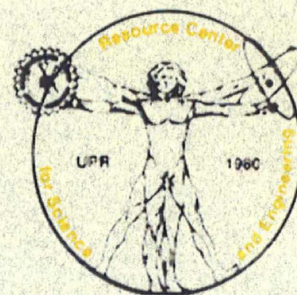


# 34<sup>th</sup> ACS Junior Technical Meeting



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## 19<sup>th</sup> Puerto Rico Interdisciplinary Scientific Meeting



1999

34<sup>th</sup> ACS Junior Technical Meeting  
19<sup>th</sup> Puerto Rico Interdisciplinary Scientific Meeting  
(PRISM)

UNIVERSITY OF PUERTO RICO  
Mayagüez Campus

March 13, 1999

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**34<sup>th</sup> ACS Junior Technical Meeting**  
**19<sup>th</sup> Puerto Rico Interdisciplinary Scientific Meeting (PRISM)**  
University of Puerto Rico-Mayagüez Campus  
March 13, 1999

**GENERAL PROGRAM**

8:00 - 9:00	<b>Registration</b>
9:00 - 9:25	<b>Welcome Remarks</b>  Dr. Manuel Gómez, Vice President University of Puerto Rico  Prof. Sylvia Márquez, Acting Dean Art and Sciences, University of Puerto Rico, Mayagüez  Dr. Nestor Carballeira, President American Chemical Society - Puerto Rico Section
9:25 - 9:30	<b>Presentation of Plenary Speaker</b>  Dr. Manuel Gómez, Director Resource Center for Science and Engineering
9:30 - 10:45	<b>Plenary Conference</b>  "Targeting Nitric Oxide Delivery Pharmacologically for <i>in vivo</i> Biomedical Applications" Dr. Larry K. Keefer
10:50 - 12:10	<b>Scientific Sessions</b>
12:00 - 1:30	<b>Lunch</b>
1:20 - 2:40	<b>Scientific Sessions</b>
2:30 - 2:50	<b>Coffee Break</b>
2:40 - 4:40	<b>Scientific Sessions</b>
5:00 - 7:00	<b>Student Social Activity</b>

34<sup>th</sup> ACS Junior Technical Meeting  
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University of Puerto Rico-Mayagüez Campus  
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**Special Thanks To:**

Ms. Aisha Acosta  
Mrs. Vicky López  
Mr. Héctor Méndez  
Mr. Néstor Merle

on the preparation of this program

34<sup>th</sup> ACS Junior Technical Meeting  
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**Acknowledgments**

Dr. Fred Soltero, Chancellor  
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34<sup>th</sup> ACS Junior Technical Meeting  
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University of Puerto Rico-Mayagüez Campus  
March 13, 1999

**INVITED SPEAKER**

**Dr. Larry K. Keefer**  
**Chief**  
**Laboratory of Comparative Carcinogenesis**  
**National Cancer Institute - FCRDC**  
**Frederick, Maryland**

**PLENARY CONFERENCE**

**"Targeting Nitric Oxide Delivery Pharmacologically for *in vivo*  
Biomedical Applications"**

Many important diseases result from local deficiencies of bioregulatory nitric oxide. We are developing means of treating such disorders by pharmacologically delivering nitric oxide to specific sites in the body at controlled rates and without adversely affecting other nitric oxide-sensitive tissues. Therapeutic strategies currently under development include local infusion of an ultrafast nitric oxide donor reversal of vasospasm, fabrication of nitric oxide-releasing polymers for coating blood contact surfaces to reduce clot formation, and introduction of liver-selective prodrugs that are stable in the general circulation but that become metabolized to a nitric oxide-releasing form by enzymes concentrated in hepatic tissues. The possible application of this technology in the treatment of sickle cell disease will also be discussed.

**Scientific  
Sessions**

**SESSION:** Agricultural Sciences 01 **ROOM:** EE 203  
**Chairperson:** Dr. Salvador Salas

1:20

SANCHEZ, AILEEN\*; SAN JUAN, ALFREDO. Chemical Engineering Department, UPR Mayagüez. RODRIGUEZ, ABNER. Animal Science Department, UPR Mayagüez. RIQUELME, ERNESTO. Chemical Engineering Department, UPR Mayagüez. Standardization of a technique for the determination of fermentation end products in tropical silages by gas chromatography.

1:40

GONZALEZ, GLORIBEL\*; RODRIGUEZ, ABNER; RIQUELME, ERNESTO. Animal Science Department, UPR Mayagüez. Erithritol as additive to prevent the aerobic instability of reconstituted corn silage.

2:00

BRACERO ACOSTA, VILMARIS\*; RIVERA VARGAS, LYDIA I. Departamento de Protección de Cultivos, UPR Mayagüez. Detección del virus del mosaico dorado mediante el uso de ELISA y PCR en habichuela.

*Coffee-break*

2:40

APONTE, WILMA\*. Crop Protection Department, UPR Mayagüez. MORALES, ANWAR S. Department of Agricultural Engineering, UPR Mayagüez. RIVERA, LYDIA I. Crop Protection Department, UPR Mayagüez. Anti-fungal properties of natural compounds from various plant species.

**SESSION:** Chemistry 01 **ROOM:** Q 344  
**Chairperson:** Dr. José Cortés

10:50

BARRETO MENDEZ, YAMARIS; CORTES FIGUEROA, JOSE E. Departamento de Química, UPR Mayagüez. Dinámica química de  $\text{cis-(pip)(P(cy)3)W(CO)}_5$ .

11:10

HOFMANN, CRISTINA\*; TEJADA, GENARO A.; MALDONADO, CELIA I.; MORALES, FLAVIA; GUADALUPE ANA R.; COLON, JORGE L. Chemistry Department, UPR Rio Piedras. Sol-gel synthesis,  $[(\text{Ru}(\text{phend})_3(\text{PF}_6)_2)]$  intercalation, and electrode preparation of zirconium phosphate layered materials.

11:30

ORTIZ ROSADO, AIDA\*; CORTES FIGUEROA, JOSE E. Chemistry Department, UPR Rio Piedras. Estructura y reactividad: Estructuras cristalinas de  $\text{P(cy)}_3\text{M(CO)}_5$  (M= Mo, W).

*Lunch*

**SESSION:** Chemistry 01 **ROOM:** Q 344  
**Chairperson:** Dr. Enrique Meléndez

1:20

RODRIGUEZ, ISRAEL A.\*; MELENDEZ, ENRIQUE. Chemistry Department, UPR Mayagüez. synthesis and kinetic studies of titanocene containing amino acids.

1:40

CARRION, WILMER\*; HERNANDEZ, SAMUEL; VEGA, CARMEN. Chemistry Department, UPR Mayagüez. Spectroscopic studies of platinum complex with amino acids.

2:00

GONZALEZ, ISRAEL A.\*; MELENDEZ, ENRIQUE. Chemistry Department, UPR Mayagüez. Synthesis and kinetic studies of titanocene complexes containing amino acids.

*Coffee-break*

2:40

COTTO-BAZAN, ISRAEL\*; CORTES FIGUEROA, JOSE E. Departamento de Quimica, UPR Mayagüez. Dinámica química de cis-(pip)(PPH<sub>3</sub>)Mo(CO)<sub>4</sub>.

3:00

MORALES RIVERA, LORIA\*; CORTES FIGUEROA, JOSE E. Departamento de Quimica, UPR Mayagüez. Estructura cristalina de cis-(bis-(P(cy)<sub>3</sub>)<sub>2</sub>Mo(CO)<sub>4</sub>.

**SESSION:** Chemistry 02

**ROOM:** Q 019

*Chairperson: Dr. Michael Bellamy*

10:50

RIVERA, LUIS A.; ROMAN, FELIX R.; MARTINEZ, KERMIN J.\*. Chemistry Department, UPR Mayagüez. Isolation and determination of a terpene in *Stachytarpheta jamaicensis*.

11:10

SANTIAGO, OMAIRA\*; HERNANDEZ, ANIBAL; ROSARIO, OSVALDO. Chemistry Department, UPR Rio Piedras. Can monkeys tell us something?: A study of the bioaccumulation of environmental organic pollutants in the fatty tissue of monkeys.

11:30

MOREL, MARIA\*; ROSARIO, OSVALDO; OLMO, JOHN ANTHONY. Chemistry Department, UPR Rio Piedras. CE-UV studies of chlorinated aquatic humic material.

*Lunch*

**SESSION:** Chemistry 02

**ROOM:** Q 019

*Chairperson: Dr. Arnaldo Carrasquillo*

1:20

PEÑA, ALVARO J.\*; HERNANDEZ, S.P.; MINA, N.; RIVERA, L.A.; ROMAN, F.R. Chemistry Department UPR-Mayagüez. Analytical method development for the detection of trace amounts of energetic organic peroxides by GC-MS and HPLC-PDAD.

1:40

ARROYO, CARMEN; APONTE, LIZA; MELENDEZ, YOMAYRA\*; PEREZ, JOSE. Química, PUCPR. Detección de orgánicos volátiles en aguas subterráneas circundantes a un vertedero de desperdicios sólidos.

2:00

ALVAREZ, MARIANA\*; VAZQUEZ, IRIS; CLASSES, GUSTAVO; ROMAN, RICHARD; MINA, NAIRMEN DR.; HERNANDEZ, SAMUEL. Departamento de Quimica, UPR Mayagüez. Detección y análisis de explosivos.

*Coffee-break*

2:40

RAMIREZ, JOSE LUIS\*; BELLAMY, MIKE. Chemistry Department, UPR Mayagüez. MORTENSEN, NORMAN. Department of Electrical Engineer Technology, Kansas State. Analyzing commercial pharmaceutical tablets by Near-Infrared Spectroscopy

3:00

CLASSE, GUSTAVO\*; HERNANDEZ, SAMUEL; VAZQUEZ, IRIS; ROMAN, FELIX; RIVERA, LUIS.

Chemistry Department, UPR Mayagüez. Evaluation of sample collection materials and affinity studies for trace detection of energetic materials by IMS.

3:20

MORALES, FLAVIA\*; AYENESA, MIREM G.; SOTO, NORMA; GUADALUPE, ANA R. Chemistry Department, UPR Rio Piedras. An electrochemical biosensor for NADH detection.

**SESSION:** Chemistry 03

**ROOM:** Q 350

*Chairperson: Dr. Francis Patrón*

10:50

VELEZ CRUZ, RENIER\*; CADIZ, MAYRA E.; DIAZ, EMILIO. Chemistry Department, UPR Mayagüez. Binding of a platinum complex with 1,2-dimethylbenzimidazole to plasmid DNA.

11:10

GONZALEZ, SHERYL\*; GUADALUPE, ANA R. Chemistry Department, UPR Rio Piedras. Synthesis and Characterization of heteroleptic 1,10-phenantroline-5,6-dione complexes of ruthenium.

11:30

PEREZ, CARMEN ANA\*. Biology Department, UPR Mayagüez. RIOS, ROBERT. Chemistry Department, UPR Mayagüez. The synthesis of a Benzodiazepine - Platinum coordination compound proposed to enhance Anticancer Drug Targeting.

