARY

PUERTO RICO NUCLEAR CENTER.

FY 1968 ~ FY 1976

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ter Naaa3028 96001 671.003 az. g00e 5000 156,620 2500.25,

wr 92.808 673.110 ?sa.o0ge 70712 318,467 2s09.632

1973 33.768 e9063 ?_s2.000e 0762833 3023)

1974 3057761438 © Yo.0008 © 1300569 3.397 686

1975 34999 975,001 51.560 1468,905 2762625

1976" 1,062,000 220000 174000 2606-000

2 sade 108,600 ror new reac ol nd 51275703 fo Ting nd om

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SAECRRO contibution to support of PMMA Power Resse Secon

+ Estimate

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FINANCIAL AND EMPLOYMENT SUMMARY

PUERTO RICO NUCLEAR CENTER

FY 1958 TO FY 1976

Operating Capital Construction Average Employment

Fiscal Program ? Equipment Project ???

Year Coste Costs Funding Regular Part Time

1958	\$ 119,100	\$40,600	2,960,811	26
1959	376,700	19,100	989,278	ag
1960	450,300	222,600	84732	89
1961	750,508	164,551	45,759	161 16
1962	1,268,970	169.501	9576	162 16
1963,	1.437.734	282.228	218.210	180 26
1964	1.777.657	303,980	90,298	233 35
1965,	1.946.088	177,772	126340	235 2
1966,	2:088,190	161,167	198,489	240 66
1967	2,033,869	196,423,	199,602	245, 63
1968	2,161,008	163,741	1.848.603	241 7
1969	2.227.581	184,721	213880	© 213, 49
1970	223809	178,628	119982	214 4a
1971	2,809,926	\$92,5978	398,474	197 57
1972	2508632	244,690	448,902	192 63
1973	3.033218	166,876	425,000	204 76
1974	3,397,646	141,631	425,000	220 79
1975	3,762,625	178,808,	290,000	224 ?
1976	2,686,000	120,000	95,000	178" gae

® Includes procurement of Palumbo at cost of \$350,000

© ORO estimate

{Includes \$1,298,683 for Biomedical Building Addition and \$450,000 for GPP.

* includes 23 on Title X Job Opportunity Funds,

Includes 8 on Title X Job Opportunity Funds.

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PUERTO RICO NUCLEAR CENTER

MEDICAL PROGRAM COST ANALYSIS:

as of March 1, 1976

Radiation ?Nuclear

Oncology

?Salaries and Fringe Benefits 7,800 91,500

Annual Leave 3,000

Overhead 59,900 68,700

Travel 1,000 1,000

Electricity (2.09 sq ft) 11847 9,405

?Space Allocation 5.573 sq.ft

22,300 4:500sa,t. 22,500 1,788sa.t. 8.940

?Materials and Supplies 4,000 12,000

Transportation & Communication 800 ?300

?Shop Charges 800 500

Electronic Charges

Reproduction Charges 900 600

Tuition Charges 1,000

Computer Charges

Equipment Maintenance 800 100

Equipment Depreciation 25.443 14,289

Miscellaneous 11900 ?300

Totals 208,200 225,694

ing (AI* YB

Research ("15%

Medical Servt'r)* 70%

100%

311398 15%

21394 13%

146,502 72%

\$209,290 100% \$225,698 100:

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2,300

?350,422

16% 89,236,

19% 106,909

65% 385,177

100% \$560,422

* As explained on attached sheet.

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5 Radiation Oncology Division ~ The Division Head estimated that 20% of the funds available from ERDA are used directly for training, 30% for research, and 50% for Vedic. However, both training and research are accomplished by offering medical services. Therefore, 12% of the training effort (15%) and 1/2 of the research effort. Since neither training nor research is self-funded and must be added on to the 40% medical services budget.

Division effort includes 18% training, 18% research, and 70% medical wee

sautlar Meticine Division ~ ?The Division Head prepared a detailed analysis of vont
involved in of research, and medical weve. His 8 yelled 80% for
the 26% for esearch. and 44% for medical services. However, he estimated that
ihe teining effort (187) und 1/2 the research effort (13%) entailed the media nie
semis ind therefore shoud be added to the medical service component (11%) tine
sng panied for these purpotes. The final estimate is 187 for training. 13% tor trench
and 72% for medical sevice

rar anal Posies Section ? Vhe Section Head analyzed the PY-1976 effort and determined
ial 20M Bows for Laning, 40% for research, and 40% for medical service. to this nae ne
rcieel setvce i provided to the Radiation Oncology and Nuelear Medicine Divan at
sr eeatt Pning, dosinwety, instrament calioration. Medical service ix nor reamed fey
Fas ling or forall escarch, and therefore it was estimated tht the trench romponcek
le creased 40% becuse the tuning component wis decreed this year thengh ae
qontadeeien Ot MS. Degice Program in Radioloiat Helin Training now power
for Radiation Oncology and Nuclear Medicine Residents

