

The Fourth Latin American and Caribbean Conference for Engineering and Technology

LACCEI

Breaking Frontiers and Barriers
in Engineering
Education, Technology and Practice

SCIENTIAE INGENIERIAE

Organized by:
**The Latin American & Caribbean
Consortium of Engineering Institutions
LACCEI**

Hosted by:
**University of Puerto Rico at Mayagüez
Universidad del Turabo**

June 21-23, 2006

**Josefina Torres (Nursing) Building
University of Puerto Rico at Mayagüez
Mayagüez, Puerto Rico**

LACCEI





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Graduate Students

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Program and Logistics

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Graphical and Artistic Design: Ismael Pagán-Trinidad, Yolanda Pérez, University of Puerto Rico at Mayagüez, Puerto Rico
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Message from the President-2005-2006

Mensaje del Presidente-2005-2006

RODRIGO NOGUERA CALDERÓN
Presidente LACCEI 2005-2006
Rector
Universidad Sergio Arboleda, Bogotá -Colombia



Queridos miembros de LACCEI:

Al haber cumplido con el encargo de representar a LACCEI como su Presidente, durante el período 2005-2006, me es grato presentar un saludo muy especial para todos los participantes y sus acompañantes en el marco de nuestra IV Conferencia Anual 2006 en Puerto Rico.

Ante todo, debo dar a Ustedes mis más sinceros agradecimientos por haberme concedido el alto honor de dirigir este joven y pujante Consorcio.

Deseo felicitar muy afectuosamente a todos los organizadores de este certamen, que tanto en los Estados Unidos como en Puerto Rico han trabajado en la coordinación de los muchos detalles necesarios para el éxito académico y logístico de nuestra reunión.

Estoy seguro de que en los días de la conferencia habrá muchas oportunidades para conversar personalmente con todos y de compartir momentos muy agradables.

Desde ahora felicito efusivamente al nuevo Presidente Dr. Jorge Iván Vélez Arocho de la Universidad de Puerto Rico, querido colega y amigo, quien asumirá la Presidencia de LACCEI para el período 2006-2007. Sin reserva alguna le ofrecemos en este momento todo nuestro apoyo. No dudo de que nuestro nuevo Presidente, académico de gran prestigio, sabrá impulsar de manera decidida todos los importantes y nobles ideales de nuestro Consorcio.

Será muy satisfactorio e interesante asistir a las valiosas presentaciones y reuniones programadas en los días de la IV Conferencia Anual que tendrá lugar en la querida y hospitalaria ciudad de Mayagüez.

Éxito en la Conferencia y felicidades para todos.

Cordialmente,

RODRIGO NOGUERA CALDERÓN
Presidente LACCEI 2005-2006
Rector
Universidad Sergio Arboleda, Bogotá - Colombia



Message from the Hosting Chancellor

Mensaje del Rector Anfitrión



JORGE I. VELEZ AROCHO, Ph.D.

Rector (Presidente Electo LACCEI 2006-2007)

Universidad de Puerto Rico

Recinto Universitario de Mayagüez

Mayagüez, Puerto Rico

Estimados amigos y amigas:

Hace un año atrás en el marco de LACCEI 2005, en la hermosa Cartagena de Indias, los invité a asistir a LACCEI 2006 y a ser huéspedes de honor del Recinto de Mayagüez de la Universidad de Puerto Rico. Hoy ese sueño se hace realidad. Agradezco profundamente, en nombre de nuestra comunidad su presencia en esta importante convocatoria universitaria.

La misión de LACCEI es ser, en América Latina y el Caribe, la organización líder de las instituciones de ingeniería. Aspiramos a proveer innovaciones en la educación e investigación en ingeniería y a emerger como una fuerza importante en el desarrollo de alianzas entre la academia, la industria y el gobierno. El compromiso de cada uno de ustedes con esta misión, confirmado con su presencia aquí, nos reta a lograr que LACCEI 2006 sea un gran encuentro...

LACCEI 2006 se reúne en Mayagüez con ilusiones y aspiraciones de contribuir a alcanzar las más altas metas en la educación de Ingeniería en nuestra región. Amigos y amigas que comparten la pasión por la ingeniería, de nuevo, se encuentran animados por la misma visión. Les decía, en Cartagena, que "la universidad es una forma valiosa de vida donde proponemos las mejores maneras de convivir; y que los universitarios podemos hacer de nuestro mundo, un mundo mejor... Un mundo más fraterno, más solidario y donde haya más paz." Durante los próximos tres días examinaremos el caminar de LACCEI de este año que termina y nos prepararemos con entusiasmo para iniciar esta nueva jornada. Juntos construiremos este nuevo caminar sobre las bases fuertes que construyó LACCEI 2005... a ellos nuestro mayor agradecimiento.

¡¡Bienvenidos al Colegio de Mayagüez!!

Jorge I. Vélez Arocho
Rector



Keynote Speaker

Conferenciante Magistral

JAMES R. HOUSTON, Ph.D.

Director
U.S. Army Engineer Research and Development Center
U.S. Army Corps of Engineers
Vicksburg, MS – USA



Dr. James R. Houston became the first Director of the U.S. Army Engineer Research and Development Center on May 24, 2000. The ERDC Director is located at the center's headquarters in Vicksburg, MS. As Director, Houston manages one of the most diverse research organizations in the world – seven laboratories at four geographical sites, with over 2,000 employees (over 1,000 engineers and scientists), \$1.2 billion in facilities, and an annual program of \$700 million.

ERDC R&D supports the Department of Defense and other agencies in military and civilian projects. Principal research mission areas include water resources (civil works), military engineering, battlespace environment, military installations, and environmental quality. The ERDC was named the Army's Large R&D Organization of the Year in 2005.

Prior to his current position, Houston served as Director of the ERDC Coastal and Hydraulics Laboratory (CHL). As CHL Director, he oversaw research programs in coastal and hydraulic engineering, oceanography, coastal geology, dredging, and numerical modeling of hydrodynamics and sediment transport, groundwater modeling, hydrology, and hydroenvironmental modeling.

From 1970 to 1972, he was a Research Physicist in the Nuclear Weapons Effects Division. He worked from 1972 until 1983 as a Research Hydraulic Engineer in the Hydraulics Laboratory (HL), responsible for studies involving explosively generated waves, tsunamis, harbor resonance, lake seiching, wave interaction with structures, sediment transport, and scouring problems. He served as Chief of the Research Division of the Coastal Engineering Research Center (CERC) from 1983 until 1986. In January 1986, Houston became a Senior Executive Service (SES) Director of CERC. CERC and HL merged in 1997, and Houston became director of the combined laboratory, CHL.

Houston received a bachelor's degree in Physics in 1969 from the University of California (Berkeley), a master's in Physics in 1970 from the University of Chicago, a master's in Coastal and Oceanographic Engineering in 1974 from the University of Florida, and a doctorate in Engineering Sciences in 1978 from the University of Florida.

He has published over 120 technical reports and papers. He has received several honors and awards including Phi Beta Kappa; Phi Kappa Phi; an SES Distinguished Executive Presidential Rank Award; and two SES Meritorious Presidential Rank Awards; Department of the Army R&D Achievement Award; Army Commendation Medal; Eminent Speaker, Institution of Engineers, Australia; 1997 National Beach Advocacy Award; and the 2003 Morrough P. O'Brien Award, American Shore and Beach Preservation Association.



Keynote Speaker

Conferenciante Magistral



PETE MARTINEZ

Vice President/General Manager

IBM Global Business Services/IBM South Florida
Florida - USA

A 30 year veteran of the Information Technology Industry, Martinez has led multiple sizable and successful entrepreneurial businesses. From a leadership position in IBM's original PC business to pioneering the first electronic services on the Internet and the creation of e-business Consulting, he has been an innovator of both business and technology. In his current position, he leads a 1,700 person organization composed of consultants, hardware and software developers, industry specialists and sales leaders. Recently, he has been a pioneer of innovative projects in the areas of advanced research, supercomputing and information based medicine. In 2003, Martinez led the formation of IBM's largest Human Resource Business Transformation Multi-client Center that has opened a multi-billion dollar outsourcing business. Previously, he led the formation of business consulting and system integration services in Latin America a 2,500 person organization. He was also the first executive of IBM's e-business Strategy Consulting and Consulting Group.

Mr. Martinez specializes in both leading services businesses as well as consulting to major international enterprises and executives in the areas of business strategy, governance and technology. He was responsible for the consulting team that drove IBM's e-business Strategy and Transformation. He has worked with banks, manufacturers, governments, academia, media firms, and retailers in defining new strategies for cost containment, growth and transformation of processes and market channels.

With a strong technology foundation, Martinez has been able to define creative solutions to business problems. He has over 20 patents and technical publications in the areas of: computer architecture, robotics, optical disks and display technology. Martinez is a frequent key note at international conferences and has been featured by the Wall Street Journal, USA Today, ABC News, The Economist and Univision.

Mr. Martinez is a Board of Directors Member of the State of Florida Early Learning Coalition, Bio Florida, the Florida Research Consortium, Internet Coast, and the Caridad Clinic. He holds a Bachelors of Science in Electrical Engineering from the University of Miami where he was chosen the Distinguished Alumnae (1998) and a Member of the Tau Beta Pi and Iron Arrow Honor Societies. In 2002 he was awarded the "Engineer of the Year" by the Association of Cuban Engineers, and in 2004 was inducted into the Miami-Dade College Hall of Fame.