*Lunch*

**SESSION:** Chemistry 03

**ROOM:** Q 350

*Chairperson: Dr. Mayra Cádiz*

1:20

SOTO ALVARADO, NORMA M.\*; AYENSA, MIREN G.; RODRIGUEZ, MILIBETH; GUADALUPE, ANA R. Chemistry Department, UPR Rio Piedras. Kinetics studies of the reaction between cobalt polipyridyl complex  $\text{Co}(\text{tpy})_2(\text{NO}_3)_2$  and the diaphorase enzyme from *Clostridium Kluyverii*.

1:40

TORRES, GERARDO\*; CALCAÑO, ANNIA E.; ALARCON, RIQUELIO; COLON, JORGE L. Chemistry Department, UPR Rio Piedras. Synthesis and characterization of  $[\text{re}(\text{bphen}(\text{so}_3)_2)(\text{co})_3(\text{acn})][\text{na}]$  complex used for modification of horse heart myoglobin.

2:00

RODRIGUEZ, MILIBETH\*; AYENSA, MIREN G.; GUADALUPE, ANA R. Chemistry Department, UPR Rio Piedras. Kinetic studies of the reaction between cobalt polypyridyl complexes and the diaphorase enzyme from *Clostridium kluyverii*.

*Coffee-break*

2:40

SANCHEZ PEREZ, LUIS\*; Industrial Biotechnology Department, UPR Mayagüez. RIOS, ROBERTO. Chemistry Department, UPR Mayagüez. Synthesis of Benzodiazepine - Cis-platin complex as a potential drug for cancer treatment.

3:00

ROVIRA, NAHYR\*; MONTAÑEZ, JESSICA; HERNANDEZ, SAMUEL P.; CADIZ, MAYRA E. Chemistry Department, UPR Mayagüez. Surface enhanced raman spectroscopy (sers) study of the interaction of calf-thymus DNA with cationic platinum(ii) complexes.

3:20

VALERA LOZADA, GILDA I\*.; LEON, RUTH; COLON, JORGE L. Chemistry Department, UPR Rio Piedras. Characterization of the Cysteine Rich Protein from the clam *Lucina pectinata*.

**SESSION:** Chemistry 04

**ROOM:** Q 251  
*Chairperson: Dr. Jorge Laboy*

10:50

BOODOOSINGH, GLENDA L.\*; LOPEZ, GUSTAVO. Chemistry Department, UPR Mayagüez. Variations in the spectrum molecules interacting with metallic clusters.

11:10

ACOSTA, KATHYUSKA\*; NEGRON, GRIMALDY; CASTRO, MIGUEL. Chemistry Department, UPR Mayagüez. Surface chemistry of chiral adsorbates on clean and chemically modified Au(111) surfaces.

11:30

VARGAS MEDINA, IRIS MONICA\*. WEINER, BRAD R. MORELL, GERARDO. Physical Chemistry Department, UPR Rio Piedras. In situ infrared spectroscopy of the gaseous species.

*Lunch*

**SESSION:** Chemistry 04

**ROOM:** Q 251  
*Chairperson: Dr. Miguel Castro*

1:20

PERLLONI, ANDREI\*; ORTIZ, WILFREDO; LOPEZ, GUSTAVO E.; Chemistry Department UPR-Mayagüez. Structure and stability of  $(\text{Cu})_x(\text{Au})_{13-x}$ .

1:40

TORRES WILDELIZ\*; CASTRO, RAUL J. Chemistry Department, UPR Cayey. CABRERA, CARLOS R. Chemistry Department, Rio Piedras. DE JESUS CARDONA, HECTOR. Chemistry Department, UPR Bayamon. Thin films of WS<sub>2</sub> and WSe<sub>2</sub> prepared by the intercalation-exfoliation technique.

2:00

HERNANDEZ REINAT, RICARDO\*; MEHTA, JYIOTI; MEHTA, NARINDER. Chemistry Department, UPR Mayagüez. HERNANDEZ RIVERA, SAMUEL P. Chemical Engineering Department, UPR Mayagüez. Detección de trazas de compuestos orgánicos utilizando microscopía Raman y FTIR acoplado a fibras ópticas.

*Coffee-break*

2:40

OTERO TAPIA, SARY A.; FERRER TORRES, EDMY J.\*; CASTRO, MIGUEL. Chemistry Department, UPR Mayagüez. Design of electron gun for the study of electron induced chemical reactions of adsorbates.

3:00

MANSO, JALICE\*; WEINER, BRAD R.; MORELL, GERARDO. Chemistry Department, UPR Rio Piedras. Study of the carburization of tantalum filaments employed in the chemical vapor deposition of diamond.

3:20

OTERO, SAMARET\*; FUENTES, LYMARI; RODRIGUEZ, ROBERTO; CARBALLEIRA, NESTOR QUIÑONES, EDWIN. Chemistry Department, UPR Rio Piedras. On the development of a fluorescent sensor based on a host-guest complex as a sensing device.

**SESSION:** Chemistry 05

**ROOM:** Q 245  
*Chairperson: Dr. Nahirme Mina*

10:50

FUENTES, LYMARI\*; OTERO, SAMARET; REYES, MANUEL; QUIÑONES, EDWIN. Chemistry Department, UPR Rio Piedras. Kinetics Studies of the hydrolysis of NOB by phospholipase

**A2 within a SOL-GEL matrix**

11:10

VAZQUEZ AYALA, IRÍS C.\* ; HERNANDEZ RIVERA, SAMUEL P. Chemistry Department, UPR Mayagüez. CHAMBERLAIN, R. THOMAS. Federal Aviation Administration, Aviation Security Research . Characterization of fingerprint-like samples of plastic explosives using Raman Microprobe Spectroscopy.

11:30

VICENS, MARIE C.\*; LOPEZ, GUSTAVO. Chemistry Department, UPR Mayagüez. Developing a new and efficient computational method for the construction of phase diagrams.

*Lunch***SESSION:****Chemistry 05****ROOM: Q 245***Chairperson: Dr. Astrid Cruz*

1:20

MEDINA, ZULEIKA\*; CRUZ, ASTRID J. Chemistry Department, UPR Mayagüez. Study of the dissociation dynamics of molecular hydrogen on Ni clusters.

1:40

FERRER, AMARIS; FLORES, WILMARIE\*; LAWSON, RAPHAEL; ALEGRIA, ANTONIO E. Departamento de Quimica, UPR Humacao. Aumento en la rapidez de reduccion de ferricitocroma c durante la irradiacion con ultrasonido de soluciones acuosas de quinonas saturadas con argón.

2:00

LOPEZ, GUSTAVO E.; SANTIAGO, IVONNE; LABOY, MICHELLE\*. Civil Engineering Department, UPR Mayagüez. Simulating optimum adsorption conditions for molecular species adsorbed in Heulandite zeolite.

*Coffee-break*

2:40

MERCADO, EUNICE; VICENS, MARIE C.; LÓPEZ, GUSTAVO, E. Chemistry Department, UPR Mayagüez. The electronic structure of neutral and positively charged rare-gas clusters.

**SESSION:****Chemistry 06****ROOM: Q 123***Chairperson: Dr. Doris Ramírez*

10:50

ORTIZ, AMALIZ\*; SANTOS, LIZETTE. Quimica, PUCPR. El efecto de *Curcuma longa* en el comportamiento de la especie Balb/C.

11:10

VELEZ, SAMUEL\*; RIVERA, LUIS. Chemistry Department, UPR Mayagüez. SALAS, SALVADOR. Departamento de Horticultura, UPR Mayagüez. Giberelinas endógenas en las semillas del gandul (*Cajanus cajan* (L) Huth de días cortos.

11:30

GONZALEZ, AUREA\*; Department of Chemistry, UPR Cayey. LANKUPALLE, JAYANTHI D.; DEFELICE, LOUIS J. Department of Pharmacology, Vanderbilt University School. Synaptic transmission - norepinephrine transporter.

*Lunch*

**SESSION:** Chemistry 06

**ROOM:** Q 123  
*Chairperson: Dr. Emilio Díaz*

1:20

OTERO, JOSE DAVID\* ALLENDE, DANIEL; MORALES, REGINALD. Chemistry Department, UPR Rio Piedras. **Mast cell degranulating peptides interact with annular lipids and displace secreted phospholipase A2.**

1:40

FRONTERA, JOEL E.\*; SANTOS, ANGELICA M.; GRIEBENOW, KAI. Chemistry Department, UPR Rio Piedras. **Solvent dependence of the activity of the serine protease subtilisin Carlsberg in organic solvents.**

2:00

DIAZ, LIZ MARIE\*; CASTRO, INGRID; DIAZ, ABRAHAM MORALES, REGINALD. Chemistry Department, UPR Rio Piedras. QUESADA, ORESTES Physics Department, UPR Rio Piedras. **Cationic amphiphiles and local anesthetics affect.**

*Coffee-break*

2:40

DIAZ, YANIRA\* ; BARLETTA, GABRIEL ; GRIEBENOW, KAI; SANTOS, ANGELICA Chemistry Department, UPR Humacao. **Effect of methyl-B-cyclodextrin on activity and structure of subtilisin Carlsberg in organic solvents.**

3:00

MACIAS, MINEDYS\*; MONTAÑEZ, ILEANA; MOCTEZUMA, YESENIA. Industrial Chemistry Department, UPR Humacao. **Study of the structural integrity of subtilisin Carlsberg suspended in organic solvents.**

3:20

CORDERO, ROCIO\*; CARRASQUILLO, KAREN; PEREZ, PEDRO; GRIEBENOW, KAI. Chemistry Department, UPR Rio Piedras. **Structure-guided formulation of proteins for sustained-release.**

3:40

MCBURNEY, EDWARD\*; VIDAL, MICHAEL; GRIEBENOW, KAI. Chemistry Department, UPR Rio Piedras. **Indirect measurement of enzyme mobility in organic solvents.**

4:00

DIAZ, KARILUZ; ALEJANDRO, ADRIANA; GONZALEZ, PABLO. MORALES, REGINALD Chemistry Department, UPR Rio Piedras. **Isolation and characterization of Type I secreted phospholipases A2 from *Naja naja sputatrix* and *Bothrops atrox* snake venoms.**

**SESSION:** Chemistry 07

**ROOM:** Q 125  
*Chairperson: Dr. Belinda Pastrana*

10:50

LORENZO, GERMAN\*. Chemistry Department, UPR Mayagüez. **Bacterial expression of *Chlamydomonas* centrin and its isolation.**

11:10

OCANA, WANDA\*; LORENZO VARGAS, GERMAN; SANCHEZ, LYNNETTE; PASTRANA, BELINDA Chemistry Department, UPR Mayagüez. **Purification and biochemical characterization of *Chlamydomonas* centrin from transformed *E. coli* BL21 Lambda DE3.**

11:30

ANTOMMATTEI PEREZ, FRANCES M.\*; ROSADO RUIZ, TANYA; COLLAZO, VANESSA; LOPEZ GARRIGA, JUAN Chemistry Department, UPR Mayagüez. CADILLA VAZQUEZ, CARMEN. Biochemistry Department, UPR Medical Sciences, Rio Piedras. **cDNA cloning and characterization of hemoglobin I from *Lucina pectinata*.**



*Lunch***SESSION:** Chemistry 07**ROOM:** Q 125**Chairperson:** Dr. Belinda Pastrana

1:20

MARTINEZ, SUSAN\*; MORENO, YALITZA; PASTRANA, BELINDA. Chemistry Department, UPR Mayagüez. Bacterial expression of wild type human centrin II.