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PUERTO RICO NUCLEAR CENTER

Estimated Distribution Based on Study Made By Director a

1978 BASE PROGRAM BUDGET

Observation of Education Officer*

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Training Research, Supportive

Division Title Form t89) ___budget (100%) Portion) _ ohms) See

1 Applied Phen Senos \$ 114000 5 sng00.88) § 14100165

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4. Mee! Pace 74300 sessriayn essayi Bowe

5 Medial Scenes & Racwivoioy 181.300 S878 8 ong

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1 Scie Some 73800 Habis OTST ae

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TRAINING AND EDUCATION

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PRNC Students by Country ? PY 1958-FY 1976 +6

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eographical Distribution of PRNG Students ~ FY 1970 ? FY 1976

Fiscal Years

raphical Area

Seographical as 1970 1971 1972 1973 to 74 1975 1976"

South America 2% 50 48 38 met tg

Central America and Mexico 7 2 3 © 0 8 7

Caribbean 8 6 6 8 7 3 3

Puerto Rico (USA) 141 110 155 168 297 189 181

Continental U § A 5 5 2 5 13 2% 12

Europe, Asia, Africa 5 2 4 4 48 4 OD

??O___ * * ?°

Total Students 190 185 228 225 265 249 192

* Tabulated February 20, 1976

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PRNC Student Enrollment ? FY 1974

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?Ths Reseach MS. Orpen eles ? too

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nderergutencuch, Teresa clay 209

Elementary Nuclear Medeine 270

Base, Nuclear Siicine Feehnaques "ermatogy 400

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lion Therapy Resceney Progra 2200

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Radiation Chemistry

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?Theory of Eectcky and Magnets ?

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Food Chemitey O90.

Nuclear Chemotry o8 2

Redachemiry O80 +

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Growth Rep oso 2

?Sorc! Training in Mutation Beeding and Radabiolgy 982 i

Grand Tota EY 0

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ENC Student Enrollment ~ FY 1975,

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

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?These Research IS, Peres 1200 : 00

?The Reweareh MS Boing 1200 a 2400

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Fase Radionsrpe Techniques Course 00 a 1200

Special Training rier Methine = 600 2 500

Show Course "Acie: stercine 200 1 080

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Special Training ad henpy 1200 2 3490

Radution Taerps tency Programe 1200 1 800

Specal Training Mesa Payacs = 70) 3 1200

?The Kesar, Pa diel Zoology 1200 2 ?500

"These Research, Ph Serobology 1200 2 18.00

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?Tet Kearch XS Boceminny 3200 2 1400

Homie Eeags Researen 00 : 150

Speci Trainin Faslas 200 1 1.00

?tate Ecology Studie, 1200 1 400,

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MS. Degree Program Radwlogeal Heath 100 ° 9.00

?Theis esearch Ms, Poyics, 1200 ? 000

"hens Researen, MS. Chemistry 1200 a te.00

Chemtbey Rosset \$00 a 5.00

Special Training Sach Siences = 200 3 150

?Thess Research. M.S, Nuclear Bngieeering 2200 2 soo

MS. Degree Program? NoclntEngieeering 290 ? 000

Special Tuning" Nuclee Engineerng 200 1 150

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acter Techniques n ology 5.00 2 ?hoo

Photophysiology and Crop Productivity 5.00 6 24.00

?Special Problem in Crops 600 ' 200

Growth Reproductor, 6.09 3 5.00

?Special Training Plant Physiology 6.00 é 20.00

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* One ERDA Undeadaate Resch Tansé> One BRDA Pasi Hemaree Patepoar

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?Terrestrial Ecology - Training Activities January 1974 - June 1975

saecete Rete completed for an additional Master of Science degree and one for Phy
Eisertation,

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Rolando Mosquera Moreno; Graduate (Master) Research. ?Rejection Criteria tor Paits of

Environmental Dose Values Intered trom Thermoluminescence Desimetsy = At, Pent

Hratth Prog, Research work completed, May 1975, Sujervision by Dr A MeB, Block

FatL Prado: Groduate (Master) Research. ?A Computer Program tor Cileulation ah

arid Bote Received by Thermuluminescence Dosimeters (TLD CALC in FORTRAS-G.),"