Invited Speaker

Conferenciante Invitada

LUENY MORELL

Director of University Relations Latin America, HP Labs
Hewlett Packard Puerto Rico, Aguadilla - Puerto Rico



Lueny is *Director of University Relations for Latin America* for Hewlett Packard Company responsible for developing and strengthening HP's ties to a select number of institutions in Latin America. Current coverage countries include: Argentina, Brazil, Chile, Mexico, Puerto Rico and Uruguay. Her job is to engage with the higher education community and leading academic institutions in many ways, from research interaction and student recruitment, to customer and government relationships and policy advocacy. Her responsibilities include aligning trends in education with HP's technology and business directions and help articulate as part of the University Relations team, company positions in higher-education forums, as well as facilitating the implementation of strategic technology initiatives, building market presence with thought-leaders, and facilitating high-level engagement with partner institutions. Among the HP technology programs brought to institutions in the region are Gelato, a federation of research institutions worldwide focused on research and adoption of itanium 64-Linux OS, Grid, digital publishing and mobility. Other activities include curriculum development, industry advisory board membership, facilitating accreditation initiatives, activities support, student and faculty research opportunities, and philanthropy donations. Before joining HP in 2002, Lueny had a 24 year career at the University of Puerto Rico, holding various positions at the Mayagüez Campus (UPRM) as well as at the system level. A full professor of Chemical Engineering, during her tenure at UPRM she was Director of UPRM's Research & Development Center, elected member to the Academic Senate and Administrative Board, Special Assistant to the Chancellor and the Dean of Engineering in charge of strategic alliances, new educational initiatives and outcomes assessment, including coordinating the ABET 2000 accreditation responsibilities. At the UPR system, Lueny was part of the staff of the Vice President of the University of Puerto Rico System, coordinating the implementation of a UPR system-wide institutional research function, and Director of the Curriculum Innovation Center of the Puerto Rico Alliance for Minority Participation (PR-AMP) Project. Lueny was also Project Director for various NASA and NSF multidisciplinary curriculum innovation grants involving strong industry partnerships. A licensed professional engineer, and certified ABET evaluator, she has done professional consulting work and is member of various professional and honor societies, among them Tau Beta Pi, Phi Kappa Phi, Sigma Xi, Alpha Delta Kappa, ASEE, AAHE and AIChE. A founding member of the Puerto Rico TechnoEconomic Corridor, a multi sectorial initiative to foster economic development based on high technology, she is member of the following local, national and international advisory boards: Worcester Polytechnic Board of Trustees, the Southern States Technology Board (appointed by the PR Secretary of Economic Development), Puerto Rico TechnoEconomic Corridor (secretary), Northeastern University's NSF-sponsored Connections Project and the NSF ERC CenSSIS Center. More recently Lueny has provided leadership in Puerto Rico in the Island's quest for a knowledge based economy creating the island's Science and Technology Trust Fund which provides funds to sponsor competitive R&D in CIT and Life-sciences for universities and corporations. She has been selected Unesco to participate in the establishment of international guidelines for trans-border education quality assurance, and is part of the Engineer of the Americas Task Force, a group leading quality assurance and mobility of professionals in the Americas. Lueny has been also selected to participate in developing the engineering action agenda for the US by National Academy of Engineering. With over 40 scientific and education papers, Lueny has received various honors during her academic career, including the prestigious Bernard M. Gordon Prize for innovation in engineering and technology education, US National Academy of Engineering in 2006.

LACCEI Award for Academic Merit



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Awarded to
Dr. Vishwanath (Vish)
Prasad

Executive Dean of the College of Engineering and Computing
Florida International University

Given on this day, the 22nd of June of 2006
at the Awards Ceremony
at the University of Puerto Rico at Mayagüez
Mayagüez, Puerto Rico

Dr. Vishwanath (Vish) Prasad



Dr. Vishwanath (Vish) Prasad is the Executive Dean of the College of Engineering and Computing at Florida International University in Miami, Florida. He also holds the title of Distinguished Professor of Engineering. He received his Ph.D. from the University of Delaware in 1983 and M. Tech. from the Indian Institute of Technology, Kanpur.

Since he joined FIU in 2001, Dr. Prasad's leadership has resulted in significant progress for all areas of the College. Among his accomplishments are the creation of several new bachelors, masters and doctoral degree programs, bringing the total to over 30; the addition of world-class faculty; the development of new research centers and institutes including the Motorola Nanofabrication Research Facility, the IBM Latin American Grid System, the Eugenio Pino and Family Global Entrepreneurship Center, the Telecommunications Institute, the Advanced Materials Engineering Research Institute, and the Center for Diversity in Engineering; and an increase in the enrollment of undergraduate and graduate students. The increase is especially evident at the Ph.D. level where enrollment has grown by over 300%. Research funding for the College has almost doubled during Dr. Prasad's deanship and through his efforts over \$13 million has been raised for endowment and development funds.

Before moving to FIU, Dr. Prasad served as a Leading Professor of Mechanical Engineering and Materials Science and Engineering at the State University of New York at Stony Brook. He also served as the Director of the (MURI) Center for Crystal Growth Research, a consortium of six universities, industry and national laboratories, and as the Associate Dean of Engineering for Research and Graduate Studies. From 1984 to 1993, Dr. Prasad served as a faculty member at Columbia University.

At Stony Brook, Dr. Prasad was a co-principal investigator of the National Science Foundation (MRSEC) Center for Thermal Spray Research. He is an elected Fellow of ASME and has served as a member of the USRA Microgravity Research Council for NASA Programs in Fluid Physics, Combustion and Materials as well as the Chair of the ASME Heat Transfer Division Committee on Transport Phenomena in Manufacturing and Materials Processing.

Dr. Prasad has written close to two hundred refereed articles on various topics in the areas of heat transfer, materials processing, microelectronics and plasma spray coating. He has organized numerous conferences, symposia and workshops, and has been invited to present special lectures at many academic institutions and industry in the United States and abroad. Dr. Prasad serves as the lead editor of the Annual Review of Heat Transfer and on the editorial advisory boards of two journals. In addition, he has edited or co-edited several journal volumes, books and symposium volumes.

Under Dr. Prasad's leadership, the College of Engineering and Computing at FIU has developed partnerships with many engineering schools in Latin America and the Caribbean, including dual-degree programs, student exchange, faculty development and research collaboration. When Dr. Prasad started to interact with Latin American and Caribbean engineering institutions, he immediately saw a need for a forum in which these institutions could cooperate with each other. His idea led to the creation of the Latin American and Caribbean Consortium of Engineering Institutions (LACCEI) in 2003 and he served as its founding President. LACCEI supports the achievement of excellence in engineering education and research in Latin American and Caribbean countries.

For his contributions to engineering education in Latin America and the Caribbean, Dr. Prasad has been awarded the Distinguished Service Medal by Santa Maria University in Caracas, Venezuela, and he has been named Honorary Professor at Universidad Ricardo Palma in Lima, Peru. He has traveled extensively, visiting institutions in almost every major country in Latin America and the Caribbean.

Condecoración LACCEI al Mérito Universitario



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Concedida al
Dr. Vishwanath (Vish)
Prasad

Decano Ejecutivo del Colegio de Ingeniería y Computación
Florida International University

Hoy, día 22 de junio de 2006
en la Ceremonia de Premiación celebrada en la
Universidad de Puerto Rico-Mayagüez
Mayagüez, Puerto Rico

Dr. Vishwanath (Vish) Prasad



Dr. Vishwanath (Vish) Prasad es el Decano Ejecutivo de la Facultad de Ingeniería e Informática en la Universidad Internacional de la Florida (FIU), localizada en Miami, Florida. El Dr. Prasad también es Profesor Distinguido de Ingeniería. Recibió su Ph.D. en University of Delaware en 1983 y su M. Tech. en el Indian Institute of Technology en Kanpur.

Desde el 2001, año en el cual el Dr. Prasad se unió a FIU, su liderazgo ha resultado en avances significativos para la Facultad. Sus logros incluyen la creación de varios programas adicionales de bachillerato, maestría y doctorado, que ahora numeran a mas de 30; la adición de profesores conocidos mundialmente; el desarrollo de nuevos centros de investigación e institutos especiales como: Motorola Nanofabrication Research Facility, IBM Latin American Grid System, Eugenio Pino and Family Global Entrepreneurship Center, Telecommunications Institute, Advanced Materials Engineering Research Institute, y Center for Diversity in Engineering; y el incremento en la matrícula de estudiantes. El aumento es especialmente notable al nivel de doctorado, el cual ha crecido mas de 300% durante su decanato. Fondos de investigación dentro de la Facultad de Ingeniería se han duplicado y se han recaudado mas de \$13 millones en donaciones y fondos de desarrollo.

Antes de unirse a FIU, Dr. Prasad ocupó el cargo de Profesor Principal de Ingeniería Mecánica así como de Ciencias e Ingeniería de Materiales en State University of New York en Stony Brook. También sirvió como Director del (MURI) Center for Crystal Growth Research, un consorcio de seis universidades, empresas industriales y laboratorios nacionales, así como Decano Asociado de Ingeniería para Investigación y Estudios de Postgrado. De 1984 a 1993, Dr. Prasad ejerció su carrera como Profesor en Columbia University.