1:40

HERNANDEZ, SAMUEL\*; NEGRON, VIVIAN; POINTER, GREGG; SALISBURY, J.L. PASTRANA, BELINDA. Chemistry Department, UPR Mayagüez. Site-directed mutagenesis and bacterial expression of human centrin II L171G/Y127G variant.

2:00

LEON, RUTH. G.\*; GONZALEZ, FERNANDO A.; COLON, JORGE; Chemistry Department, UPR Rio Piedras. Strategies for *Lucina pectinata* Hbl cDNA cloning.*Coffee-break*

2:40

TIRADO, YAMILET\*; GONZALEZ, PABLO; ALLENDE, DANIEL; MORALES, REGINALD. Chemistry Department, UPR Rio Piedras. Isolation and assay on red cell surfaces of Type I phospholipase from Formosan cobra venom.

3:00

RODRIGUEZ, DANIEL\*; ZAVALA, ZARIXIA; REYES GUZMAN, MANUEL; MORALES, REGINALD. Chemistry Department, UPR Rio Piedras. Heparin inhibition of phospholipase A2 from *Agkistrodon halys* snake venom.

3:20

RIOS, MICHELLE; PASTRANA, BELINDA. Chemistry Department, UPR Mayagüez. Concentration determination of *Chlamydomonas* centrin.

3:40

RAMOS, BRIAN\*; STEINER, JORGE R.; PASTRANA, BELINDA. Chemistry Department, UPR Mayagüez. *Chlamydomonas* centrin crystals for X-ray diffraction.**SESSION:** Chemistry 08**ROOM:** Q 152**Chairperson:** Dr. Cynthia Robledo

10:50

LINARES RIVERA, IVONNE\*; SOUTO, FERNANDO A.; DE JESUS, MARITZA. Departamento de Química, UPR Mayagüez. Variación en la composición química de los extractos de la raíz y la hoja de la planta *Lepianthes umbellatum* cultivada in vitro.

11:10

CARRERO COLON, MILITZA\*. Biology Department, UPR Mayagüez. APONTE, MARIA A. Chemistry Department, UPR Mayagüez. Nitration of poly(3-hydroxy-5-phenylvalerate) a polyester.

11:30

ARROYO, YASINIA\*; RODRIGUEZ, ABIMAEL. Chemistry Department, UPR Rio Piedras. 15-methoxyfuscol: a new lobane-type diterpene from *Eunicea fusca*.*Lunch*

**SESSION:** Chemistry 08

**ROOM:** Q 152  
*Chairperson: Dr. Luis Rivera*

1:20

HERNANDEZ, LUCAS\*; CARBALLEIRA, NESTOR M. Chemistry Department, UPR Rio Piedras. Isolation and characterization of compounds containing furan rings from *Persea americana* seed.

1:40

MEDINA, VILMARIE\*; RODRIGUEZ, ABIMAEL. Chemistry Department, UPR Rio Piedras. New elisabethane diterpenoids from *Pseudopterogorgia elisabethae*.

2:00

ARCELAY ROJAS, YITZA A.\*; SOUTO, FERNANDO A. DE JESUS, MARITZA Departamento de Quimica, UPR Mayagüez. Bioproducción de metabolitos secundarios típicos de la planta adulta mediante cultivo in vitro de *Lepianthes peltatum*.

*Coffee-break*

2:40

ORTIZ, ANA PATRICIA\*; APONTE, MARIA PhD Biology Department, UPR Mayague. Isolation and characterization of polymers produced by *P. oleovorans* when incubated in cultures with 5-(2,4-dinitrophenyl)valeric acid/ nonanoic acid.

3:00

RIVERA, JOCELYN\*; RODRIGUEZ, ABIMAEL. Chemistry Department, UPR-Rio Piedras. New polyhydroxydinostane sterols from the Caribbean gorgonian octocoral *Pseudopterogorgia americana*.

3:20

ROSARIO, MARIEM\*; GUADALUPE, ANA R. Chemistry Department, UPR Rio Piedras. Synthesis of block copolymers by tempo-initiated living free radical polymerization

3:40

BAEZ, NERIUSKA\*; RODRIGUEZ RODRIGUEZ, LOLITA; DE JESUS, MARITZA; SOUTO, FERNANDO. Departamento de Quimica, UPR Mayagüez. Tratamiento de la litiasis urinaria con plantas medicinales: composición y acción antilítica de Juana la Blanca (*Borreira laevis*).

**SESSION:** Chemistry 09

**ROOM:** Q 151  
*Chairperson: Dr. Aidalú Joubert*

10:50

GUZMAN, AIKOMARIE\*; EMILIANO, ANASTACIO; CABALLEIRA, NESTOR M. Chemistry Department, UPR Rio Piedras. Anovel fatty acid: 5,9-nonadecadienoic acid.

11:10

MORALES ANGEL\*; ABREU, YAMILKA; NEGRON, LISANDRA; PIÑERO, LUIS E.; GARCIA, CARMELO. Chemistry Department, UPR Humacao. Síntesis de fenotiazinas por inserción de nitrenos.

11:30

RODRIGUEZ CRUZ, KALEB E.\*; RODRIGUEZ RODRIGUEZ, LOLITA; SOUTO, FERNANDO A. Chemistry Department, UPR Mayagüez. Tratamiento de litiasis urinaria con plantas medicinales: Composición y acción antilítica de la Cola de Caballo (*Equisetum arvense*).

*Lunch*

**SESSION:** Chemistry 09

**ROOM:** Q 151  
*Chairperson: Dr. Luis Morell*

1:20

RESTITUYO, JOSE A.\*; SOSTRE, ANTHONY; CARBALLEIRA, NESTOR M. Chemistry Department, UPR Rio Piedras. **Synthesis of racemic 9-methyl-10-hexadecenoic acid.**

1:40

SOUTO, FERNANDO; RODRIGUEZ RODRIGUEZ, LOLITA; MELENDEZ, REBECA\*Chemistry Department, UPR Mayagüez. **Tratamiento de la litiasis urinaria con plantas medicinales: composición y acción antilítica de arenaria (*Spergularia rubra* Pers.).**

2:00

PEREZ, NANIX\*; PARDO, WANDALAY; TORRES, NANCY; VIETA, RENE S. Chemistry Department UPR-Mayagüez. **Synthesis of N-acetylbenzoxazoline, N-acetylbenzoxazine, and N-acetylbenzoxazepine.**

*Coffee-break*

2:40

ORTIZ YOMADIS\*; PRIETO, JOSE A. Chemistry Department, UPR Rio Piedras. **Epoxide isomerization in protected alkenols.**

3:00

GARCIA, AHYRA L.\*Natural Sciences Department, UPR Cayey. WAGGLE, KEN Med Chem Department, Smithkline Beecham. SHAW, ANTONY N. Med Chem Department, Smithkline Beecham. **The synthesis of heterocyclic carboxylates as compounds of pharmaceutical interest.**

3:20

MUÑOZ, XAYMARIE; MARTINEZ, JOHANNA\*DAVILA, LARRY W.; FIGUEROA, RUTH; UFRET, MARIA DE LOURDES; ORTIZ MARCIALES, MARGARITA. Chemistry Department, UPR Humacao. **Synthesis of chiral primary amines**

3:40

HERNANDEZ RIVERA, JESUS I.\*; RODRIGUEZ RODRIGUEZ, LOLITA; DE JESUS, MARITZA; SOUTO, FERNANDO A.; Departamento de Quimica, UPR Mayagüez. **Tratamiento de la litiasis urinaria con plantas medicinales: Composición y acción antilítica de baquiña hembra (*Lepiantes peltatum*).**

**SESSION:** Chemistry 10

**ROOM:** Q 150  
*Chairperson: Dr. María Aponte*

10:50

JUSTO DE POMAR, JORGE C. SORDEQUIST, JOHN A.; SANTIAGO SALINAS, MARCELINA\*. Chemistry Department, UPR Rio Piedras. **Protection for aldehydes and ketones via triisopropylsilylhydrazine.**

11:10

QUIÑONES, LEMUEL; DE JESUS, MELVIN; ORTIZ MARCIALES, MARGARITA; FIGUEROA, DYLIANA; VAZQUEZ, LESLIE; MOCTEZUMA, BENJAMIN. Chemistry Department, UPR Humacao. **The alpha-alkylation of o-tert-butylidimethylsilyl ketoximes.**

11:30

FONT, JUAN PAUL\*; SANCHEZ, AMARYLIS; PRIETO, JOSE A. Chemistry Department, UPR Rio Piedras. **Trans/cis double bond isomerization in protected alkenols.**

*Lunch*

**SESSION: Chemistry 10****ROOM: Q 150**  
**Chairperson: Dr. René Vieta**

1:20

COLON, MARIELA\*; PRIETO, JOSE A. Chemistry Department, UPR RioPiedras. Iodoacetals via a new iodoketalization reaction.

1:40

HERNANDEZ TORRES, JESUS M.\*; ORTIZ MARCIALES, MARGARITA. Chemistry Department, UPR Humacao. The functionalization of o-tert-butyl dimethylsilyl oximes.

2:00

ESTRELLA JIMENEZ, MARIA E.\* KOCK MONTESINO, IVELIZ; DORDEQUIST, JOHN A. Chemistry Department, UPR Rio Piedras. Reductive cleavage of acetals using 9-borabicyclo[3.3.1]nonane.

*Coffee-break*

2:40

TORRES, MARIA\*; RIVERA, LUIS A. Chemistry Department, UPR Mayagüez. Study of the reactivity of triphenylphosphonium flourenylidene towards the Wittig olefination reaction with substituted benzaldehydes.

3:00

RODRIGUEZ, VALERIE\*; HERNANDEZ, WIGBERTO J.; COLON, JORGE; COX, OSVALDO Chemistry Department, UPR Rio Piedras. Study of different synthetic conditions in the condensation of nitroacetonitrile with 2-aminothiophenol to obtain novel heterocycle derivatives.

**SESSION: Chemistry 11****ROOM: Q 124**  
**Chairperson: Dr. Robert Ríos**

10:50

VELEZ, CARLOS; TORRES, REYMUNDO TORO, ALEJANDRO; MALDONADO, PATRICIA\*  
VELAZQUEZ, MARIA DEL C. Chemistry. PUCPR. BORRERO, KARLA Biology, PUCPR.  
Cytotoxicity and radiosensitization studies of potential bioreductive drugs using CHO cells.

11:10

MUÑIZ, JOSE\*. Departamento de Microbiología, UPR Mayagüez. ORTIZ, JULIO; MEDINA, NILKA;  
HERNANDEZ, SAMUEL Departamento de Química, UPR Mayagüez. CINTRON, KARLA.  
Colegio la Milagrosa. RIVERA, SASHARY. Colegio San Agustin. Estudio de la interacción de reactivos cancerígenos con DNA.

11:30

MENDEZ, AIDA N\*.; CADIZ, MAYRA; HERNANDEZ, SAMUEL P.; VEGA, CARMEN A.; Chemistry Department, UPR Mayagüez. Surface enhanced Raman scattering as a probe of anti-cancer.