Bi Publ: Health Prog. Research work completed, May 1175. Supenision hy Dr A wow

cares peeron Pitre, Graduate (Master) Experimental Rescirch, ?Natural Radhation Expo

sare an Puerto Rico, ? M. Nut. Eng., Research work completed Apr! 1974, Degree

?warded June 1974. Supervision by Dr. A. MeB, Block und Dr. RG. Chanenee

qronio Gonzilez. Graduate (Master) Experimental Rewarch on TLDM. eerements of
pilus Radiation Background in Puerto Rico, M. Nucl. Eng.. Research wurk completed
?May 1975, Supervision by Dr. A. MeB, Block and Dr. & G. Clements

Falgario Hernindes; Graduate (Master) Research, ?Laburatory Inveviat-on of Statistics
Reeentrmoluminescence Dosimetry using CaF, Dosimeter.? M. Publ. te sth Prog
Research work completed, May? 1975. Supervision by Dr. A. Mel, Block

Fees a2) (Environmental Radiosetsty) course offer for MS. Dear in Radhologieat
Health wat taught by Dr. A, MeB. Block, Spring semester, 1975. A total of B grades
students completed the course

?

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SSeS

?TERRESTRIAL ECOLOGY DIVISION

Tralainy ATES

Fiscal Year 1976 *

ic ergo

Thesis Research - Pu.D. Botany

Marfa L. Lebrén Bere?

8) U. of North Cerclina (P.R.)

?Thesis Research = M.S. Biology

Elvira P. Cuevas, UPR (PR.)

Pedro 1. Cebollere, UR (PLR.

Cy Project 380 - Research

Miguel Visquer, UFR (P.R.)

Jobbny viltent, UPR (PAR)

Tanya Bruck, UPR (P.R.)

D, Special Training -

srostrial Beology

Robert M. Aiken, U. of Nebraska (USA)

Tablated Merwe ist, 16,

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MARINE RoOLOgy DivrsroN

Walang STS

Piscal Your 19/6

Ay Thesis Research - Ph.D Beology

Carolyn Rodgers, U. of Florida (USA)

Thesie

earch - M.S. Blology

Mariym C. Kimball, U. of Miaat (USA)

Toesis Research - ,S. Fisheries

Mary Price, U. of Washington (USA)

D. Special Training - Marine Bology

Stephen Allen Curtis, waitman College (USA)

Walter M, Goldberg, Florida International U, (USA)

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?Tealning Activities of the Biomedical Sciences Dwsion,danoay 10197

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MUMAN RooLosy Drviston

FT

Fiscal Year 1976+

A, Thesis Research ~ Ph.D Medical Zoology

Félix Lierd Bertin, UPR Med. Sot. campus (FR)

B. Thesis Research - Ph.D Microbiology

Jose A. Carrasco, UPR Mod. Sei. campus (PR)

Padre Rios Olivares, U. de las Américas (Mérida)

©. Thesis Research - M.S. Microbiology

Mercedes Rodríguez, UFR Med. Sei. Campus (ER)

Marta M. Dévila, UP Med, Sci. Campus? (FR)

Seraio Silva, UR Med, Sci, Campus (FR)

?Thesis Research - M.S,

?Biochemistry

Genaro Ortiz, UR Med. Sei. Campus (FR)

Jose L. Torres, UPR Med. Sci, Campus (FR)

Special training: Human Ecology

Michael i. Unrin, Belmont Abbey College, W.C. (USA)

Marthe M. ?Caballero, UPR, (Peru)

Ivan Carricn, UFR CR)

Astrid A. Aponte, Inter american U., (FR)

Special Training: Pascioliasis

Nestor Cerdona (Px.D) UPR Mayaguer (FR)

Wanda R. Ramos, Inter, An. ty (ER)

F. Aquatic Boology studtes

Angel Laracuenta, PRIC employee & FR Junior College (ER)

8, Fosetl Fuel Contaminants Project

fom 1. Rotefguez Morales, Inter Am. U. (ER)

H, Biology 260 - Research

Gaddier de Jesus Zavala, Inter An. U. (ER)

zy Tabulated March let., 1976

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?Tesining Activities of the Radiation Oncology Division

January 1974 through June 1975

Kio Dates Present Potion

?A RADIATION ONCOLOGY RESIDENTS

Dr. Hernan Castro Vite Jan 1973 - dun 1974 404 Your Resident, New York

Dr. Glona Avoyo ?aT 197ø- in 1978 Bnd Yeur Resident, UNC

DroRafael A. Sinehee Mariner Aug 1999 ?Nay 13h Friate Practice

[A TRAINING COURSE FOR MEDICAL STUDENTS, UPR SCHOOL OF MEDICINE

oie R Gonaater dun - 31974

doe. Melonder Sun sl 199

las A. Almodovar Son a1 1974, sun - st 2975,

Sara Cardona sion So 1974, Jun Dal 1973

Antonio 6. Sotomayor Shin 1 1934 nt 878

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Noot Tout Sun Sul 1974! du ot 1875