En Stony Brook, el Dr. Prasad fue investigador co-principal del National Science Foundation (MRSEC) Center for Thermal Spray Research. Es un miembro elegido de ASME y ha servido como miembro de USRA Microgravity Research Council para programas de la NASA en Física de fluidos, combustión y materiales; y ha presidido el comité de ASME Heat Transfer Division Committee on Transport Phenomena in Manufacturing and Materials Processing.

Dr. Prasad es autor de casi doscientos artículos sobre varios temas en las áreas de transferencia de calor, procesamiento de materiales, microelectrónica y recubrimiento plasma por aerosol. Ha organizado numerosas conferencias, reuniones y talleres, y ha sido invitado a presentar conferencias especiales en varios institutos académicos e industria, dentro de los Estados Unidos y extranjero. Dr. Prasad es el editor principal del *Annual Review of Heat Transfer* y forma parte del consejo editorial de dos diarios. Además, ha editado o co-editado varios volúmenes en diarios, libros y simposios.

Bajo el liderazgo del Dr. Prasad, la Facultad de Ingeniería e Informática en FIU ha desarrollado relaciones cooperativas con muchas universidades de ingeniería en América Latina y el Caribe, incluyendo programas de títulos conjuntos, intercambio estudiantil, desarrollo del profesorado, y colaboración investigativa. Cuando el Dr. Prasad comenzó a interactuar con instituciones de ingeniería en Latinoamérica y el Caribe, él vio inmediatamente la necesidad de crear un foro en el cual estas instituciones pudieran cooperar entre sí. Su idea llegó a la creación del Latin American and Caribbean Consortium of Engineering Institutions (LACCEI) en el 2003, actuando como su Presidente fundador. LACCEI apoya la excelencia en la enseñanza e investigación en el área de ingeniería en los países de Latinoamérica y el Caribe.

Por sus contribuciones a la educación de ingeniería en América Latina y el Caribe, el Dr. Prasad ha recibido la Medalla por Servicio Distinguido de La Universidad de Santa María en Caracas, Venezuela, y ha sido nombrado Profesor Honorario de la Universidad Ricardo Palma en Lima, Perú. El Dr. Prasad ha visitado numerosas instituciones, viajando a casi todos los países de Latinoamérica y el Caribe.



Presidencal Gavel

Symbol of Authority within LACCEI

The Presidential Gavel of the LACCEI Consortium possesses a honorific value of the highest order, and has a special connotation that essentially identifies the executive power which is part of the vestiture of the hierarchy of the President of this Society, and additionally evokes the meaning of its principles and values, the sense of conscience, of responsibility, of service and of justice, that is present to the highest degree in the function of governing.



The Presidential Gavel surged from the need to adopt a distinctive insignia for exercising authority, "nemine discrepante" conferred on the President by the Assembly. The gavel, that is the symbol of this charge, is not a privilege. Whoever receives it is obliged to follow with integrity, the will of those that conferred this honor, to govern with justice and equality.

The LACCEI Presidential Gavel is a symbolic emblem of great importance, with elements of identity that differentiate from others, in that it represents the dignity and the power exercised by the President, in carrying out the functions and mandates received with wisdom, firmness, rectitude, prudence and without hesitation, as was acclaimed by the General Assembly of the Members of the Consortium. It is an authority bound to rule in obedience to the will of the community that gave it power.

This emblem of authority of the top position within LACCEI was designed so that each of its parts by themselves will record a history, reflecting a duty and representing the values and principles of the collective.

Meaning of the symbol: The gavel first of all symbolizes the authority that the President of the Consortium has received "ex consensu", through the mandate of the Assembly. It represents majesty, gentry, nobleness, magnanimity, vigilance and activity.

The gavel's conic form speaks of complete unity, "causa causorum", created by God, Engineer of the Universe, made totally from natural wood from a native tropical forest, symbolizes the harmonious union with mother nature, in as much as engineers, in the exercise of this noble profession, ought to act with genuine social conscience to design and develop works and projects that will benefit people, favor ecology and contribute to the betterment of the quality of life of everyone that surround us.

The gold color at its extremes has a heraldic significance meaning wisdom, nobility, splendor, wealth, prosperity, justice, obedience, royalty, mysticism, prudence, constancy, power and light.

As a whole, it represents, according to the laws of heraldry, a noble ideal, that establishes the central values that characterize, with the scientific, technical, investigative, ethical and moral values of the Engineering Sciences, a pre-established, solid and hierarchical order, agreed upon by the Members, the Latin American and Caribbean Consortium of Engineering Institutions, looking for identity, development, growth, progress, and consolidation of the engineering profession in the American continent, and the birth of the new American engineer of the third millennium.

Description: According to the requirements of the Science of Heraldry, the collective formed by honorable objects looks to perpetuate, throughout time, through inheritance or tradition, this emblem with all its glories, values, prerogatives, meanings and the intrinsic merits that it represents.

The gavel is elaborated on a smooth wooden finish, finely polished sheen, giving the conical shaped piece an elegant contrast with gold on its handle and end. The wood was turned and finished in an ebony tone with the LACCEI logo carved on the top part of the handle, a symbol representative and guiding the action of its integrated community. Additionally in its flanks are letters and numbers indicating the name of the President, and the years served in this office.

The handle contains the shield insignia of the LACCEI Consortium, with all that this shield represents and signifies, with the American continent, from Canada to Patagonia, surrounded by flags of the international fraternity of the nations that are Members of the Consortium laid out in concentric circles. In the center of the shield, in gold lettering, is the logo "*Scientiae Ingenieriae*", signifying the first and foremost reason for the existence of the LACCEI community.

The shield is set on a blue background, signifying justice, zeal, truth, royalty, beauty, the ocean, which itself represents the illustration of wisdom, the virtuous courage, the cumulative energy, life itself, existence, dynamic change in nature, respect for nature's forces, transparency, the ecosystem, harmony of the environment, fauna and flora, that is to say, the American continent surrounded by the Atlantic and Pacific Oceans and the Caribbean Sea, which all together represents the firmness, stability, and constancy of resolutions.

The color sable, brilliant black ebony, the color of the body of the gavel, personifies prudence, discretion, rigour, honesty and obedience. The conic shape of the piece of wood progressively diminishes in the diameter of its circumference, ending in a point of metal alloy.



Bastón Presidencial (Mando)

Símbolo de Autoridad de LACCEI



El Bastón Presidencial (Mando) del Consorcio LACCEI, posee un altísimo valor honorífico y tiene una especial connotación, que esencialmente identifica la exclusiva potestad con la que está revestida la jerarquía del Presidente de la Comunidad y evoca además, en el significado de sus principios y valores, el sentido de la conciencia, de la responsabilidad, el servicio y la justicia, que están presentes en sumo grado, en la función del mando.

El Bastón Presidencial (Mando), surge como la necesidad de adoptar una insignia distintiva del ejercicio de la autoridad, “nemine discrepante” conferida al Presidente, por la Asamblea. El bastón, que es el símbolo del cargo, no es un privilegio. Quien lo recibe, se obliga a seguir con honestidad, la voluntad de quien se lo confirió para gobernar con justicia y equidad.

El Bastón Presidencial (Mando) de LACCEI, es un emblema significativo muy importante, con elementos de identidad diferenciadores de los demás, ya que representa la dignidad y el poder ejercidos por el Presidente, en el desempeño de sus funciones y el mando recibido debe ser realizado con sabiduría, firmeza, rectitud, prudencia y sin claudicaciones, tal como es reclamado por la Asamblea General de Socios del Consorcio. Es una autoridad acotada, es una autoridad para mandar obedeciendo, a la comunidad que le otorga la fuerza del poder.

Este emblema de autoridad de jefe, fue diseñado para que cada una de sus partes por sí misma, cuente una historia, refleje un compromiso y represente los valores y principios de la colectividad.

Simbología: El bastón ante todo, simboliza la autoridad que el Presidente del Consorcio ha recibido, “ex consensu”, por el mandato de la Asamblea. Representa majestad, dominio, señorío, hidalguía, magnanimidad, vigilancia y actividad.

La masa del bastón de forma cónica, habla de la unidad del todo, “causa causorum”, creación de Dios, conductor e Ingeniero del Universo, hecha en su totalidad de madera natural de bosque tropical nativo, simboliza en sí misma, la conjunción armoniosa con la madre naturaleza, ya que los ingenieros, en el ejercicio de esa noble profesión, deben actuar con verdadera conciencia social, para diseñar y desarrollar obras y proyectos que benefician a nuestros semejantes, favorezcan la ecología y contribuyan al mejoramiento de las condiciones de vida de todos los seres que nos rodean.

El color oro de sus extremos, tiene el significado heráldico de la sabiduría, nobleza, esplendor, riqueza, prosperidad, justicia, obediencia, lealtad, mística, prudencia, constancia, poder y luz.

El conjunto en general, representa, según las leyes de la heráldica, un ideal noble, que establece los valores centrales que caracterizan con sus atributos científicos, técnicos, investigativos, éticos y morales, como lo son las Ciencias de la Ingeniería, un orden preestablecido, solidez y jerarquía, acatada por los Socios, las Escuelas de Ingeniería de la América Latina y del Caribe, buscando la identidad, desarrollo, crecimiento, progreso y consolidación, en el continente americano, de la profesión de la ingeniería, y el surgimiento de la figura del nuevo ingeniero americano del tercio milenio.