*Lunch***SESSION: Chemistry 11****ROOM: Q 124**  
**Chairperson: Dr. Samuel Hernández**

1:20

RIVERA PORTALATIN, NILKA\*; ROSA, JOHANNA; BARRIENTOS, MARJORIE; GOENAGA, EDUARDO; HERNANDEZ, SAMUEL P. PhD Chemistry Department, UPR Mayagüez. Modification interactions of metal ion species with native DNA: a SERS investigation.

1:40

ROSARIO, BELINDA I.\*; SANTIAGO, GLYSSETTE; MORANT, JULIO; LOPEZ, MARCOS; VARGAS, ROMARIE; ALEGRIA, ANTONIO E. Departamento de Química, UPR Humacao Determinación de constantes de distribución membraba-amortiguador de nadtosemiquinonas

hidroxiladas usando resonancia de espin electrónico.

2:00

VELEZ CRUZ, RENIER\*; PASTRANA, BELINDA. Chemistry Department, UPR Mayagüez. FT-IR spectroscopy of a model peptide: Melittin.

*Coffee-break*

2:40

VEGA, JAVIER O.\*; PASTRANA, BELINDA; VERA, MARISOL; ROBLEDO, CYNTHIA. Chemistry Department, UPR Mayagüez. Molecular modeling studies of peptide analog and a dodecanucleotide.

3:00

SANCHEZ IRIZARRY, CHERYLL\*; CARRASQUILLO, KAREN G.; GRIEBENOW, KAI. Chemistry Department, UPR Rio Piedras. Structural preservation for g-chymotrypsin upon lyophilization.

**SESSION:**

**Computer Science 01**

**ROOM: CH 127**

**Chairperson: Dr. Heriberto Hernández**

1:40

VARGAS, IOMAR\*; ARZUAGA, EMMANUEL. Departamento de Ingenieria Electrica y Computadoras, UPR. Using virtual reality, 3D modeling and the WWW to explore power plants in Puerto Rico.

2:00

ROSARIO TORRES, SAMUEL\*. Mathematics Department, UPR Humacao. Un enfoque para el estudio de series temporales auto-similares.

2:20

RAMIREZ MORELL, JUAN ANTONIO\*. Departamento de Ingenieria Electrica y Computadoras, UPR. Experiences using Java to build interpreters.

*Coffee-break*

3:00

MOULIER, EDWIN\*. Mathematics Department, UPR Humacao. Predicción de tráfico de red en tiempo real.

3:20

LOPEZ, ALEXANDER\*. Information Systems, EDP College. Parallel procesing and query optimization.

3:40

GONZALEZ SANTIAGO, VIANESSE\*. Departamento de Matemáticas, UPR Humacao. Un método algebraico para predecir el tráfico de redes.

4:00

CRUZ APONTE, MAYTEE\*; SOTERO ESTEVA, JOSE. Departamento de Matematicas, UPR Humacao. Algoritmo genético aplicado a el tráfico de Internet.

**SESSION:**

**Education 01**

**ROOM: EE 228**

**Chairperson: Prof. Ivelisse Padilla**

1:20

AGUIRRECHEA, JAYDI\*; ORENGO-AVILÉS, MOISÉS. Física,UPR-Mayagüez. Enfoque constructivista en la enseñanza de la fuerza de fricción.

1:40

JI, ZHIQUIN\*; MONTES, INGRID. Chemistry Department, UPR Rio Piedras. Utilizing ferrocene

chemistry to merge concepts of Organic, Inorganic and Analytical Chemistry in the undergraduate laboratory experience.

2:00

MELENDEZ, MARGARITA\*; DIAZ, ZAIDA; MONTES, INGRID. Chemistry Department, UPR Rio Piedras. Systematic study of the Grignard reaction focused on the problem based learning approach.

*Coffee-break*

2:40

CENTENO JOSE ANTONIO; CERVERA, JOSE ANTONIO; MONTALVO ORTIZ, BRENDA\*. Departamento de Quimica, UPR Cayey. Modelo matemático de la combustión de una vela.

3:00

NEGRON, DAMARIS\*. Department of Physics and Electronics, UPR Humacao. Increasing the quality of the Physics and Technology programs at the UPR-Humacao by promoting gender diversity.

**SESSION:**

**Engineering 01**

**ROOM: CH 232**

**Chairperson: Dr. Benjamín Colucci**

11:10

GONZALEZ MARTINEZ, JUAN O\*; VAZQUEZ PEREZ, JULIO I.; PEÑA, GUIDO. Physics-Chemistry department UPR Arcibo. Diseño y construcción de equipos para medidores de fluidos.

11:30

RAWLS, CARMEN G.\* Civil Engineering Department, UPR Mayagüez. Analysis of construction claims process in the Río Piedras design/build contract.

11:50

MORALES MORALES, YADIRA E.\* Electrical and Computer Engineering Department, UPR Mayagüez. Flow measurement for the solar air conditioning system.

*Lunch*

**SESSION:**

**Engineering 01**

**ROOM: CH 232**

**Chairperson: Dr. Gerson Beauchamp**

1:40

GARCIA ALSINA, IVAN\*; SANTANA ACOSTA, EMILIO. Electronics, UPR Bayamon. Movil Robot Sonar System.

2:00

VIERA VERA, MICHELLE\*, RIVERA RIOS, ALEXIS H.; VARGAS GONZALEZ, IOMAR; CRUZ RIVERA, JOSE L. Computer Engineering Department, UPR Mayagüez. Image compression algorithms on a focal plane SIMD array.

2:20

LUGO BEAUCHAMP, WILFREDO E.\* CRUZ RIVERA, JOSE L. Computer Engineering Department, UPR Mayagüez. Hyper-spectral Imaging: object detection using SIMPIL architecture.

*Coffee-break*

3:00

MARCANO RIVERA, ABIGAIL\*; LUYANDA, FELIPE Civil Engineering Department, UPR Mayagüez. Quantitative evaluation of Urban Rail Transit Systems.

3:20

QUIÑONES MUÑOZ, NESTOR\*. Industrial Engineering Department, UPR Mayagüez. A non linear formulation for the Line Balancing Problem.

3:40

VEGA ANDUJAR, ROSIE\*; GONZALEZ BARRETO, DAVID R. Industrial Engineering Department, UPR Mayagüez. **Repeatability and reproducibility studies with multiple variables.**

4:00

VARGAS ARROYO FERNANDO\*; RIVERA SANTOS, JORGE. Departamento de Ingenieria Civil, UPR Mayagüez. **Effect of data variability and record length on the simple least squares criterion for parameter estimation of a conceptual rainfall-runoff model.**

**SESSION:****Engineering 02****ROOM: CH 231****Chairperson: Dr. José Colóm**

11:10

ORTIZ, EDUARDO\*. Engineering, UPR Mayagüez. **Anti-Slip/Slide break control system for Tren Urbano.**

11:30

CABRERA, JUAN; BEAUCHAMP, GERSON. Engineering Department, UPR Mayagüez. **Data acquisition system for the solar air conditioning system.**

11:50

CORREA ELIAS, LUIS R\*.; TORRES TORRES, RUBEN; SANCHEZ RIOS, ISMAEL. Departamento de Electronica, UPR Bayamon. **Sistema interactivo de control utilizando puertos de PC.**

*Lunch***SESSION:****Engineering 02****ROOM: CH 231****Chairperson: Dr. Roque Román**

1:40

MARTINEZ VEGA, JOEL A.\*; PEREZ BERENGUER, JOSE L.; Civil Engineering Department, UPR Mayagüez. **Analysis of intermodals transfer facilities for some stations of the Tren Urbano.**

2:00

MALDONADO, GUSTAVO; LOPEZ, RICARDO, SUAREZ LOPEZ, VAZQUEZ TORRES, DRIANFEL.\* ; DUEÑO, ANTONIO. Civil Engineering Department, UPR Mayagüez. **Detection of damage in experimental and analytical concrete beams using modal testing.**

2:20

AVILES HERNANDEZ, VICTOR.\* Civil Engineering Department, UPR Mayagüez. **Analysis of Incentives/Disincentives clauses in the KKZ/CMA contract.**

*Coffee-break*

3:00

ORTIZ SOTO, MARIA\*. ROMAN SEDA, ROQUE A. Civil Engineering Department, UPR Mayagüez. **Appropriate Technology: a water purification plant for a rural water supply system in Puerto Rico - Part II - Field evaluation of a horizontal gravel prefilter.**

3:20

RODRIGUEZ, DIANA; ESTEVEZ, JUAN; RODRIGUEZ, RAFAEL\*; VELAZQUEZ, CARLOS; ESTEVEZ, LUIS A. Chemical Engineering Department, UPR Mayagüez. **An experimental technique to measure axial dispersion in bubble columns.**

3:40

VELEZ GARCIA, GREGORIO M.\* COLON, ASTRID; RIVERA, PATRICIA; RAMIREZ, CARLOS A. Chemical Engineering Department, UPR Mayagüez. **Effect of membrane fouling with bovine serum albumin on transport in the intravascular hybrid artificial pancreas.**

4:00

TORRES TORRES, JESSICA\*. COLUCCI RIOS, JOSE A. LIZARAZO ADARME, JAIR. Chemical Engineering Department, UPR Mayagüez. **Evaluation of energy production alternatives for**

the disposal of used cooking oils.

**SESSION:**                      **Engineering**                      **03**                      **ROOM:**                      **CH 230**  
**Chairperson:** *Prof. Zoraida Vázquez*

11:10

MENDEZ, JULIO\*; GODOY, LUIS. Civil Engineering Department, UPR Mayagüez. Evaluation of damage in steel tanks due to Hurricanes.

11:30

MONTALVO TORRES, TOMAS\*; MALDONADO, GUSTAVO. Civil Engineering Department, UPR Mayagüez. Model of damages in a steel-frame structure due to Hurricane winds.

11:50

LOPEZ BOBONIS, SANDRA\*; GODOY, LUIS A. Department of Civil Engineering, UPR Mayagüez. Stress redistributions in elastic structural components strengthened with externally bonded fiber composite sheets.

*Lunch*

**SESSION:**                      **Engineering**                      **03**                      **ROOM:**                      **CH 230**  
**Chairperson:** *Dr. Ricardo López*

1:40

LOPEZ, LIZA\*; SANCHEZ, MANUEL; CARDONA MARTINEZ, NELSON. Chemical Engineering Department, UPR Mayagüez. Synthesis of titania mesoporous molecular sieves for treatment of toluene-contaminated air.

2:00

DIAZ RIVERA, RUBEN E.\* Mechanical Engineering Department, UPR Mayagüez. Passive thermal optimization for a single zone building in the Caribbean.

2:20

IRRIZARRY ORTEGA, VIVIAN E.; CASASUS ZAMBRANA, ANA I.\*; PEREZ GARCIA, NELLIANN; CARDONA MARTINEZ, NELSON; RIVERA, LYDIA. Chemical Engineering Department, UPR Mayagüez. Photocatalytic disinfection of indoor air and plant pathogens.

*Coffee-break*

3:00

ORTIZ, VICTOR HUGO\*. Electrical Engineering Department, UPR Mayagüez. Linealización exacta, control y estabilización mediante retroalimentación de un sistema de levitación electromagnética.