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Guero Cotara dun T1370

©. SHORT-TERM RADIOTHERAPY COURSE

Dr. Gilberto £. Ocompo dan Returned to Colombia

Dy Josefina Garin dn 197 Intern San Juan Cy Hoxp

Dy Mara © Taree Bn adotherapi, ahi, Bees

De. Charen i. Rent Mar 1973 © Ape 1978 NOL, Bethea

D. RADIOLOGICAL PHYSICS

Dr Marin F. Tava Nov 1974 Dee 1874 Radiother pis, Bahia Brasil

Geom Ramet ?ug 1974 Bob 1978 Medial Priest Colombin

Roberto Curnce ?ue 1973 Ben t9% Dracir, Radin Teele

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RABIATION OXCOLOSY DEVISTON

aE

Fiscal Your 1976+

i tr

A, Radiaidon Therapy Residency Trogron

Gloria E, Arroyo Both (MD) Veteran's Adm, & FRNC (ER)

B, Special Training: "adiation therapy

Jorge A. Mosca Leva (MD) Hosp. Centre

GufLlerno Uuerra Porody (MD) (Golonbie)

Arturo A, Yarach () UPR Medica) Seto.

©. Short Tom Radistherauy Breiming

Aercndutien (Fru)

rR)

Luis 4. Almodovar, UPR Med. Sci. campus (FR)

Marin M. Cardona, "UFR Med, Sei. Camas (PR)

antonio 6. Sotomiyor, UFR Med. Sci, Cammue (FR)

Nestor C. Tirado, UM Med. Sei. Caxpus (PR)

Noel Totti, UFR Med. Sei, Campus (FR)

Francisco J. Vizonrrondo, UPR Med, Sei. Campus (FR)

Ivdn E, Del'T ro, UP Med. Soi. Campus (FR)

Carmen D. Zorrilla, UPR Med. Sci. Campus. (FR)

Gitberto Collazo, Um Med. Sei. Campus (FR)

Buardo C. Castro, UIR Med. Sei. Campus (FR)

Nayde R. Figueroa, UR Med. Sei. Campus (PR)

Marie BE. Vélez, UER Ned. Sct. Campus (PR)

Sigireds Acosta Pérer, UPR Mea. Sei. Campus (ER)

Marceta de la Torre, J. Nac. de Bucaoe aires (Argentina)

ee

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Nuclear Medicine Division Training Activities January 1974 to dune 1975,

|. Basic Nuclear Medicine Course

Name Country Duration Spomer

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PR f fed? Neuro

a

Fede Sis, 3, PR Oct-Nov 1978

Ghemen © sbaleo, MD PR Pepe sn tas

Elementary Course in Nuclear Medicine for Technicians

M.S. Degree Program in Radiological Health

4 Lectures and 9 demonstrations for 26 students 26 Jun-26 Jun 1974

4 Lectures and 8 demonstrations for 8 students

6. Oak Ridge Undergraduate Research Training

2 Student

UPR School of Public

Health

June 19-19.4 June 1975 UPR School of Public Health

Health

7. Nuclear Medicine for Radiology Residents

12 Conference for 22 Residents

8. Nuclear Medicine Course for Endocrinology Fellows

2 conferences, 7 Demonstration

9. Lectures for Medi

2 Lectures

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NUCLEAR MELILCINE LIVISZON

Jose He crespo Carrucs (MD) U. de los Andes (Venezuela)

Carlos 4. Svade (MD) Hosp. San Roque (Argentina)

Jaime 4. "Yavura (MD) Hosp. Viedna (Ecuador)

Jose i. Motinari (0) Hosp. (FR)

Réuardo Luisig Brune?. (MD) Hosp. Porto Alegre (Brazil)

Yolanda veers castro, Univ. de Vaile (Colombia?)