Descriptiva: De acuerdo con los requisitos de la Ciencia Heráldica, el conjunto formado por piezas honorables busca perpetuar, a través del tiempo, por herencia y por tradición, este emblema con sus glorias, valores, prerrogativas, significados y los méritos intrínsecos que él representa.

Se trata de un bastón, elaborado en madera lisa, finamente pulida y lustrada, dándole al conjunto un elegante contraste de forma cónica, con engarce áureo enfundado en su empuñadura y en la punta. La masa de la madera, torneada al desnudo, refule en tono azabache y en la parte superior de la empuñadura, lleva incrustado el escudo de LACCEI, simbología representativa y rectora de las acciones de la comunidad de sus integrantes, en donde además, en sus flancos figuran en letras y números, el nombre del Presidente y los años de su mandato.

La empuñadura, porta el Escudo insignia del Consorcio LACCEI, con todo lo que dicho escudo representa y significa, ya que el continente americano, desde el Canadá hasta la Patagonia, se encuentra rodeado por la fraternidad internacional de las naciones, con las banderas socias del Consorcio en círculos concéntricos. En la parte central del escudo, en letras doradas, se lee la leyenda “*Scientiae Ingenieriae*”, para significar la razón primigenia y última de ser de la comunidad LACCEI.

El fondo del escudo en color azur, significa justicia, celo, verdad, lealtad, hermosura, el agua de los mares, que a su vez representa, la sabiduría ilustrada, el ánimo virtuoso, la energía acumulada, la vida misma, el devenir de la existencia, el dinamismo de la naturaleza, el respeto por sus fuerzas, la transparencia, el ecosistema, la armonía con el medio ambiente, la fauna, la flora, en una palabra, el continente americano, rodeado por el azul del océano Pacífico y del mar Caribe, conjunto que representa la firmeza, la estabilidad y la constancia en las resoluciones.

El color sable, negro azabache brillante, del cuerpo del bastón, personifica la prudencia, la discreción, el rigor, la honestidad y la obediencia. La figura cónica de la pieza de madera, va disminuyendo progresivamente en el diámetro de su circunferencia, hasta terminar en un regatón de punta metálica de aleación crisol.



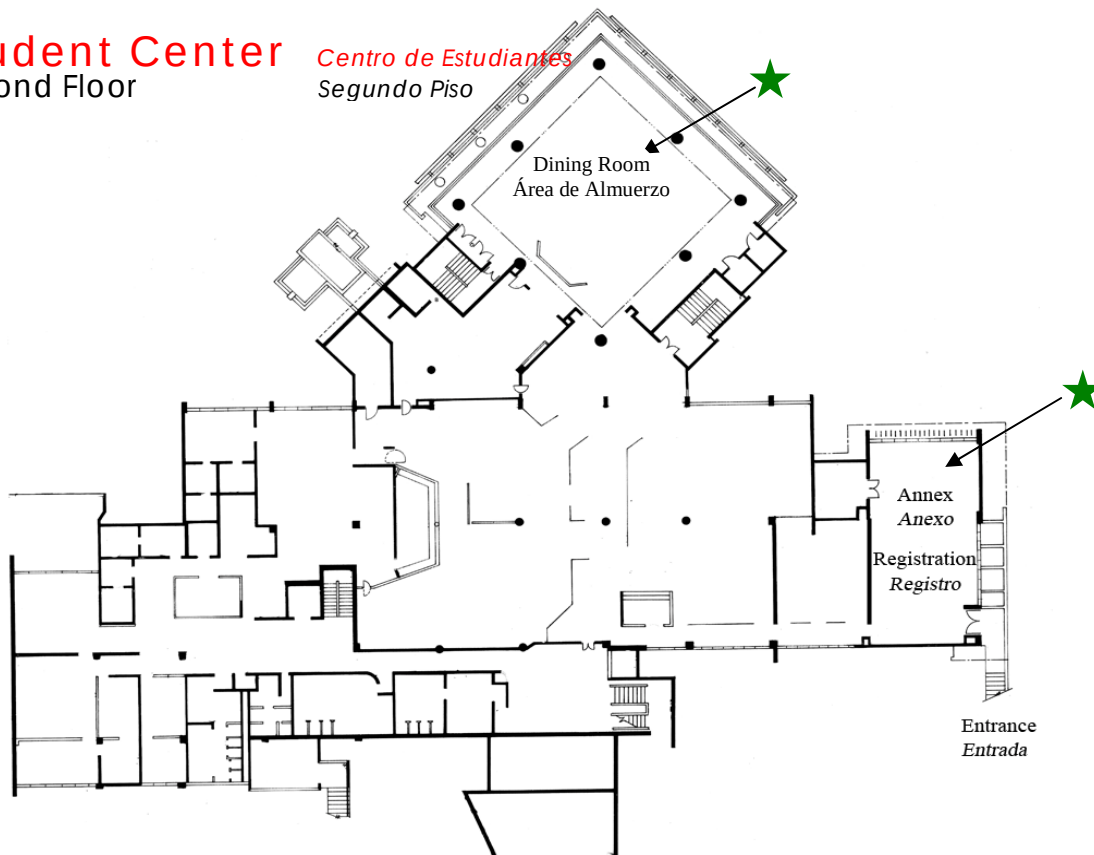
Location Maps

Mapas de Localización



Student Center Second Floor

*Centro de Estudiantes
Segundo Piso*

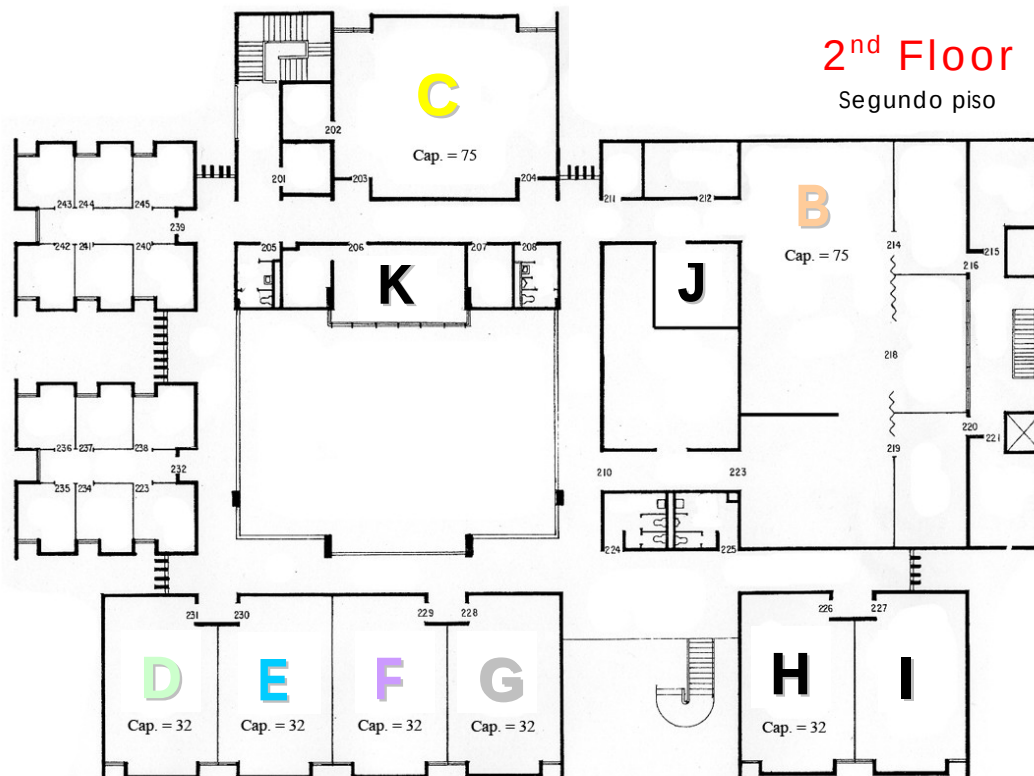




Mapas de Localización

Josefina Torres (Nursing) Building

Edificio Josefina Torres (Enfermería)