3:20

PEREZ FELICIANO, DAVID\*. Electrical Engineering Department, UPR Mayagüez. HOY, SCOTT D. Microelectronics and Signal Processing Branch, Goddard Space. Discrete type implementation of a BPSK modulator and demodulator.

3:40

BORGES, ALEXANDER; LOPEZ, RICARDO; ZAPATA, RAUL; GODOY, LUIS A. Civil Engineering Department, UPR Mayagüez. Buckling of storm shutters under impact.

4:00

MUÑOZ, JORGE O.\* SANCHEZ, MANUEL F.; CARDONA MARTINEZ, NELSON; Chemical Engineering Department, UPR Mayagüez. Synthesis of titania-silica xerogels for photocatalytic gas phase detoxification.



**SESSION:**                      **Engineering**                      **04**                      **ROOM:**                      **CH 224**  
**Chairperson:** *Dr. David González*

11:10  
 AZOR, MARIA A.\*; SEPULVEDA, ARIEL. Industrial Engineering Department, UPR Mayagüez. **Predictive study on the duration of Puertoricans life.**

11:30  
 COLON TORRES, RAFAEL O.\* ; RAMIREZ BELTRAN, NAZARIO D. Industrial Engineering Department, UPR Mayagüez. **Experimental design to optimize a manufacture process.**

11:50  
 MONROY, HECTOR\*; GODOY, LUIS. Departamento de Ingenieria Civil, UPR Mayagüez. **Simulación computacional de la redistribución de esfuerzos en placas elásticas con interacción de agujeros.**

*Lunch*

**SESSION:**                      **Engineering**                      **04**                      **ROOM:**                      **CH 224**  
**Chairperson:** *Dr. Manuel Pérez*

1:40  
 CARDONA, MICHELLE\*; MACHADO, ILEANA; RODRIGUEZ, NELSON. Chemical Engineering Department, UPR Mayagüez. **Determination of mass transfer coefficients for copper removal from wastewater using hollow - fiber liquid membranes.**

2:00  
 DELGADO CRUZ, EDNA I.; ORTIZ ORTIZ, LORNA B.\*; CARDONA MARTINEZ, NELSON. Chemical Engineering Department, UPR Mayagüez. **Photocatalytic gas phase detoxification: bench-scale studies.**

2:20  
 OLIVAREZ, LUIS\*; RAMIREZ, NAZARIO. Industrial Engineering Department, UPR Mayagüez. **Drug shelf life estimation using clustering techniques.**

*Coffee-break*

3:00  
 ARROYO, JOSE RAMON\*. Civil Engineering Department, UPR Mayagüez. **Applications of the Volterra series to the analysis of nonlinear layered soil deposits.**

3:20  
 TORRES, AGATHA; RODRIGUEZ, DOMINGO. Electrical and Computer Engineering Department, UPR Mayagüez. **A MATLAB environment for the software evaluation of image filtering algorithms.**

3:40  
 RODRIGUEZ, HARRY\*. RAMIREZ BELTRAN, NAZARIO, LAKSHMI, SDRIHAR N. Chemical Engineering Department, UPR Mayagüez. **A non-linear model to estimate chemical interaction coefficients abstract.**

4:00  
 MONTALVO TORRES, TOMAS\*. SUAREZ COLCHE, LUIS E. Civil Engineering Department, UPR Mayagüez. **Finite element asesment of ground-borne vibrations caused by subway trains.**

**SESSION:**                      **Engineering**                      **05**                      **ROOM:**                      **CH 223**  
**Chairperson:** *Dr. Sandra Cruz*

11:10

COLL, MANUEL\*; LOPEZ, RICARDO R. SAIIDI, M. "SAIID". Civil Engineering Department, UPR Mayagüez. **Importance of stiffness and mass eccentricities on the non-linear response of R/C frame buildings.**

11:30

RAMIREZ ESCALANTE, JOSE DE JESUS\*; Chemistry Department, UPR Mayagüez; RAMIREZ BELTRAN, NAZARIO. Industrial Engineering Department, UPR Mayagüez. **Neural networks to minimize disposal costs.**

11:50

DURAND, HUGO; INIGO, EMIGDIO; RODRIGUEZ SOLIS, RAFAEL; COLOM USTARIZ, JOSE. Electrical Engineering, UPR Mayagüez. **Passive bias networks for microwave amplifiers.**

*Lunch*

**SESSION:**                      **Engineering**                      **05**                      **ROOM:**                      **CH 223**  
**Chairperson:** *Dr. Rafael Rodríguez*

1:40

RODRIGUEZ SANCTIAGO, DAWIN\*; LOPEZ, FRANCHESKA; VEGA, JUAN; SANCHEZ, ANGEL; SANTIAGO, AGAPITO; SANTIAGO, ENRIQUE Mechanical Engineering, Turabo University; **Mini Baja Vehicle Design.**

2:00

RODRIGUEZ, MARITZA\*; RODRIGUEZ, DOMINGO. Electrical and Computer Engineering Department, UPR Mayagüez. **Java based tool environment for automatic multidimensional FFT code generation.**

2:20

RIVERA ORTIZ, DAMARY\*, BARTOLOMEI SUAREZ, SONIA M. Industrial Engineering Department, UPR Mayagüez. **Determining the personnel scheduling for the Tren Urbano.**

*Coffee-break*

3:00

GALLETTI, ARTURO\*. Dept. of Electrical Engineering, Universidad del Turabo. **Quickly changing technology paradigms & the problems they represent to today's engineer.**

3:20

OLMO, GABRIEL\*; TERC, HENRY A.: SALICETI, LORENZO. Chemical Engineering Department, UPR Mayagüez. NIEVES, RAFAEL; HIMMEL, MIKE; DECKER, STEVE. National Renewable Energy Laboratory-Denver, Colorado. **Development of a microassay for quantitation of cellulolytic activity.**

3:40

SANTANA GARCIA, VICTOR\*; VELAZQUEZ, NESTOR. Procesos Quimicos Industriales, UPR Arcibo. **Construcción de equipo de laboratorio: construcción de secador de bandeja.**

4:00

RIVERA, PATRICIA\*; VELEZ GARCIA, GREGORIO M.; RAMIREZ, CARLOS A. Chemical Engineering Department, UPR Mayagüez. **Characterization of static adsorption of bovine serum albumin on the hollow fiber membrane used in the Hybrid Artificial Pancreas Device.**

**SESSION:**                      **Engineering**                      **06**                      **ROOM:**                      **CH 222**  
**Chairperson:** *Dr. Nelson Cardona*

11:10  
 MENDOZA ZAYAS, NAHIR\*; IRIZARRY, NELSON. Civil Engineering Department, UPR Mayagüez.  
**Traffic calming: a study of it's application to the Tren Urbano.**

11:30  
 GOYCO DE VERA, LIBBY J.\*; COLUCCI RAMOS, BENJAMIN. Civil Engineering Department, UPR  
 Mayagüez. **Methodology fot the development of marketing strategies for the Tren Urbano,**

11:50  
 BARRETO ACOBE, CLARY D.\*; IRIZARRY, NELSON. Civil Engineering Department, UPR Mayagüez.  
**Design of Park and Ride Facilities for Tren Urbano Stations.**

*Lunch*

**SESSION:**                      **Engineering**                      **06**                      **ROOM:**                      **CH 222**  
**Chairperson:** *Dr. Sonia Bartolomei*

1:40  
 SOTO, GILBERTO\*; ESTEVEZ, L. ANTONIO; VELAZQUEZ, CARLOS. Chemical Engineering  
 Department, UPR Mayagüez. **Removal of ethanol from industrial wasterwater using bubble  
 column.**

2:00  
 ORTIZ SOTO, MARIA\*; ROMAN SEDA, ROQUE A. Civil Engineering Department, UPR Mayagüez.  
**Appropriate Technology: a water purification plant for a rural water supply system in  
 Puerto Rico - Part I - An overview.**

2:20  
 PIZARRO CRESPO, MARCOS\*; CARDONA MARTINEZ, NELSON. Chemical Engineering Department,  
 UPR Mayagüez. **Adsorption microcalorimetric study of TiO<sub>2</sub>, SiO<sup>-2</sup>-TiO<sub>2</sub>, and Al<sub>2</sub>O<sub>3</sub>-TiO<sub>2</sub>.**

*Coffee-break*

3:00  
 VAZQUEZ ACEVEDO, JOHANNA\*; CARDONA MARTINEZ, NELSON. Chemical Engineering  
 Department, UPR Mayagüez. **Solar photocatalytic detoxification of air: effect of reactor flow  
 pattern.**

3:20  
 ACEVEDO, RICARDO\*; GONZALEZ, JORGE E. Mechanical Engineering Department, UPR Mayagüez.  
**Stratification manifolds for thermal storage tanks in high temperatures applications.**

3:40  
 GONZÁLEZ, MARIAM\*; COLON, OLGA L.; RAMIREZ, CARLOS A. Chemical Engineering Department,  
 UPR Mayagüez. **Glucose transport resistance of glass beads seeded in the annular space  
 of the Hybrid Artificial Pancreas Device.**

4:00  
 SANCHEZ ORTIZ, ANGEL L.\* Mechanical Engineering, Turabo University. **Solar radiation,  
 psychrometrics and wind monitoring study in Puerto Rico.**

**SESSION:**                      **Engineering**                      **07**                      **ROOM:**                      **CH 234**  
**Chairperson:** *Prof. Héctor Areizaga*

11:10  
 GALARZA, LIZMAYRI\* Chemical Engineering Department, UPR Mayagüez. **Extraction of**

**phenylalanine and L-leucine using Hollow Fiber Membranes.**

11:30

CARRILLO, RUBEN\*; ESTEVEZ, L. ANTONIO; VELAZQUEZ, CARLOS. Chemical engineering Department, UPR Mayagüez. **Removal of methanol from industrial wastewater using bubble column.**

11:50

RAMOS CARDONA, JAVIER\* Civil Engineering Department, UPR Mayagüez. **Appropriate Technology: a water purification plant for a rural water supply system in Puerto Rico - Part III - Field evaluation of a slow sand filter.**

*Lunch***SESSION:****Engineering 07****ROOM: CH 234****Chairperson: Prof. María Guntín**

1:40

PUJOLS, SERGIO S.\*; TOLEDO, GUSTAVO A. Mechanical Engineering, University of Puerto Rico - Mayagüez. **Transportation options of finished vehicles.**

2:00

RIVERA, HEINER\*. Mechanical Engineering, Turabo University. **Better handling of small hovercrafts.**

2:20

MONTALVO TORRES, TOMAS\*; VALDEZ, DIDIER. Civil Engineering Department, UPR Mayagüez. **Integrated arterial and freeway operation control strategies for ITS advanced traffic management systems.**

*Coffee-break*

3:00

RIVERA, SHARON D.\* Chemical Engineering Department, UPR Mayagüez. APONTE, MARIA A. Chemistry Department, UPR Mayagüez. RAMIREZ, CARLOS A. Chemical Engineering Department, UPR Mayagüez. **Linear polyanhydride supports for the controlled release of peptides and proteins.**

3:20

GILBERTO CUBERO DEL TORO\*. Turabo University, School of Engineering. **CROCKBOT project.**

**SESSION:****Environmental Sciences 01****ROOM: CH 233****Chairperson: Prof. Maritza de Jesús**

11:10

SANTIAGO, ABIGAIL\* Environmental Sciences, UPR-Río Piedras. LARSEN, MATTHEW C. U.S. Geological Survey, GSA Center, 651 Federal Blvd. Guaynabo. **Frequency and distribution analysis of recent landslides in the northern section of the Cayaguás watershed, San Lorenzo, Puerto Rico.**

11:30

RIVERA, NAOMI. Biology Department, UPR Río Piedras. GALDON, IRAIDA\* Environmental Sciences Department, UPR Río Piedras. RODRIGUEZ, ROBERTO; TORANZOS, GARY. Biology Department, UPR Río Piedras. **Degradación de gHexaclorociclohexano (lindano) por microorganismos de suelos tropicales.**

11:50

RODRIGUEZ PEREZ, JOSE A.\*; ROMERO PEREZ, LIZBETH. Biology Department, UPR Arcibo. MENDEZ, ABEL. Physics and Chemistry Department, UPR Arcibo. **Astrobiology research in Planetary Microbial Ecology: the growth dynamics of microorganisms under the planet Mars near-surface environment.**

*Lunch*

**SESSION:** Environmental Sciences 01

**ROOM:** CH 233

*Chairperson: Prof. Maritza de Jesús*

1:40

PEÑA GOMEZ, ORLANDO\*. Departamento de Ciencias Generales, PUCPR. El Observatorio de Arecibo y la salud de los residentes del barrio Esperanza: estudio de las posibles enfermedades relacionadas con la radiación.