BL Basic and Technical Course

sotope

Angel P. Avila Ramos, Univ. Colegio Cayey (ER)

Carmen C. Curbetter (HD) Univ. tines. (FR)

Elea Cora, UE Mel. Sci, Came (FR)

foe H. Cresp. Carrot (MD) U. de los Andes (Venezuela)

Manuel 4. Marital Soane, UK Med. Sel. Campus (FA)

gorse Sinchez fogrisvez,? UFR Mu. Sot. Campus (FR)

Frieds Silva de Rolian (MD) Univ. fay. GR

Carte: 8. Spada (MD) Hoep. Sai Rogie irgentina)

Ruben L. Vélez, UPR Mog. Sct. Camous AR

Jaime A. Yapura (MD) Hosp. Viedna. (So! Iva)

Antonia Benfitez, Yeueren's Adm. (ER)

angels Saavedra, Hor>. San Juan Se Dios, (Bolivia)

Savard Ludvis Brunci (MD) Hosp. Porto Alegre (Brazil)

Yolanda Otero Gastro, Univ. de" Valie (Colombia)

Marie c. Bellestero:, UPR Med. Sci. Campus (PR)

ba yéia Cappes Bursos, FRNC employee (PR)

Magali de Mari, (MD) auditnr Ua)

fan L, Morgan, Tenn, Technological Univ. (USA)

Rus Queonland (MD)"UIR Med. Sei, Campus (PR)

Short Courses: Nuclear Medicine

Luis A. de Jeals ve

6, UFR Med. Soi. Campus (FR)

B. Orientation Cour.e in Nuclear Medicine (for medical technologists)

59 etudents, UPR Med. Sei. Campus

?Tabulated March Ist., 1976

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Mecical Physic. "raming Actives, dons

V4 ? June 1975

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

AIN SPRVICE TRAINING IN MEDICAL PHYSICS

Me Mor M. Vazgues, ? Tocher, Mamacao High School dan 1974-?dun 1974

Dr. Gloria Aroye evgent io Radiation Oncology Jol 1874?Aug Lard

Mr. German Rami: Coptrene 1 fA Fellow: Come ?Aug 1974?-Feb 1078,

Mr Roberto Cornea: Fajardo. #-A.H00. Fellow, colera ?Aug 1974 dan 1878,

Mr. Antonio G.Suiomayor? Fourth Yeu Matic Student, UPR Atk g'8" 1978

Ms. Mart. Veer Fourth Year Medic: Student, UPR Sun 1627 1975

Me Sitredo Aces Fourth Veer Medical Stadeats UPR Gun 39 tas, g08

Me dite 8, Pe ERDA Undergatssie es Parte May 27131, 1970

Me Drew Reigns ?Teeker Fellow, Darinouth Gotege Mar 7 ?May 19,197

MASTER OF SCIENCE DEGREE >ROGRAM.

ISRADIOLOGICAL HEALTH, UPR

1. Orientation i Medical Physics dun 10~ 24

(Ch Pn Chaver LARA Fellow, Pens

(Gernin Ramirez Contreras 1A FA, Fallow, Colombia

Roberto CuwneasFujrso? PAHO, Fellow. Colombe

Rovalinds Gonzsee asl Mevto Rice USA)

Brenda Manich Moraes Pesto Rico (USAY

aye Pires Katt Poero Rio (UBA}

Cruz Mari Nasr Piero Rio (USA)

{ormen Zola Sntdonado. Fst Yor Media Student, UPR

2 Summer Trang i Medel Phyvies May 27 Jun, 1978

ly Gibb P.A.L0. Fellow, Panama

?Azacens Carin Quiroz OAS Pellow Eetndor

Rolando Monguere Po

Kari Prado PHS. Feiow, Puerto Rio (USA)

Ian Ema Cabin PALS. Fellow, Puerto Reo (USA)

ard Herder PALS. Fallow, Puerta Rice USA}

Armando Tones Roce Rie (USA

8. PRC, Madation Dosimety Dee ET Rend

4:FRNO530, Radiation Protection Hnsatés DFT. Agard

5: PRNCS35, X Ray Protection SI Pacheco

1. FRNC-501. Radiation Payics Dr. ET Agard

© LECTURES IN RADIOLOGICAL, PHYSICS ~ Offered in clabration with the Dept. of Radoagic!

Scince ofthe UPR School of Mebane

8 Stedente ?Sp Now.1974

LECTUNE SERIES FOR UNIVERSITY HOSPITAL NURSES ? Offered withthe adstane ofthe

Health and Saety Dron on Sate Handing of Baten

Lecturer

?ow C. Pacheco, Pusttio Toledo May 15-21, 1974

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MEDICAL PHYSICS SECTION

ag

Fiscal Year 19/6"

A, Special Training: Medical Physics

(usa)

Janitie B. Pernell, Bishop College, Dall

Eagar?. ornender (72)

Rolando vsequera Per!)