General Program LACCEI 2006

June 18	8:00a-5:00p	San Juan Hotel	Accreditation Workshop
June 19	8:00a-5:00p	Univ. del Turabo	Extended Governing Board Meeting
June 20	8:00a-12:00n	San Juan Hotel	Extended Governing Board Meeting
Wednesday, June 21, 2006	7:00m-9:00m	Annex - Cafeteria	Registration
	9:00p-12:00n	RFC Auditorium	Opening Ceremonies
			Dr. James R. Houston, ERDC-USCE, Keynote Speaker Breaking Frontiers in Engineering: Education, Research and Practice
			Dr. Pete Martínez, IBM, Keynote Speaker Latin American Grid (LA Grid): A Comprehensive IT Industry and Academic Partnership Agreements: MOA UPRM-ERDC: Tropical Environmental Research Center
	12:00n-1:30p	Dining Room	Lunch
	1:30p-2:30p	1 B	Engineering Education Chairperson: F. A. Rojas
			70. Baccalaureate Studies in Maritime Engineering & Management By: P.D. Scarlatos (Florida Atlantic University, USA)
			76. Computing Disciplines in 2006: Description and Comparisons By: B.M. Lunt, J.J.Ekstrom (Brigham Young University, USA), S. Gorka, J. Miller (Pennsylvania College of Technology, USA), R. Kamali (Purdue University-Calumet, USA), E. Lawson (Rochester Institute of Technology, USA), H. Reichgelt (Georgia Southern University, USA)
			102. Bases para la elaboración de una malla curricular basada en competencias transversales: caso de las carreras de la Facultad de Ingeniería de la Universidad del Bío-Bío By: P. Backhouse, (Universidad del Bío-Bío, CHILE)
	1:30p-2:30p	1 A	Engineering Education Chairperson: D. Pittman
			18. Estrategias innovadoras para promover el intercambio estudiantil entre Latinoamérica y Estados Unidos By: J.I. Alvarez (University Placement Services, USA)
			29. Building International Collaboration Experiences among LACCEI Institutions through Global Design Projects By: I.E. Esparragoza (The Pennsylvania State University, USA), H.E. Maury (Universidad del Norte, COLOMBIA), D. Gutiérrez, (Universidad Autónoma de Occidente, COLOMBIA), M. Aguilar (Universidade Federal de Juiz de Fora, BRAZIL) J.W. Penagos (Corporación Universitaria de la Costa, COLOMBIA), J. Ocampo (Universidad Tecnológica Centroamericana, HONDURAS), D. Álvarez (Universidad Católica de Santa María, PERU)
			69. Preliminary Results of the University of Florida College of Engineering Projection to Latin America and the Caribbean By: J.F.K. Earle, C. Cárdenas-Lailhacar (University of Florida, USA)
	1:30p-2:30p	1 C	Natural Hazards Chairperson: F. Masters
			46. The "Three Little Pigs" full-scale testing facility By: F.M. Bartlett, J. Galsworthy, D. Henderson, H.P. Hong, D.R. Inculet, E. Savory, L.M. St. Pierre, D. Surry (University of Western Ontario, CANADA)
			197. Wind Load Determination Using Field Data and Wind Tunnel Studies on Residential Buildings By: P.O. Prevatt (Clemson University, USA)
			216. Advancing Hurricane Mitigation Research: The Wall of Wind By: I. Canino, F. Masters (Florida International University, USA)
	1:30p-2:30p	1 D	Energy Chairperson: L. Abusaid
			3. Neurofuzzy Modeling for Asynchronous Machines By: A. Pando García, J.L. Díaz Rodríguez (Universidad de Pamplona, COLOMBIA)
			39. Benefits of Disperse Power Generation in a Deregulated Environment in South America: Case Study By: O.A. Mohammed, N.J. Cristaldo, N. Abed (Florida International University, USA)
			56. Wavelet Transform Based Islanding Characterization Method for Distributed Generation By: O.A. Mohammed, N.Y. Abed (Florida International University, USA)



Wednesday, June 21, 2006 (continued)

General Program LACCEI 2006					
	1:30p-2:30p	1	E	Infrastructure 110. Elastic Design of School Buildings By: J.O. Guevara, J.F. Lluch, J. Hernández, M. Pando (University of Puerto Rico-Mayagüez, PUERTO RICO) 178. Seismic Resistance of Low Rise Reinforced Concrete Frame Residential Buildings in Puerto Rico By: L.A. Mieses, R.R. López, J.A. Martínez-Cruzado, A. Saffar (Universidad de Puerto Rico at Mayaguez, PUERTO RICO) 230. Earthquake Induced Damage Estimation in Steel Buildings By: G. Cortes, R. López, A. Saffar (University of Puerto Rico at Mayagüez, PUERTO RICO)	Chairperson: J. F. Lluch Invited Speaker: Prof. Isaac Elishakoff
	1:30p-2:30p	1	F	Information Technology 68. Travel Time Estimation Using Cellular Phones By: R.P. Zavaleta, S.V. Wunnava (Florida International University, USA) 77. PLCs Stations on a Budget By: A.J. Gapinski (Penn State University-Fayette, USA) 109. Micro Electro-Mechanical Systems and VLSI Implementation By: J. Yao, S.V. Wunnava (Florida International University, USA)	Chairperson: S. V. Wunnava
	2:40p-3:40p	2	B	Engineering Education 4. Diseño de un Entorno Virtual para la Enseñanza de Procesos de Mecanizado By: M.A. Hidalgo, J.D. Cardona (Universidad Autónoma de Occidente, COLOMBIA), F. A. Rojas (Universidad de Los Andes, COLOMBIA) 60. Robots Educativos Expertos Comunicados por Radio Frecuencia By: W.E. Camilo Reynoso (UNAPEC, REPUBLICA DOMINICANA) 86. Active Learning of Control Theory Using Virtual Instrumentation By: I. Alvarado (National Instrument, USA)	Chairperson: P. Backhouse
	2:40p-3:40p	2	E	Government-Industry-University Relations 96. Partnership between the University and the Municipality of Mayagüez for the Development of the Required Facilities for the celebration of the 2010 Central American and Caribbean Games By: J. O. Guevara, I. Pagán Trinidad, F. Maldonado Fortunet, D. Valdés Díaz, E. Pesantes (University of Puerto Rico at Mayagüez, PUERTO RICO) 153. ERDC/UPRM Partnership: A model for educational and research initiatives By: D.W. Pittman, E. Villanueva (US Army Engineer Research and Development Center, USA), C.E. Ruiz (Environmental Laboratory, USA), I. Pagán-Trinidad (University of Puerto Rico at Mayagüez, PUERTO RICO) 160. Educational experiences of Embry-Riddle Students through NASA Research Collaboration By: K. Schlee, J. Ristow and S. Gangadharan (Embry-Riddle Aeronautical University, USA), J. Sudermann, C. Walker (NASA, Kennedy Space Center, USA)	Chairperson: I. Esparragoza
	2:40p-3:40p	2	C	Natural Hazards 200. Hurricane Wind Loads on Residential Structures: Full-Scale Measurements and Analysis from 2004 and 2005 By: L.D. Aponte, K. Gurley (University of Florida, USA) 201. Evacuation Decision-Support Model for Bus Dispatch By: L. Margulis, P. Charosky, J. Fernandez, M.A. Centeno (Florida International University, USA) 74. Landslides in Trinidad - A Geotechnical Study By: V. Kanithi, C. Kanhai (University of West Indies, TRINIDAD AND TOBAGO)	Chairperson: R. Zapata



General Program LACCEI 2006

Wednesday, June 21, 2006 (continued)

	2:40p-3:40p	2	D	Energy 62. Alternative Energy Mechatronics Senior Design Capstone Project By: B.A. Muller, T.D. Batzel, M. Leventry, R. Reznik, (Penn State Altoona College, USA) 65. Production of Natural Gas and Fluid Flow in Tight Sand Reservoirs By: M.C. Bravo (Florida International University, USA), M. Gurfinkel (The University of Texas at Austin, USA) 67. Overview of carbon dioxide sequestration in depleted oil and gas reservoirs in Florida, USGS Petroleum Province 50 By: D. Velásquez, (Florida International University, USA), O. Rey (Universidad Central de Venezuela, VENEZUELA), E. Manrique (Norwest Questa Engineering, USA)	Chairperson: O. Mohammed
	2:40p-3:40p	2	A	Infrastructure 242. Recent Developments in Probabilistic Dynamics and Risk Assessment By: I. Elishakoff (Florida Atlantic University, USA)	Chairperson: L. A. Godoy
	2:40p-3:40p	2	F	Information Technology 92. Modular HDL Designs are Efficient and Reliable By: J.M. Montenegro, V. Jayaram, S. Wunnava (Florida International University, USA) 99. Wireless Local Area Network and Security By: S. Makki, S.V. Wunnava (Florida International U. USA) 103. Modeling of a Web-Based Pediatric MRI Data Repository Site using OPNET By: M.R. Guillen, M. Adjouadi (Florida International University, USA), W. D. Gaillard (USA)	Chairperson: A. J. Gapinski
	3:40p-3:55p		L	Coffee Break	
	3:55p-4:55p	3	B	Engineering Education 63. CONWIP: Un Sistema de Control de Producción By: L.E. Blanco Rivero, E. Romero Motta, J.A. Páez Rodríguez (Escuela Colombiana de Ingeniería, COLOMBIA) 214. Control Strategies for Vertically Wiggling Snake Robots By: A.M. Cardona (Florida Atlantic University, USA), C. Parra (Pontificia Universidad Javeriana, COLOMBIA), J. Barrero (University of Massachusetts, USA) 131. Electronic Workbench and PSpice can be used for Design Extensions along with the Simulations By: S.V. Wunnava, T. Marcus, R. Romero, M. Heimer (Florida International University, USA)	Chairperson: P. Scarlatos
	3:55p-4:55p	3	A	Government-Industry-University Relations 166. Puerto Rico Transportation Technology Transfer Center By: B. Colucci, F. Luyanda, G. González (Universidad de Puerto Rico at Mayagüez, PUERTO RICO) 223. Partnership for Road Transport Management a Case of Trinidad and Tobago By: M. Mutabazi (The University of the West Indies, TRINIDAD AND TOBAGO)	Chairperson: José Páez
	3:55p-4:55p	3	C	Natural Hazards 228. Flood damages due to rivers, storm surges and tsunamis: A proposed methodology By: N. Caraballo, R. Zapata, I. Pagán Trinidad. (University of Puerto Rico at Mayagüez, PUERTO RICO) 156. An Estimation of Probable Maximum Precipitation for Trinidad By: F. Jagernath 3Ministry of Works, TRINIDAD AND TOBAGO), G.S. Shrivastava (University of the West Indies, TRINIDAD AND TOBAGO) 229. Temporal Rainfall Distributions: A Significant Element on Watershed Response in P.R. By: V. Gonzalez, I. Pagán Trinidad (University of Puerto Rico at Mayagüez, PUERTO RICO)	Chairperson: O. Kofi-Dalrymple