2:00

RIVERA, CARLOS M.\*; MORALES, MARCOS. Pontificia Universidad Católica Ponce. Estudio químico y bacteriológico del Lago Cerrillos en Ponce.

2:20

PEÑA, GUIDO; ALVAREZ DEIDA, JANNICE\*; SAHUDY OCASIO FRANQUI. Physics and Chemistry Department, UPR Arecibo. Physical, chemical, and biological research at Río Grande de Arecibo.

*Coffee-break*

3:00

GOMEZ, VICENTE\*; RODRIGUEZ, YELITZA; TORANZOS, GARY A. Biology Department, UPR Río Piedras. Screening of PCB-degrading organisms in San José lagoon sediments.

3:20

GAETAN, DIANA; IRIZARRY, JOMARY\*; MUÑIZ, ELIAS; RAMOS, MAIELLA. Physics and Chemistry Department, UPR - Arecibo. *Eichhornia crassipes* as a biological indicator for monitoring trace elements.

3:40

ORTIZ MARIVI\*; BESANTES, S.P.; WEIS, P.; FERRARIS, R.P. Chemistry Department, UPR Cayey. Characterization of the norepinephrine transporter in *Xenopus laevis* oocytes and its stimulation by coexpression.

**SESSION:** Geosciences 01

**ROOM:** CH 233

*Chairperson: Dr. Allan Smith*

1:40

BOLET, CARILUZ\*; CRUZ-POL, SANDRA. Electrical and Computer Engineering, UPR Mayagüez. Design of an experiment for the calibration of the sea surface emissivity model around 22GHz.

2:00

GREGORY, MICHAEL\*. Geology Department, UPR Mayagüez. A core analysis of sedimentary deposits near the mouth of Yauco's Loco river in Guánica, Puerto Rico.

2:20

DETRES, YASMÍN; SASTRE CORDOVA, MARCOS M.\*; GILBES, FERNANDO; ARMSTRONG, ROY. Marine Science Department, UPR Mayagüez. Remote sensing of the Eastern Caribbean: an approach to estimate phytoplankton productivity from optical data using SeaWiFS (Sea Viewing Wide Field-of-View Sensor).

*Coffee-break*

3:00

MERLE JOHNSON, DOMINIQUE\*; MATIAS IZQUIERDO, AUDELIZ; RODRIGUEZ IGLESIAS, LIZETTE A.; JARAMILLO NIEVES, LORNA G.; QUINONEZ PADOVANI, ERNESTO; SMITH, ALAN L.; SCHELLEKENS, JOHANNES H. Geology Department, UPR Mayagüez. Stratigraphy of a major Plinian eruption from the Quill volcano, St. Eustatius, Lesser Antilles.

3:20

HERNANDEZ CASTRO, WILNELIA\*; CORTES SANTANA, AMARILYS; RAMOS, ELIO. Departamento de Matemáticas, UPR Humacao. Estudio de las Series Temporales de Flujo de Rios en Puerto Rico.

**SESSION:** Life Sciences 01

**ROOM:** EE 229

*Chairperson: Mrs. Iris Vázquez*

10:50

VÁZQUEZ-TORRES, RAFAEL\*; RODRÍGUEZ-DURÁN, ARMANDO. Departamento de Ciencias Naturales, Universidad Interamericana de Puerto Rico, Recinto de Bayamón. Ecología alimentaria del murciélago frutero *Artibeus jamaicensis*.

11:10

ARCHILLA-DÍAZ, LARISSA\*; PÉREZ-JIMENEZ JOSÉ; RODRÍGUEZ-DURÁN, ARMANDO. Natural Sciences Department, Inter American University of Puerto Rico, Bayamón Campus. Bats microorganisms: a mouthfull.

11:30

RODRIGUEZ, IVELISSE\*. Depto. Ciencias Naturales, IAU Metropolitana. ACEVEDO, MANUEL JOSE. Geología, CAROMA, Inc. CAMACHO, RAQUEL. Antropología, CAROMA, Inc. RODRIGUEZ, GUSTAVO ADOLFO. Ecología, CAROMA, Inc. Caracterización geológica, arqueológica y bio-ecológica de Cueva Matos, Arecibo, Puerto Rico.

*Lunch*

**SESSION:** Life Sciences 01

**ROOM:** EE 229

*Chairperson: Ms. Sary Otero*

1:20

CRUZ CARLOS A.\*; RICHART, CARLOS M. Departamento de Biología, PUCPR. Análisis de preferencias alimentarias de algunas aves de Puerto Rico utilizando técnicas de ordenamiento.

1:40

LEON, ABIMAE L.\*; AYALA, VICTOR; JOGLAR, RAFAEL L. Biology Department, UPR Rio Piedras. Some aspects of the biology of the Puerto Rican fresh water turtle, *Trachemys stejnegeri stejnegeri*.

2:00

RIVERA, RUTH\*; MOJICA, JOSE M.; BRUCK, DAVID L. Biology Department, UPR Rio Piedras. Intra and interspecific copulation time in the *dunni* subgroup.

*Coffee-break*

2:40

VILLANUEVA RIVERA, LUIS J.\* Biology Department, UPR Rio Piedras. some aspects of the biology of two lowland Puerto Rican frogs: *Eleutherodactylus coqui* and *E. cochraeae*.

3:00

PEREZ REYES, IRAIDA; PEÑA, GUIDO; RODRIGUEZ TORRES, GLENDA\*. UPR Arecibo. Biology and ecology of *Sicydium plumieri* in the Río Grande of Arecibo.

3:20

CARRASQUILLO-CASADO, BANGESY\*; CARDONA-MALDONADO, MARÍA A. Biología, UPR, Rio Piedras. ALSINA-GUERRERO, MAYELA. Ciencias Marinas, Long Island University, New York. MIGNUCCI-GIANNONI, ANTONIO A. Ciencias y Tecnología, UMET. A stingray spine as a mortality factor in a bottlenose dolphin from Puerto Rico.

3:40

PÉREZ-ZAYAS, JOSE J.\*; MIGNUCCI-GIANNONI, ANTONIO A. Departamento de Ciencias y Tecnología, Universidad Metropolitana. **A cookiecutter shark wound on a stranded goosebeak whale in Puerto Rico.**

**SESSION: Life Sciences 02**

**ROOM: EE 230**

**Chairperson: Prof. Marcos de Jesús**

10:50

RODRIGUEZ-LOPEZ, MARTA A.\*; MIGNUCCI-GIANNONI, A. A. Departamento de Ciencias y Tecnología y Proyecto MIE, Universidad Metropolitana. **Estatus del delfin moteado del Atlántico en el Caribe nor-oriental.**

11:10

CARDONA-MALDONADO, María A.\* Programa McNair y Programa AMP, Universidad de Puerto Rico. MIGNUCCI-GIANNONI, A.A. Departamento de Ciencias y Tecnología y Proyecto MIE, Universidad Metropolitana. **Estatus de los cachalotes pigmeo y enano (*Kogia* spp.) en el Caribe.**

11:30

ROSARIO-DELESTRE, R. J.\* Departamento de Biología, Universidad Interamericana, San Juan. MIGNUCCI-GIANNONI, A. A. Departamento de Ciencias y Tecnología y Proyecto MIE. **Nuevos informes de ballenas hocicudas (*Mesoplodon* spp.) para el Caribe.**

**Lunch**

**SESSION: Life Sciences 02**

**ROOM: EE 230**

**Chairperson: Prof. Lolita Rodríguez**

1:20

ANDRADE, DEBORAH A.\* Depto. Biología, UPR-Humacao. **La cantidad de semillas y su relación a la abundancia de la especie *Lepanthes*.**

1:40

MARTINEZ RIVERA, CARLOS CESAR\*; BRECKON, GARY J. Biology Department, UPR Mayagüez. **Seed dispersal by iguanas in the Caribbean.**

2:00

LOPEZ, MELISSA\*; TREMBLAY, RAYMOND L. Biology Department, UPR Humacao. **Diferencias morfológicas entre *Lepanthes woodburyana* y *Lepanthes velezi*.**

**Coffee-break**

2:40

CHAMORRO RIVERA, MARIANNE\*. Departamento de Biología, PUCPR. **Interacción entre helicónidos y pasifloras.**

3:00

CAMACHO, EDWIN\*; TREMBLAY, RAYMOND L. Biology Department, UPR Humacao. **Crecimiento poblacional en *Lepanthes eltoroensis* (Orquidiaceae).**

3:20

GARCIA, ALBERTO\*; ALVAREZ, MIGDALIA; GONZALEZ, GERARDO; RODRIGUEZ, SHARON L.; ROSARIO, LIDIALY; PEREZ, JUAN. Departamento de Biología, UPR Ponce. **Respuesta temporal a tensores antropogénicos y al huracán Georges en un pantano arbóreo.**

3:40

ARGUELLO LOPEZ, ANA M.\*; LOPEZ, JUAN PABLO; DAVILA LOPEZ, EVA N. Departamento de Ciencias y Tecnología, UMET. **Cycadophyta de Puerto Rico, plantas primitivas del**

## Paleozoico.

**SESSION: Life Sciences 03****ROOM: EE 231**  
**Chairperson: Prof. Anita Acevedo**

1:20

BAEZ, KEYLA\*; BRUCK, DAVID L.; MOJICA, JOSE M. Biology Department, UPR Rio Piedras. Sexual isolation among four population of the *dunni* subgroup.

1:40

BARRETO-CHANG, ODMARA L.\*; WILLIAMS, LUCY. Biology Department, UPR Mayagüez. Genetic relationship among and between species of *Anilocra* (Crustacea: Isopoda) parasites of Caribbean coral reef fishes.

2:00

HEREDIA, CRISTINE\*; MCMILLAN, W. OWEN. Biology Department, UPR Rio Piedras. Contrasting patterns of mtDNA sequences and AFLP fingerprints in hamlets from Panama and Puerto Rico.