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?Tabulated March Ist., 1976

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?EAU AND SAFETY oTVIS tON

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Plecal ?var 19/6"

a

M, S\$. tm Radiological Health (Sumer ?rt

Rolando Mosquera (Vr)

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Kari. Prado (PR)

Ricalinds donzeler (FR)

Cray a. GR)

Coban (FR)

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[Nuclear Science and Technolog, Section Training Aetivitie

a

?Training Activities of the Nuclear Science and Technology Section,

January 1, 1974 ? June 30, 1975

Nome cousiey Advan Includve Dats

A. Thess Resesch, MS. Dagee Phin

Coromble FA Gonzato Avg 1928 ?dun 1976

Poerio Rico A. Gonaslo dul" 1874 Feb A9te

Arsentina 1973? Jon 87

ietor Sango Puerto Rico. Paolo del Sento 1913 aar i978

Oenido Maton Puerto Rico RS. Sings 1914 Dee 1974

ow Lape Seago Pert Rico 1914 den 1978

B, Thess Resnreh MS, Degree, Chemistry

Hécor D. Colman Rolin Piaguay Ate dan 1974 Feb 3975

Mars B.CoiGn de Ome -PuwtoRico «RA Lee a 1915

owe Esti Pere PowrioRieo RA Lee en 98

la del Mar Gacia de Romsdo Pere Rico RA Lek a 1925,

Mara Gare Piewo Rico LA Lee a 197

Victor Gonads Peta Rico MLA tee ey 198

Samuel Hernindee Puerto Rico Fs enroand

Rate fal 1974 un 3978

©. Post-Graduate Resa, Physlcs

Genaro Coronet Parmguay 4.4. Gono and

3 ay Aut 1974 Jun 1975

Antal Camas Arent 4A. Gonsalo

. Graduate Courses

Coune _ Barolimens

bem 587 Introduction o Solid State Pasi Setadents

Guem 80% Kadation Chemisty a

Ghem 673 Chemie! Kinetien ue

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?Ghee 631 Graduate Seminar -

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. Specla! Rear Training in Nuclear Seences

Robert M,Purel, ORAU Underercute Research Trince fun 1975

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MATERIALS SCIENCE DIVISTON

a

EE

Ay Thesis Resoarch - M, 8, Physics

José R. Lopes Santiago, UFR Mayaguez (FR)

Oswaldo Matos, UFR Mayaguez (FR)

Fernando J. Noriera, U. del Vaile (Guatemala)

Jorge L. Ortiz, UR Mayaguee (FR)

B. Thesis Research - M. 8, chentetry

Luc del Mar Garcia, UPR Mayaguez, (FR)

Maria B. Col?n, UFR Mayaguez (PR)

UPR Mayaguez (FR)

Special Training ix Nuclear Sciences

Robert M, Purcell, Slippery Rock State College (USA)

De chen. 499)

Cecilia R. quifiones, UFR Mayague: (FR)

Victor B. Tare, UP Mayagues (PR)

Gloria O. Mérgier, UPR Mayague: (ER)

B. Blochemical Raman Cpectroseory Project

Mario Rojas, UPR Neyaguez (Colombia)

Roberto Torres, UPR Mayaguez (PR)

René Vota, UPR Mayaguez (FR)

?Tebulated March Ist, 1976

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?Nuclear Eogincering- Training Activities, January 1974 ~ June 1975

Special Courses. ?Short courses varying in length from one week to three months covering
4 tarety of topics related to nuclear engineering are oered approximately once a year
for scientists, engineers and otirrs who have an inerest in oF need for Knowledge in the
puclear fel.

During the fist week in June 1975, a Summer Workshop on ?The Risks and Benefits
?of Electrical Power Generation in Puerto Rico? was uifered for high school see a chers

Sis oneweek workshop was jointly sponsored by tv: United States Energy Research and
Prvclopment Administration, the Puerto Rico Nucleur Center. the University of Pune
ice, Mayaricz Campus and the Puerto Rico Water Resources Authority. The purpen of
{he workshor was to provide swindaty science teacher with sufficiet ackground te

able them? guide their students and communities towards a more factuss and less

Emotional consicration of the rsks and the benefits of lectieal power gencrstion iy

Puert Rieu

Fitty-wo par

workshop,

?pants from several cities and town throughout Puerto Rico attended the

Summary of Student trogress in the Master of Science Degree Program

in Nuclear Engineering (rom January 1, 1974 to dune 30, 1975

Name ~- Cieenship

Awarded MS Deer

Chatappan 8. India

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Student Thesis Resesich Projects

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Suclor Center Ste Hovrdary

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for Navies Power Pais Fr Reon

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Chetapan, 8. * Sittica alysis of Mores nd Cadminm in Posh KB. Pedeten

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?Wipes Sultan, Application of the Acti Rats Facngue for 1.8 Sameer

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Courses Taught by Nuclear Engineering Faculty/Scientists