General Program LACCEI 2006

Wednesday, June 21, 2006 (continued)	3:55p-4:55p	3	D	Energy	Chairperson: M. Baca López	
				21. Modelo de Simulación para Determinar la Factibilidad de la Instalación de la Central de Generación de Energía Eléctrica con Gasificación de Carbón. Departamento La Libertad-Perú By: R. Paredes Rosario, M. Baca López (Universidad Privada del Norte, PERU)		
				36. Simulation and identification of a field oriented controlled induction motor using artificial neural networks By: A. Pardo García, J.L. Diaz (University of Pamplona, COLOMBIA), A. F. Muñoz (University of Bucaramanga, COLOMBIA)		
				124. La Utilización de los Desechos de Base Celulosica para Producir Etanol By: W. Morris, P.G. Pryce (University of Technology, JAMAICA)		
	3:55p-4:55p	3	E	Infrastructure	Chairperson: A. Prevat	
				5. Damage of canopies in gas stations due to Hurricanes Katrina and Rita By: L.A. Godoy, A. Poitevin (University of Puerto Rico at Mayagüez, PUERTO RICO)		
				104. Impact of windborne debris on storm shutters By: A. Borges, R.R. López, R. Zapata (University of Puerto Rico at Mayagüez, PUERTO RICO)		
				121. On Improving the Performance of Wood-Zinc Roof Systems By: D. Aviles, A. Saffar, R. Ramos, R. García (University of Puerto Rico at Mayagüez, PUERTO RICO)		
	3:55p-4:55p	3	F	Information Technology	Chairperson: M. Adjouadi	
				108. SystemC implementation for VLSI embedded systems for MEMS applications By: J. Yao, S.V. Wunnava (Florida International University, USA)		
				14. Cancelación de ruido en imágenes mediante la Transformada Wavelet Discreta usando un FPGA By: C.S. Carbajal, E.I. González, (Instituto Tecnológico de Monterrey - Campus Estado de México, MÉXICO)		
				113. Backbone Software Methodology: A Small Business Approach By: I. Pérez, R. Castelló (Instituto Tecnológico de Monterrey- Chihuahua, MEXICO)		
	6:00p-11:00p	Town Square	Puerto Rican Cultural Night - Mayor's Party			
			Eugenio María de Hostos Law School			



General Program LACCEI 2006

Thursday, June 22, 2006

8:00a-9:00a		K	Registration	
8:30a-9:30a	4	A	Engineering Education <i>Invited Speaker: Lueny Morell HP Labs HP-PR</i>	Chairperson: R. Vásquez
8:30a-9:30a	4	C	Coastal Engineering 64. Towards the effective prediction of long-term beach morphology on Caribbean coastlines By: D. Villarroel-Lamb (University of the West Indies, TRINIDAD AND TOBAGO) 147. Coastal Zone Engineering and Management By: J.C. Ibrahim, R. Charles (University of the West Indies, TRINIDAD AND TOBAGO) 219. Sea-level Rise Implications for the Coast of Guyana By: O. Kofi Dalrymple (University of South Florida, USA)	Chairperson: S. A. Restrepo
8:30a-9:30a	4	D	Energy 59. Biodiesel at Puerto Rico By: J.A. Colucci (University of Puerto Rico at Mayagüez, PUERTO RICO) 97. Assessing the Western Hemisphere's Regional Alternative Energy Programs By: L.E. Abusaid, J. Gomez (Florida International University, USA) 136. Power Management of a Hybrid Golf Cart By: M. Saelzer, R. Messenger, A. Abtahi, A. Zilouchian (Florida Atlantic University, USA)	Chairperson: J. Colucci
8:30a-9:30a	4	E	Infrastructure 134. Simplified vs. Detailed Bridge Models. A Time and Cost By: D. A. Wendichansky, E. Vélez (University of Puerto Rico at Mayaguez, PUERTO RICO), S. S. Chen (State University of New York at Buffalo, USA), J. B. Mander (University of Canterbury, NEW ZELAND) 135. Assessing Bridge Conditions by Performing Static Load Tests By: Daniel Wendichansky, J.L. Ayala (University of Puerto Rico at Mayaguez, PUERTO RICO), Y. Seda Sanabria (US Corps of Engineers, USA) 144. Use of Rapidly Cured Inflatable Composite Beams for Military Small-Gap Bridging By: H. Abtahi, A. Zilouchian (Florida Atlantic University, USA)	Chairperson: A. Saffar
8:30a-9:30a	4	F	Information Technology 114. Security Threats in Wireless Networks By: A.E. Escobar (Florida Atlantic University, USA) 115. Incorporating Assertion Concepts Improves HDL based Designs and Synthesis By: V. Jayaram, J. Montenegro, S. Wunnava (Florida International University, USA) 116. Functional Micro-Controller Design and Implementation By: V. Jayaram, S. Wunnava (Florida International University, USA)	Chairperson: R. Castelló
9:40a-10:40a	5	B	Engineering Education 30. Upgrading the Welding Module in the B.Eng Programme at the University of Technology, Jamaica By: G.D. Oliver (University of Technology, JAMAICA) 43. The Modal Superposition Method Using Maple®: A Structural Dynamics Application for the Classroom By: C.E. Orozco (University of North Carolina at Charlotte, USA) 61. Learning Engineering through the Construction of Concrete Canoes By: F.J. Acosta, (University of Puerto Rico at Mayagüez, PUERTO RICO)	Chairperson: C. E. Orozco
9:40a-10:40a	5	A	Dual and Joint Degrees 20. Models for Dual and Joint Degrees in Engineering By: M. Larrondo Petrie (Florida Atlantic University, USA) 141. Experiences in Trinidad and Tobago with the Administration of A Joint Degree Programme in Engineering By: M.K.S. Sastry, C.K. Sankat, B. Copeland, W. Lewis (University of the West Indies, TRINIDAD), H. Khan, D. Bhajan, D. Exall and K.D. Srivastava (University of Trinidad and Tobago, Pt. Lisas Campus, TRINIDAD) 232. Dual Degree Program at FIU: A Review after Three Years of Implementation By: Shih-Ming Lee, Mario Sanchez (Florida International University, USA)	Chairperson: C. Paredes



General Program LACCEI 2006

Thursday, June 22, 2006 (continued)

9:40a-10:40a	5	C	Environmental	Chairperson: D. Villarroel-Lamb
			34. Flow Measurements in Tidal Spillways By: P. D. Scarlatos (Florida Atlantic University, USA)	
			35. Analysis of Factors Affecting the Sound Generated by Airboats By: A.L. Perez, O. Masory, S. Glegg, R. Coulson (Florida Atlantic University, USA)	
			193. A Study of Modern and Geologic Erosion Rates by Low-Temperature Thermochronology, 10Be Analysis, and GIS/RS-based Applied Geomorphology By: S.A. Restrepo Moreno (University of Florida, Gainesville, USA)	
	5	D	Energy	Chairperson: N. Munroe
			142. Learning Assessment of a Multi-Disciplinary Undergraduate Fuel Cell Class at Florida Atlantic University By: H. "Amir" Abati, A. Zilouchian (Florida Atlantic University, USA)	
			158. Designing and Operating Reliable Gasifiers By: M. Daas, R. Srivastava, N. Munroe, D. Roelant (Florida International University, USA)	
			203. Effect of Change in Pole Shape Design on Harmonic Contents of PM Synchronous Motor Air Gap Flux Density Waveform By: O. Mohammed, S. Ganu, N. Abed (Florida International University, USA)	
	5	E	Infrastructure	Chairperson: M. J. Sánchez
			169. Strategy for the Rehabilitation of R/C T Beam Bridges with Carbon Fiber Reinforced Polymers Sheets By: M. Coll-Borgo, I. Burgos-Gil, H. Laureano-Pagán (PR Highway and Transportation Authority, PUERTO RICO)	
			57. Towards an inventory and vulnerability of aboveground storage tanks in Puerto Rico By: J.C. Virella, G. Portela, L.A. Godoy (University of Puerto Rico at Mayagüez, PUERTO RICO)	
			71. Dynamic Behavior of the Cable Structures and Towers of the Arecibo Radio-Observatory By: J.C. Morales (University of Turabo, PUERTO RICO), L.E. Suarez (University of Puerto Rico at Mayaguez, PUERTO RICO)	
9:40a-10:40a	5	F	Information Technology	Chairperson: D. Rodríguez
			120. Mexican e-government ontologies: An adaptation By: F. Ortiz (Universidad Valle del Bravo, MEXICO)	
			127. Design Progression with Verilog helps Accelerate the Digital System Designs By: J. M. Montenegro, S. Wunnava (Florida International University, USA)	
10:40a-10:55a	5	F	148. Network forensics in wireless VoIP networks By: J.C. Pelaez, E.B. Fernandez (Florida Atlantic University, USA)	
10:40a-10:55a		L	Coffee Break	
10:55a-11:55a	6	B	Engineering Education II	Chairperson: G. Oliver
			47. Agricultural and Biomedical Engineering: Scope and Opportunities By: M.R. Goyal (University of Puerto Rico at Mayagüez, PUERTO RICO)	
			72. Análisis Multivariante: Clasificación, Organización y Validación de Resultados By: A. Caballero (Florida International University, USA), M.M. Álvarez Suárez, G. Pérez Lechuga (Universidad Autónoma del Estado de Hidalgo, MEXICO)	
10:55a-11:55a	6	B	85. Ecuaciones Diferenciales con Audio By: M. González Hernández, J. C. Seck Tuoh Mora (Universidad Autónoma del Estado de Hidalgo, MEXICO), A. Caballero (Florida International University, USA), M. Peña Guerrero (Instituto Politécnico Nacional, MEXICO)	
10:55a-11:55a	6	A	Engineering Education I Accreditation Panel	Chairperson: M. Larrondo Petrie
			53. Strategies for Quality Assurance in Engineering Education in Latin America and the Caribbean	