*Coffee-break*

2:40

ESTEVEZ MONTERO, MARCEL\*; MARTINEZ CRUZADO, JUAN C.; TORO LABRADOR, GLADYS; ORTIZ BERMUDEZ, PATRICIA. Biology Department, UPR Mayagüez. Identificación del DNA mitocondrial de origen indígena en la población en puertorriqueños.

**SESSION: Life Sciences 04****ROOM: CH 218**  
**Chairperson: Prof. Iudai Rodríguez**

11:10

VÁZQUEZ-GUZMÁN, ELIZABET\*; PAGÁN-RIVERA, ZULMA. Natural Sciences Department, Inter American University of Puerto Rico. Studies of the nitrofurans effect on the PIP2 signal transduction pathway using the a rat anterior pituitary cell line.

11:30

DE JESUS MONGE, WILFREDO; PUIG-RAMOS, ANABEL\*; ALVAREZ-TORRES, NITZA; GARCIA CASTRO, IVETTE. Department of Biology, University of Puerto Rico at Río Piedras. Autocrine Motility Factor (AMF) in various human melanoma cell lines.

11:50

HERNANDEZ, CARMEN J.; CHINAPEN, SANDRA; BERRIOS, ARELIS\*; CONDE, MARITZA; VAZQUEZ, YINARY; RIVERA, DENNIS. Biology Department, UPR Humacao. Localization of substance P and choline.

*Lunch***SESSION: Life Sciences 04****ROOM: CH 218**  
**Chairperson: Dr. Nanette Diffoot**

1:40

DE JESUS RICHARD\*. Chemistry Department, PUCPR. PATTERSON, RONALD. Microbiology Department, PUCPR. Regulated export of RNA and proteins from isolated mammalian nuclei.

2:00

OTERO, JOEL\*; DIFFOOT, NANNETTE; ARROYO, NANCY. Biology Department, UPR Mayagüez.



**Possible role of the unique A/T rich nucleotide sequence of parvovirus Lull1 as an autonomously replicating sequence.**

2:20

NEGRON, VIVIAN\*. Chemistry Department, UPR Mayagüez. POYNTER, G.; SALISBURY, J.L. Mayo Clinic and Foundation, Dept. of Biochemistry and Molecular Biology. PASTRANA, B. Chemistry Department, UPR Mayagüez. **Mutations of human centrin II.**

*Coffee-break*

3:00

GARCIA, ZULMA I.\* Chemistry Department, UPR Cayey. ERICKSON, R.L.; HEMATI, N.; MACDOUGALD, O.A. Department of Physiology, University of Michigan. **Molecular cloning of CCAAT/enhancer protein a deletion mutants.**

3:20

MARTINEZ MALDONADO, JOEL E.\*; GARCIA ARRARAS, JOSE E.; ROIG LOPEZ, JOSE L.; SANTIAGO, PEDRO. Departamento de Biología, UPR Rio Piedras. **Identificación y caracterización de cDNA para metaloproteasas de matriz extracelular durante la regeneración del intestino en *Holothuria glaberrima*.**

3:40

DELGADO OCASIO, SHARON\*; ACEVEDO SUAREZ, CARLOS A.; DIFFOOT CARLO, NANETTE. Biology Department, UPR Mayagüez. **Construction of a mutated clone of parvovirus Lull1 containing the termini of Minute Virus of Mice (MVM) to study its role in progeny encapsidation.**

4:00

FRONTANES HEREDIA, ABYMAEL; GARCIA ARRARAS, JOSE E. Biology Department, UPR Rio Piedras. **Detección de colágeno y ácido hialurónico en el pepino de mar *Holothuria glaberrima* durante la regeneración del intestino.**

**SESSION: Life Sciences 05**

**ROOM: CH 219**

**Chairperson: Dr. Arturo Massol**

11:10

RODRIGUEZ, JAIME L.\* Departamento de Biología, UPR Ponce. MONTEALEGRE, FEDERICO; FLORES CALDERA, IDHALIZ. Departamento de Microbiología, Escuela de Medicina de Ponce. **Caracterización molecular de alérgenos de ácaros.**

11:30

MEDINA, BIOMARIS\*. Biology Department, UPR Humacao. MULLER, RAFAEL Physics and Electronics Department, UPR Humacao. FUENTES, FRANCISCO; VELEZ, VERONICA. Biology Department, UPR Humacao. GALAFA, AIDYL. Physics and Electronics Department, UPR Humacao. DEYNES, JANICE. Biology Department, UPR Humacao. **Precision measurements of size using a CCD camera coupled to a bright field compound microscope.**

11:50

NEGRON GARCIA, JOSE O.; RIVERA REYES, BRENDA M.\*; MASSOL DEYA, ARTURO. Biology Department, UPR Mayagüez. **Genome plasticity of soil bacteria under carbon deficient conditions.**

*Lunch*

**SESSION: Life Sciences 05**

**ROOM: CH 219**

**Chairperson: Dr. María Vargas**

1:40

FUENTES FRANCISCO. Biology Department, UPR Humacao. MULLER, RAFAEL. Department of Physics and Electronics, UPR Humacao. DEYNES MERCADO YANICE L.\*; MEDINA,

BIOMARIS; VELEZ, VERONICA. Biology Department, UPR Humacao. GALAFA, AYDIL. Physics Department, UPR Humacao. Precision measurements of size using a CCD camera coupled to a bright field compound microscope (II).

2:00

VELEZ, SORIMAR\*; PEREZ-JIMENEZ, JOSE. Department of Natural Science, Inter American University of Puerto Rico, Bayamón Campus. Marine microbiota in temperate and tropical environments.

2:20

RIVERA, ARACELYS\*; SANTOS, LILVETTE; CINTRON, ISABEL; FUENTES, FRANCISCO; BAERGA, CARMEN. Biology Department, UPR Humacao. Phenotypic characterization of Benzothiophene-resistant isolates.

*Coffee-break*

3:00

SOTO-CENTENO, JULIO ANGEL\*; RODRIGUEZ-DURAN, ARMANDO. Departamento de Ciencias Naturales, Universidad Interamericana de Puerto Rico, Bayamón. Estudio de la diversidad microbiana en la cueva de los Culebrones, Barrio Dominguitos, sector Mata de Plátano, Arecibo, Puerto Rico.

3:20

MERCADO, MARICELYS\*; BETANCOURT, CARLOS. Departamento de Biología, UPR Mayagüez. Estudio preliminar de degradación de cartón por hongos mitospóricos.

3:40

FUENTES FRANCISCO; VELEZ, VERONICA\*; MULLER, RAFAEL; GALAFA, AYDIL; MEDINA, BIOMARIS; DEYNES, YANICE. Biology Department, UPR Humacao. Precision measurements of size using a CCD camera coupled to a bright field, compound microscope (III).

4:00

NEGRON GARCIA, JOSE O.\*; RIVERA REYES, BRENDA M.; MASSOL DEYA, ARTURO. Biology Department, UPR Mayagüez. Genome plasticity of soil bacteria under nitrogen deficient conditions.

**SESSION:** Life Sciences 06

**ROOM:** CH 220

*Chairperson: Dr. Fernando Bird*

11:10

CANCEL RIVERA, SAMUEL\*; RODRIGUEZ BORRERO, ENRIQUE; RENAUD, FERNANDO. Departamento de Biología, UPR Río Piedras. Caracterización de una molécula similar a  $\beta$ -endorfina en *Tetrahymena thermophila*.

11:30

FERNANDEZ-SANTIAGO, ANTONIO\*; FILE, SHARON. Biology, Department, UPR Río Piedras. Detection of *Schistosoma* antigens in the urine as a noninvasive diagnostic test for active schistosome infections.

11:50

JAUME, AIXA\*; CHEVERE, ITZAMARIE; PEÑA, SANDRA. Departamento de Biología, UPR Río Piedras. El rol de los receptores opioides en el aprendizaje y en la inducción del mRNA de HZF-3.

*Lunch*

**SESSION:** Life Sciences 06

**ROOM:** CH 220

*Chairperson: Dr. Inés Sastre*

1:40

GONZALEZ-VELEZ, OLGA\*; FILE, SHARON. Biology Department, UPR Río Piedras. Qualitative

analysis of the carbohydrate content in the albimin gland of estivating and normal *Biomphalaria glabrata*.

2:00

HERAVI, JAVID. Department of Biochemistry, Wake Forest University. LOPEZ BLASINI, IVETTE\*. Chemistry Department, PUCPR. WAITE, MOSELEY. Department of Biochemistry, Wake Forest University. **Lysophosphatidylglycerol transacylase acyl specificity in the synthesis of sn-3:sn-1'Bis(monoacylglycero)phosphate.**

2:20

PADILLA, KATHERINE M.\*; FILE, SHARON. Biology Department, UPR Rio Piedras. **Study of polyzygosity in *Biomphalaria glabrata*.**

*Coffee-break*

3:20

LEAL-RODRIGUEZ, ZORAYA\*; VEGA RODRIGUEZ, ERNESTO; ROWE, CHRISTOPHER; FILE, SHARON. Biology Department, UPR Rio Piedras. **Oxygen consumption in *Biomphalaria glabrata*.**

3:40

DIAZ RODRIGUEZ, LIZ ADIANEZ; LEBRON RUIZ, FRANCES\*; USCIAN, JOHN. Biology Department, UPR-Mayagüez. **Characterization of trypsin-like activity from pyloric caeca of the red hind grouper, *Epinephelus guttatus*: considerations of use as an environmental indicator.**

4:00

MARTINEZ PRIETO, JUANA\*; FILE, SHARON. Biology Department, UPR Rio Piedras. **Do testosterone variations affect existing parasite infections in male rhesus macaques (*Macaca mulatta*)?**

**SESSION: Life Sciences 07**

**ROOM: CH 221**

**Chairperson: Dr. Jaime Acosta**

11:10

ORTIZ, ROBERTO; CESPEDES, WAYCA; NIEVES, LUZ\*; ROBLES, IRIS V.; PLAZAOLA, ADOLFO; CANDELAS, GRACIELA. Biology, UPR Rio Piedras. **Small ampullate glands of *Nephila clavipes*.**

11:30

TORO SIERA, RAFAEL\*; STEFFENS GUILLEN, JAVIER; GONZALEZ CUYAR, LUIS; CARRASCO SERRANO, CLARA E. Biology Department, UPR Ponce. **Characterization of *Anastrepha obliqua* at the molecular level: protein pattern of body parts and pteridine eye pigments.**

11:50

MUÑIZ, ZULEIMA\*; SERRANO YOLANDA. Natural Science Department, Inter American University of Puerto Rico. **Bacterial determination in scrub utensils used in five homes in Puerto Rico.**

*Lunch*

**SESSION: Life Sciences 07**

**ROOM: CH 221**

**Chairperson: Dr. Vivian Navas**

1:40

VERGARA GOMEZ, MARK A.\*; GARCIA ARRARAS, JOSE E. Biology Department, UPR Rio Piedras. **Bradykinin-like immunoreactivity in the tissues of the sea cucumber *Holothuria glaberrima*.**

2:00

QUIÑONES, LUIS\* Biology Department, UPR Rio Piedras. **Characterization of the migratory responses of human melanoma cell lines.**

2:20

CORTES SANTOS, HECTOR\*; VARELA ROHENA, ANGEL; RENAUD, FERNANDO. Departamento de Biología, UPR Rio Piedras. Efecto de morfina sobre la fagocitosis por monocitos humanos.