Se

Elements of Nuclear Engineering i. Pederson

Mathematics of Modern Reactors ALE Gienh

Resonance Theory HPs

Site Measurements & Instrumentation B.S. Smcer

[Advanced Reactor Theory HPave

Mathematics of Modern Reactors I A Gia

Nuclear Reactor Technology K. Pederson

Reactor Technology B.S. Souter

Special Problems AF Gents

Three (ites, Onin, Pederson, Pas, Sse

Seminar Gilat. Pedersen, Pisa, Saucer

Risks and Benefits of Nuclear Power

?Generation in Power Reactors One, Pedersen, Pa, Sse

SE ee

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NUCLEAR ENGINEERING VISION

eos

Fiscal Year 1776

M.S. in Nuclear Engineering

4, UPR Way

Lute B, Basie Per

Manuel B. Oyea, (DR Mayaguez (Ry

Eonundo Martner, eR Mayaguez (FR)

Milton Ruben Soto, UPR Mayaguez: (ER)

O6sar P6rer Arens?, UPR Mayaguez (FR)

cr)

B. Thesis Research - 4. 8. in

joer Rngineering

Dick Carrero, UFR Mayaguez (PR

Frank Ferrer? UPR Mayaguez (55

Angel buts Rivera. UPR Mayaguez (FR)

© Special Training: Nuclear Rrcineerins

Lorraine M. Salazar, Yale Univ. (USA)

Tabulated March Ist., 1976

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?Tropical Agro-Sciences - Training Activities, January 1974 ? June 1978

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First Semester, 1971.75,

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?Hector E. Flores Nevins Pont Tan cone

Jia M. Radosevich Vrigoven Role of endogenous hormones in tortion

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ee

TROPICAL AGRO-SCIENCES uIVTStON

OT

Pisce Year 1976+

et Negro

Thesis Research = M, 8. Biology

Carmen Asencio, UM Mayaguez, (FR)

Alice Ortiz de Caraballo, UPR Mayaguez (FR)

Blanca R. Riesco, UPR Mayaguez (USA)

B. Thesis Research ? §. §. Agronoay

Federic> Cuevas, UPR Nayague: (Dominican Rep.)

a2 Training: Plant Pystology

Ky Deluado, U. del Zutia (Veneructa)

N. Garefa, 'U. uel gudia (Vene

Héctor il. Flores, U. Mayor San Mart

Sulla M, Radosevici., U. Mayor San Marco

Hirove Ruter, Instivuto aes

x Jorge Otivers, (Mexice)

>

fot nis Rivera, UPE ce)

José A. Redricues. UIR Mayacue: (FR)

Ruben Guadalupe Linn, URR Mayaguez (FR)

Edwin Acevedo, UPR Kayaguer (eR)

Bfren Pérez, UFR Mayaguer (ER)

Ricardo Y. Leen, UIR Mayaguez, (5) Salvador)

EB. Blol. 699 - Research

(3 cendents)

F. Hort. 668 - Growth Regulators

Guadalupe Luna, UPR. Mayagues (FR)

Bfren Pérez, UPR Mayaguez (ER)

Héctor Flores, U. Hayor San Marcos (Peru)

G. Biol. 618 ~ cytogenetics

Jose 1. Lizarribar, UPR Mayaguez (FR)

Yolanda Castro, UPR Mayagues (C-Loabsa)

Deyanire Lemus, UZK Mayague: (Venesuela)

?Tebulated MG ?ch Tet, 1976

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oe

TROPICAL AGRO-SCTARCES DIVISION

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Pascal Your 1976"

MI. Biol. 614 ~ mMuctear

?nntques in Biology

Blanca R. Riesco, VER Mayagez (USA)

Yolanda Cartro,UPR Hayacue (Colombia.

T. Hort, 605 - Nuclear Yechniques in Morticulture

Stren Pérez, UPR layuguen (Pt)

Aleyda Jusrez, UL Mayaguer (Ricaragua)

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Suinmary of Training Activities of the Applied Physical Seen 2s DiiNlon

January 1974 ? June 1975,

tawny 1974 Sune 1975

1 Thess Reseach, PhD. Dest, Chemie, UPA Kio Pe

Lora Ramee Bon 1971 dew a9

2 Thos Resurch, MS. Depew, Chetty, UPR

?yds Seraco Pat oe

Manat Rodrigue? Ror, SUBE Triowe a

?Bets Coin hve

4. Special Training in Organic Chemistry

Ls dimenes, ORAU Undergraduate Research Trainee doi 1972 Jan a9

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Metis: Charon a

Cari 1. We

Myrthe Teja Soncher M.D, ORAL Faculty Res Par. dn

he Volta dmenes. ORAL Undergrad Ret. Toner Sun

4, Speco Training in Organic Chemistry

Deborah's Nares Hevuchump, SUBE Trainee sep

Marci todriquet Rowe SUBE Tate vw

Mas eine Maries, ORAU Undergo Rex Teanee ee

5 Madre ton? da asc4

?Ramen ar Roper Bot, Re. Feeery A. Funston

Som Gana flere aba Nogeno Nowra lin, Clamba

Mendes goes Siew Dein Cure Dom. Rap

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?PUERIO RECO NUCLEAR CRITER

Partial List of Distingutsned Alwmt?