General Program LACCEI 2006

Thursday, June 22, 2006 (continued)

	10:55a-11:55a	6	C	Environmental 24. Water and vegetation interactions at ecosystem scales: a two-way highway with high traffic By: F.R. Miralles-Wilhelm (Florida International University, USA), D. DeAngelis, G. Goldstein, L. Sternberg (University of Miami, USA) 191. The Tropical Environmental Observatory Network (TEON): Collaborative Science and Technology Resource that Supports Inter-hemispheric Sustainable Development By: I. Pagan-Trinidad, D. Rodríguez (University of Puerto Rico at Mayagüez, PUERTO RICO), J. Nestler (US Army Engineering Research and Development Center, USA) 199. Environmental Challenges and Global Markets for Environmental Businesses in Areas with Vulnerable Ecosystems By: B. Tansel (Florida International University, USA), N. Armestar (Universidad Peruana de Ciencias Aplicadas, PERU), S. Laha (Florida International University, USA)	Chairperson: C. Ruiz
	10:55a-11:55a	6	D	Engineering Management 250. Propuesta de una Estrategia de Mercadotecnia Competitiva en la Empresa PEMEX Telemática By: Jorge Francisco Terán-Delgado (UVB Tampico, México) 180. "Libertad!" Aplicación de un RTOS para comunicación Satelital en Bandas Amateur By: C.F. Valero Sepúlveda, R.A. Joya Olarte (Universidad Sergio Arboleda, COLOMBIA) 215. The Use of Computer Technology in Construction Contractor Organizations as a Total Jobsite Management Tool By: I.U. Ahmad, C.L. Perkinson (Florida International University, USA)	Chairperson: A. Cáceres
	10:55a-11:55a	6	E	Infrastructure 125. GreenUp Lock Filling and Emptying System Study By: M. J. Sanchez (US Army Engineering Research and Development Center, USA) 143. Correlations of CAPWAP and CASE PDA with Static Load Tests and its influence in the Current Design Practice in Puerto Rico By: M.C. Vega (University of Puerto Rico at Mayagüez, PUERTO RICO), O.J. Vargas (Langan Engineering-Miami, USA), M.A. Pando, R. Ramos (University of Puerto Rico at Mayagüez, PUERTO RICO) 157. Flow Assurance in Oil-Gas Pipelines By: M. Daas, N. Munroe, R. Srivastava, D. Roelant (Florida International University, USA)	Chairperson: A. Zilouchian
	10:55a-11:55a	6	F	Information Technology 48. Security Patterns and Secure Systems Design By: E.B. Fernández, M.M. Larrondo Petrie (Florida Atlantic University, USA) 128. Design Progression with VHDL helps Accelerate the Digital System Designs By: J. M. Montenegro, S. Wunnavu (Florida International University, USA) 161. An Energy-Efficient MAC Protocol for Wireless Sensor Networks for Wide Area Large Scale Environmental Monitoring By: M.A. Erazo, Y. Qian (University of Puerto Rico at Mayagüez, PUERTO RICO)	Chairperson: F. Ortiz
	12:00n-1:30p	Dining Room		Lunch	
	1:30p-4:30p	7	J	National Instrument Tutorials	
		8		137. A National Instrument Tutorial on Active Learning of Control Theory using Virtual Instrumentation By: I. Alvarado (National Instruments)	
		9			
	1:30p-2:30p	7	B	Engineering Education 140. Un Modelo de Plataforma Tecnológica de Información para Educación a Distancia (Instituto Nacional de Capacitación Educativa - INCE) By: A. S. Chikhani (Universidad Simón Bolívar, VENEZUELA), M. Altadonna-Scandura (TSU, VENEZUELA), Presenter: Javier Palencia 173. Using Technology to Increase Students Participation in the Learning Process By: I. Couvertier, J. Santos (University of Puerto Rico at Mayagüez, PUERTO RICO) 192. Creación de Base de Datos Digital del Cementerio de Maricao By: Evi De La Rosa Ricciardi (Universidad de Puerto Rico at Mayagüez, PUERTO RICO)	Chairperson: A. Caballero



General Program LACCEI 2006

Thursday, June 22, 2006 (continued)

1:30p-2:30p	7	G	Accreditation	Chairperson: C. K. Sankat
			23. Beyond Accreditations - Institutionalizing Continuous Improvement across Campus By: A.D. Sharma (University of Puerto Rico at Mayagüez, PUERTO RICO)	
	7	D	37. Methodology for Curricular Microdiseño of Interdiscipline of Physics Based on Integrating Problems for the Races of Engineering of UNAPEC By: E.K. Encarnación Encarnación (Universidad Pro Educación y Cultura UNAPEC, REPUBLICA DOMINICANA)	
			Environmental	Chairperson: J. Nestler
	7	A	45. Water Consumptive Use for Crops in Trinidad By: M.R. Goyal (University of Puerto Rico at Mayagüez, PUERTO RICO)	
			81. Design, Characterization, and Economic Analysis of a Low Cost Water Purification System for Mexico By: N.R. Khalili (Illinois Institute of Technology, USA), J. Acevedo, E. Ortiz Nadal (Instituto Tecnológico de Monterrey, MEXICO)	
1:30p-2:30p	7	E	213. The Integration of Remote Sensing and GIS Technologies for the Development of a Land Use/Land Cover Map of the Island of Tobago By: D. Ramsewak (University of West Indies, TRINIDAD AND TOBAGO)	
			Energy Panel	Chairperson: N. Munroe
	7	F	Energy & Econ. Develop. In the Caribbean	
			51. Energy and Economic Development in the Caribbean, By: G. Walrond (Georgetown, GUYANA), N. Munroe, H. Sands, (Florida International University, USA), E.G. Del Valle, (EGDV Consultants, USA), A. Bryant (TRINIDAD AND TOBAGO), J. Butler (Inter American Development Bank, USA)	
	7	B	Infrastructure	Chairperson: M. Ayele
			91. Relationships between road design, driver characteristics and behavior, and safety in four-lane highways By: A.M. Figueroa Medina (University of Puerto Rico at Mayagüez, PUERTO RICO), A.P. Tarko (Purdue University, USA)	
1:30p-2:30p	7	F	130. Implementation on a New Flexible Pavements Design Procedure for U.S. Military Airports By: C.R. Gonzalez, W.R. Barker (US Army Engineer Research and Development Center, USA)	
			170. Innovative Techniques in Planning and Finance of Public Transportation Projects: Lessons Learned and its Applications By: I. Burgos-Gil (Puerto Rico Highway and Transportation Authority, PUERTO RICO)	
	7	B	Industrial Engineering	Chairperson: S. Bartolomei
			33. Manufacturing Technologies in the Trinidad and Tobago Firms By: B.V. Chowdary, R.P. Daisley, A. Gittens (University of the West Indies, TRINIDAD AND TOBAGO)	
	7	B	44. Issues Involving the Blending of Curves for Design and Manufacture of Sculptured Surfaces By: A. Gittens, B.V. Chowdary (University of the West Indies, TRINIDAD AND TOBAGO)	
			221. Design of a Low Cost, Highly Functional, Multi-fingered Hand Prosthesis By: S. Nasser, D.M. Rincón, M. Rodríguez (Florida International University, USA)	
2:40p-3:40p	8	B	Engineering Education	Chairperson: A. Vázquez
			38. Education without Borders: Development of an Interdisciplinary Project Based Educational Program By: N.R. Khalili, T.M. Jacobins (Illinois Institute of Technology, USA), J. Acevedo M. E. Ortiz-Nadal (Tecnológico de Monterrey, MEXICO)	
	8	B	100. Integrating Entrepreneurship with Engineering Education: the Integrated Technology Ventures Program at the University of Florida By: M.E. Bermudez, K. Stanfill, (University of Florida, USA)	
			234. Service Learning for Community Engagement: An Interdisciplinary Approach for Engineering Education By: F. Maldonado Fortunet, L. Seijo (University of Puerto Rico at Mayagüez, PUERTO RICO)	



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Thursday, June 22, 2006 (continued)