*Coffee-break*

3:00

CEDEÑO, ADA\*; PAGAN RIVERA, ZULMA. Natural Sciences Department, IAU Bayamon. Studies of the nitrofurans effects in cytotoxicity cell proliferation and calcium mobilization in bacteria cultures.

3:20

ORTA, LURMAG; VOLTAGGIO, LYSANDRA. Biology Department, UPR Rio Piedras. Tamoxifen and gamma linolenic acid suppress induced cell motility in human melanoma cells.

3:40

ROSADO, BRENDA\*; RIVERA-PAGAN, ZULMA. Natural Sciences Department, Inter American University of Puerto Rico, Bayamón Campus. Mode of action of nitrofurans as sperm immobilizing agent.

4:00

RIVERA FELICIANO, JOSE\*; NEGRON, VIVIAN. Biochemistry and Molecular Biology Department, UPR Mayagüez. POYNTER, GREGG; SALISBURY, J.L. Mayo Clinic and Foundation. Bacterial expression of variant T169A/S170A human centrin II protein.

4:20

CRUZ PEREZ, JULIO\*; RODRÍGUEZ RODRÍGUEZ, LOLITA; SOUTO, FERNANDO A. Departamento de Química, UPR Mayagüez. Tratamiento de litiasis urinaria con plantas medicinales: Composición y acción antilítica de una receta común de hierbas medicinales.

**SESSION: Mathematics 01**

**ROOM: CH 126**

*Chairperson: Dr. Julio Baretty*

11:10

CINTRON ARIAS, ARIEL\*. Mathematics Department, UPR Cayey. BARRERA RODRIGUEZ, CARLOS.; ESPINOZA LIMON ANGELINA. Mathematics, Universidad Autónoma Metropolitana, México. VARGAS BRACAMONTES, DULCE. Mathematics, Universidad de Colima, México. Estimation of the population vaccination effectiveness using urn models.

11:30

MUÑOZ ALICEA, ROBERTO\*. Mathematics Department, UPR Humacao. A mathematical model for *Mycobacterium tuberculosis*.

11:50

FRANCO GONZALES, SAUL R. University of California, Irvine. MENDEZ GOMEZ HUMARAN, IGNACIO. El Colegio de la Frontera Norte. ORTIZ ROSADO, RICARDO\*. Departamento de Matemáticas y Física, UPR Cayey. SANCHEZ ARAIZA, DANIEL. California State University, Dominguez Hills. The effect of purse seine vessel harvesting in the eastern tropical Pacific yellowfin tuna stock.

*Lunch*

**SESSION: Mathematics 01**

**ROOM: CH 126**

*Chairperson: Dr. Pablo Negrón*

1:40

ASTACIO RIVERA, JAIME\*. Mathematics Department, UPR Humacao. MORALES, DANIZA. UPR Cayey. SAUCEDA, JUAN R. Texas A&M International University. A Maple implementation of

the FGLM algorithm.

2:00

ASTACIO RIVERA, JAIME\*. Departamento de Matemáticas, UPR Humacao. Un algoritmo para decodificar códigos Reed-Solomon usando bases de Gröebner.

2:20

DE JESUS, JOEL\*. Departamento de Física, UPR Humacao. CACERES, ALBERTO. Departamento de Matemáticas, UPR Humacao. Decodificación de códigos cíclicos correctores de errores con diagramas de Venn.

*Coffee-break*

3:00

MALDONADO VEGA, TAMIL\*. Departamento de Matemáticas, UPR Humacao. Sobre la decodificación de códigos Reed-Solomon.

3:20

REYES GIL, KARLA R.\*; VENEZUELA MARTINEZ, OTONIEL. Departamento de Matemáticas, UPR Rio Piedras. Theoretical research regarding some sonar sequence constructions.

3:40

VENEZUELA MARTINEZ, OTONIEL\*; REYES GIL, KARLA. Mathematics Department, UPR Rio Piedras. Research about sonar sequences using computer algebra.

**SESSION: Mathematics 02**

**ROOM: CH 126**

*Chairperson: Dr. Jaime Seguel*

1:40

CASTRO SIMMONS, MÓNICA\*; MELENDEZ MORALES, JULIO D.; SRINIVASAN, ANITHA. Departamento de Matemáticas, UPR Humacao. El cálculo del regulador y su relación con el número de clase.

2:00

COLON REYES, OMAR\*; CACERES, ALBERTO. Departamento de Matemáticas, UPR Humacao. Permutation binomials over binary fields.

2:20

CRUZ-APONTE, MAYTEÉ\*; MORENO, CARLOS. Departamento de Matemáticas, UPR Humacao. ¿Cuán aleatorio es  $v^2$ ?

*Coffee-break*

3:00

NOVOA BARRAZA, ANALI. Texas A&M International University. MELENDEZ MORALES, JULIO D.\* Departamento de Matemáticas, UPR Humacao. OVERHISER, KURT. Brigham Young University. RODRIGUEZ, JESUS F. North Carolina State University. Sobre el número de ideales monomiales de un ideal.

3:20

ORTIZ NAVARRO, JUAN ARIEL\*. Mathematics, UPR Humacao. Complexity representing primes as the sum of two squares.

3:40

COLON REYES, OMAR. Departamento de Matemáticas, UPR Humacao. MIHALIK, ANN MARIE. The College of New Jersey. MITSUI, MARIBEL. Texas A&M International University. RIVERA TORRES, PAULA\*. Departamento de Matemáticas, UPR Humacao. RODAS, BRIAN. Loyola Marymount University. Métodos de conversión de bases de Gröebner para la implicitización de superficies bisectoras.

4:00

ROSARIO TORRES, SAMUEL\*. Mathematics Department, UPR Humacao. **Supersingular elliptic curves.**

**SESSION: Mathematics 03**

**ROOM: CH 119**

**Chairperson: Dr. Errol Montes**

1:40

CASTRO, SHAKIRA\*. Electrical and Computer Engineering, UPR Mayagüez. **A variant on Romberg's integration.**

2:00

DEGRO, BRENDA L.\* Mathematics Department, UPR Mayagüez. **Mathematical and computational bit reversal optimizations.**

2:20

HUMARAN, YUITZA\*. Mathematics Department, UPR Mayagüez. **Edelman's FFT.**

*Coffee-break*

3:00

SILVA CORDERO, JAHZEEL; MORALES BERRIOS, DANIZA\*. Mathematics Department, UPR Mayagüez. **An application of the transportation problem to pick up garbage.**

3:20

MORALES, DANIZA\*. Mathematics Department, UPR Mayagüez. **A new framework for prime factor FFTs.**

3:40

PINEIRO COLON, ROBERTO\*. Departamento de Matemáticas, UPR Mayagüez. **Integración adaptiva: Implementación en Cilk.**

4:00

QUISPE, JULIO\*. Departamento de Matemáticas, UPR Mayagüez. **La transformada fraccional de Fourier.**

**SESSION: Physics 01**

**ROOM: CH 320**

**Chairperson: Prof. Dolores Balsac**

11:10

ALEJANDRO QUIÑONES, ANGEL L.\* Physics and Electronics Department, UPR Humacao. GONZALEZ, SIXTO. Atmospheric Sciences, Arecibo Observatory. **Electron density measurements at the Coqui II rocket campaign.**

11:30

SANTA, CARLOS\*; ESTEBAN, ERNESTO. Physics Department, UPR Humacao. **A method to estimate the angular velocity of the Earth's inner core.**

11:50

ORTIZ ROYERO JUAN CARLOS\*; ALONSO, JOSE. Departamento de Física UPR, Mayagüez - Observatorio de Arecibo. CASTELLANOS, DORIAL. Departamento de Física, UPR Mayagüez. **Theoretical model of the planetary system around the PSR 1257 +12.**

*Lunch*



3:20

DIÁZ DE LEÓN, MANUEL J.\*; ESTEBAN, ERNESTO. Physics and Electronics Department, UPR Humacao. MRI electromagnetic field penetration in a two shell cylindrical object.

3:40

NIEVES DIMARIES\*; ZYPMAN, FREDY. Physics and Electronics Department, UPR Humacao. Vacancy formation in FCC transition metals.

**SESSION:****Physics 03****ROOM: CH 322***Chairperson: Dr. Alexander Leyderman*

11:10

CARABALLO, MARIBEL\*; ARTEAGA, EDILBERTO; SONI, RAVI K.; FONSECA, LUIS F.; RESTO, OSCAR; WEISZ, S. ZVI. Physics Department, UPR Rio Piedras. Analysis of the I-V curves for porous silicon with indium tin oxide and polypyrrole contacts.

11:30

BUZAIANU, MADALINA\*; FONSECA, LUIS; RESTO, OSCAR; WEISZ, S. ZVI. Physics Department, UPR Rio Piedras. Luminescent nanocrystalline-silicon prepared by RF co-sputtering.

11:50

ALSINA, KATHIA\*. Physics Department, UPR Mayagüez. **Resonancia Magnética.**

*Lunch***SESSION:****Physics 03****ROOM: CH 322***Chairperson: Dr. Esov Velázquez*

1:40

CARDONA, JOEL\*; SHEA, T. J. Brookhaven National Laboratory, Upton, NY 11973, USA. Linac beam structure and the SNS position monitor system.

2:00

RODRIGUEZ, CESAR\*. Electrical and Computer Engineering Department, UPR Mayagüez. PUMAROL, MANUEL; MOURAD, HOUSAM; RODRIGUEZ, EDGARDO; FERNANDEZ, FELIX. Physics Department, UPR Mayagüez. Resistivity measurements of nitride thin films grown by pulsed laser deposition.

2:20

ROSADO, GERARDO\*; MIRANDA, F.A. Dept. de Física y Electrónica, UPR Humacao / NASA Lewis Research. VAN KEULS, F.W. NASA Lewis Research Center, Cleveland, OH 44135. SUBRAMANYAM, G. University of Dayton, OH 45469. MULLER, C.H.; ROMANOFSKY, R.R. NASA Lewis Research Center, Cleveland, OH 44135. Efecto de películas finas ferroeléctricas en las propiedades eléctricas de líneas de transmisión del tipo microcinta a frecuencias de microondas.

*Coffee-break*

3:00

TORRES, JOHNNY\*. Physics and Electronics Department, UPR Humacao. WARNER, JOSEPH D. Lewis Research Center/NASA. PINTO, NICOLAS J. Physics and Electronics Department, UPR Humacao. MIRANDA, FELIX A. Lewis Research Center/NASA. Characterization of high transition temperature thin films as a function of thermal cycling and processing.

3:20

SRINIVAS, SATHIRAJU\*; MERCADO, JUAN; KATIYA, RAM S. Physics Department, UPR Rio Piedras. Design and construction of a simple planar DC sputtering system for conducting films deposition.



3:40

TORRES, JOHNNY\*; PINTO, NICOLAS J. Physics and Electronics Department, UPR Humacao.  
MIRANDA, FELIX A. Lewis Research Center, NASA. **Intrinsic protonic conductivity and glassy behavior in  $K_{1-x}(NH_4)_xH_2PO_4$  - KADP.**