March 1st, 1976

2. dr, Juan J. Rigau, Director 20, César ote Gaudter, M.D., Chiet

Office of Petroleum Affaire Radiology Department

Commonwealth of Puerto Rice Metropolitan Hospital

San Juan, Puerto Rico San Juan, Puerto Rico

2 Dr. Juan A. Bonnet, Head LL. Mr, Raul Mechin, Supervisor

Environmental Protection, Quality Revironmental Protection

Assurance, and Tuclear Division Departaent

Puerto Rico water Resources Authority Puerto Rico Water Resources

San Juan, Puerto Rico Authority, San Juan

Puerto Rico

3+ Jeanne Ubitias, M.D., cnter

Radiotherapy Service

Me. Orlanto Anglerd, chief

Veterans Almizi stration Hoopi tal Environmental Protection

San Juan, Puerio Rico Division

Puerto Rico Water Resourcer

Ay tun tere de Berrfoa, M.D, chet Authority

Radiotherapy Lepartaens

I. Sonadiez Martfnez Oneologic Hospital 13. Mr. Juan Alcaraz, Supervisor

San Juan, Puerco Rico Maclear Studies

Puerto Rico Water Resources

José N. Correa, M.D., Director Authority:

Radiotherapy Departaent

Oneotogie Chinie U, Dr, Puavic Padovant, Assoc.

Ponce, Puerto Mico Professor. Director, Entomol ouy

Laborator:, University of

6, Lillian Conde, M.D., Chiet Puerto Rio - Mayague:

Haslear Medicine Laboratory .

Sen Juan Municipal Hospital 15. Mr. Jesds Parritia, Dean of

San Juan, Puerto Rico Sciences, Catholic? University

President Wuclear Medicine of Puerte Rico, Ponce PR.

Society of Puerto Rico

26, Mr. Peare crus, Supervicor

7. Pedro J. Santiago, M.D., Director Meteorolery and Dispersion

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UR Alberto Rovinsky College,

Walter Mazario, Scientist

Digital Business Administration

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Science Institute

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Nucleas berg Comission

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FIC ~ La Piedras

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Departement of Chemistry

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Universidad de Anttoquta?

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Madison, Wirconsin

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RadLation Oncolog) Livisi.n

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Department, o? Radiat icn Tuerapy

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Juan 3, Retié, M.D, Radiotieraptst

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Yuclear Medtoine Divieton, FRNC

Past-President, Nuclear Medicine

Society of huerte Rico

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Buenos Aires, Ar)

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Atomic Energy Comuisaion, Mexico

Hector M. Foreher, M.D., Director

Nuclear NedScine Laboratory

Endocrinology and Metabo! isi CLinte

Buenos Aires, Argentine

Rafael Gonedlez, M.D., Director

Institute of Huclear Hedicine

Santo Domingo, Dominica, Republic

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Cant, Colombia

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Hospital, Buenos Aires

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Nuclear Medecine laboratory

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Muetear Boecy Commission

Le Par, Bolivia

President, Latin American

Association of Societios of

Béology und lelear Medicine

Joao Soures de Almeida, M.D.

Chiet, Taclear Medieine Service

Bahia, Brazil

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Radiology Resident

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Rio Piedras, Puerto Rico

Roberto Cuenca, Director

Radiation Technology Program

Universidad del Valle

Columbia, Missouri,

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FELLOWSHIP SUPPORT

---Page Break---

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

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Fellowship Program Number of

Grants

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ERDA Faculty Research Participation 24

ERDA Laboratory Graduate Participation 2

ERDA Undergraduate Research Training 6

UPR President's Office Fellowship Support 3

International Atomic Energy Agency 36

Organization of American States 24

Pan American Health Organization 6

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PUBLICATIONS AND PRESENTATIONS

(RESEARCH OUTPUT)

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PUERTO RICO NUCLEAR CENTER

Publications and Presentations

1958-1975,

Calendar Journal

Year articles Publications *

1958 7 2

1959 4 °

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1962 24 6

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* Includes book chapters, proceedings of scientific meetings, Theses,
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PUERTO RICO NUCLEAR CENTER

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