	2:40p-3:40p	8	A	Academic Management 2. Estrategia de la Universidad de Pamplona en la formación del Ingeniero. Caso Típico en la Facultad de Ingenierías By: A. Pardo García, A.G. Acosta, J.L. Diaz Rodríguez (Universidad de Pamplona, COLOMBIA) 25. Los Decanatos como fractales del conocimiento By: Olga Basora (UNAPEC, REPUBLICA DOMINICANA) 226. El proceso de Autoevaluación en la Escuela Superior Politécnica del Litoral By: M. Patiño, C. Paredes, M. Tacle (Escuela Superior Politécnica, ECUADOR)	Chairperson: O. Basora
	2:40p-3:40p	8	D	Environmental 55. Sensitivity Analysis of HSPF using Monte Carlo Simulation and Sediment Export Coefficients in the Caribbean Region By: G.A. Suárez, L.R. Pérez-Alegría (Universidad de Puerto Rico at Mayagüez, PUERTO RICO) 129. A Multi-Objective Programming Approach for Optimal Management of the Rio Caonillas Watershed in the North of Puerto Rico By: L.R. Pérez Alegría, C. Villalta Calderón (University of Puerto Rico at Mayagüez, PUERTO RICO) 212. The Use of Geographic Information Systems for the Manipulation and Display of Coastal Data Collected at Invaders Bay, Trinidad By: D. Ramsewak (University of the West Indies, TRINIDAD AND TOBAGO)	Chairperson: C. Claudio
	2:40p-3:40p	8	G	Environmental II 105. Hydrogen Storage in Chemical Hydrides By: E.Y. Marrero-Alfonso, J.R. Gray, T.A. Davis, M.A. Matthews (University of South Carolina, USA) 249. Integrating Information across Continents for Improved Ecosystem Management: The Case of the Paraná and Mississippi Systems By: J.M. Nestler (US Army Engineer Research and Development Center, USA), C.R.M. Baigún (IIB-INTECH, ARGENTINA), N. Oldani, (Instituto de Desarrollo Tecnológico para la Industria Química, ARGENTINA), C. Vionnet (Universidad Nacional del Litoral, ARGENTINA), L. Weber (University of Iowa, USA) 248. Environmental Field Facility for Real-time monitoring as Part of the Collaborative Large-scale Engineering Analysis Network for Environmental Research (CLEANER) Program By: J.L. Schnoor, J.V. Loperfido, T. Papanicolaou, M. Muste, (University of Iowa, USA)	Chairperson: J. Nestler
	2:40p-3:40p	8	E	Infrastructure 171. Development of a Regional Intelligent Transportation System Architecture for the Metropolitan Area of San Juan, Puerto Rico By: D. Valdés, M.I. Fernández (University of Puerto Rico at Mayagüez, PUERTO RICO), F. Luyanda-Andino (Puerto Rico Highway and Transportation Authority, PUERTO RICO) 174. Evaluation of VISSIM, a Microsimulation Model to Represent an Arterial Network at Mayagüez, Puerto Rico By: E. González Vélez, D.M. Valdés Díaz, F. Luyanda Villafañe (University of Puerto Rico at Mayagüez, PUERTO RICO) 177. Workforce development in transportation: Role of Minority Serving Institutions By: M. Ayele (Federal Highway Administration, USA)	Chairperson: B. Colucci
	2:40p-3:40p	8	F	Industrial Engineering 41. Engineers in a Global Economy: Graduate Education in Industrial Management By: C. Rodríguez Monroy, F. Ruiz López (Universidad Politécnica de Madrid, SPAIN) 27. Vigilando el Medio Ambiente del Ingeniero Industrial: Grandes Desafíos en el Marco de la Revolución Tecnológica By: M.F. Ramirez Martes (UNAPEC, REPUBLICA DOMINICANA) 241. Diseño Robot Explorador de Luz By: E. Rodriguez, E. Cruz, M. Vásquez, J. Ramirez (UNAPEC, REPÚBLICA DOMINICANA)	Chairperson: C. Rodríguez-Monroy
	3:40p-5:30p	C		Poster Display & Coffee Break	
	6:00p-11:00p	CIAPR		Gala Dinner	



General Program LACCEI 2006

Friday, June 23, 2006	8:00a-9:00a		K	Registration	
	8:30a-9:30a	9	B	Engineering Education 123. Chemical Engineering and Second Language Education By: N. Justiz-Smith, G. Junior Virgo (University of Technology, JAMAICA) 132. Steps to Attain an Internship or a Co-Op By: A. Vazquez (University of Central Florida, USA) 222. Effects of College Degree Program Culture on Female and Minority Student Science, Technology, Engineering and Mathematics (STEM) Participation By: K. Borman (University of South Florida), M.A. Hanson (Center for Career and Community Research), W. Tyson, H. Meikle (University of South Florida, USA)	Chairpeson: M. A. Mathews
	8:30a-9:30a	9	A	Faculty Development 15. Trustworthiness and Integrity: Cardinal Virtues for Engineers By: C. Carbajal, E. Chávez (Instituto Tecnológico de Monterrey-Campus México, MEXICO) 95. Steps toward the Improvement of Recruitment and Retention Processes of Engineering Female Professors at the University of Puerto Rico at Mayagüez By: S.M. Bartolomei-Suárez, V. Cesani-Vázquez, M. Irizarry, F.M. Toledo-Feria (Universidad de Puerto Rico at Mayagüez, PUERTO RICO) 231. Faculty Development Program at FIU: A Review after Two Years of Implementation By: Shih-Ming Lee, Mario Sanchez (Florida International University, USA)	Chairperson: J. Rodas
	8:30a-9:30a	9	C	Environmental 16. High Explosives Alkaline Hydrolysis in Continuous Stirred Tank Reactor By: S. Hwang (University of Puerto Rico at Mayagüez, PUERTO RICO), J.L. Davis (US Army Engineer Research and Development Center, USA) 82. The PDCLab Grid Test-bed at UPRM By: K. Cruz, J. Sanabria, F. Cintron, W. Rivera (University of Puerto Rico at Mayagüez, PUERTO RICO) 168. Web-based Data Processing for Hydro-ecological Applications By: L.X. Bautista Roza, D. Rodríguez (University of Puerto Rico at Mayagüez, PUERTO RICO)	Chairperson: A. Pardo García
	8:30a-9:30a	9	D	Materials 28. Application of Rapid Prototyping Technology to Ear Mold Production By: Z. J. Czajkiewicz (Robert Morris University, USA) 31. Cost-Effective Repair of Marine Corrosion Damage By: D.V. Reddy, J.C. Bolivar, R. Wheeler, T. Iverson, S. Hincapie, V. Gutierrez (Florida Atlantic University, USA) 32. Investigations into Grinding under Cryogenic Cooling By: R.P. Daisley, B.V. Chowdary (University of the West Indies, TRINIDAD AND TOBAGO)	Chairperson: Z. J. Czajkiewicz
	8:30a-9:30a	9	E	Construction 19. The e-revolution: how could e-applications change the traditional construction management approach in Puerto Rico By: J.L. Perdomo (University of Puerto Rico at Mayagüez, PUERTO RICO) 22. Enfoques para Estimar Costos de Construcción Utilizando Excel By: J.F. Lluch, J.C. Torrens (University of Puerto Rico at Mayagüez, PUERTO RICO) 87. Relación entre la Cultura Organizacional y el Éxito en la Ejecución de Proyectos: Modelo SPV By: R. Centeno, M. Serafín Plasencia (UNEXPO, VENEZUELA)	Chairperson: C. L. Perkinson



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Friday, June 23, 2006 (continued)

8:30a-9:30a	9	F	Visualization in IT and IE	Chairperson: C. D. Iskander
			78. Packet Switched H.264 Video Streaming Over WCDMA Networks By: C. Murillo, C.D. Iskander (Florida Atlantic University, USA)	
			149. Network Visualization using RGL By: J.L. Duffany (Universidad del Turabo, PUERTO RICO), W.N. Pabon-Ramírez (University of Puerto Rico at Mayagüez, PUERTO RICO)	
			167. Issues in Terrain Visualization for Environmental Monitoring Applications By: R. Veguilla, N.G. Santiago, D.A. Rodríguez (University of Puerto Rico at Mayagüez, PUERTO RICO)	
9:40a-10:40a	10	B	Engineering Education	Chairperson: R. López
			58. UPRM-CHEM E Sloan Foundation Doctoral Feeder Program By: J.A. Colucci (University of Puerto Rico at Mayagüez, PUERTO RICO)	
			106. An Innovative Graduate Seminar for Scholarly Development By: E.Y. Marrero-Alfonso, M.A. Matthews (University of South Carolina, USA)	
			107. Innovación de currícula de programas de Posgrado de Orientación Vocacional en México By: H. Vela Alanís, D.M. Martínez Salomón, F. Ortiz Rodríguez (Universidad Valle del Bravo, MEXICO)	
9:40a-10:40a	10	A	Technology and Society	Chairperson: D. R. Alvarez
			17. Una propuesta de Educación para la Tecnología By: J.A. Aravena-Reyes, M.L. Aguilar Molina, W. Azevedo Junior (Universidade Federal de Juiz de Fora, BRAZIL)	
			118. Detección de Efectividad de Programas Gubernamentales Mediante la Metodología KDSM By: J. Rodas (Technological Institute of Monterrey, MEXICO), G. Alvarado (Escuela de Negocios Universidad de Barcelona, ESPANA), F. Vázquez (Instituto Politécnico Nacional Iztacalco, MEXICO)	
			133. La Educación Tecnológica en el Perú By: G. Álvarez Flores, L.M. Villanueva (Institución San José de Tiabaya, PERU), D.R. Álvarez (Universidad Católica de Santa María, PERU)	
9:40a-10:40a	10	C	Biotechnology	Chairperson: S. Hwang
			13. The advanced control of applied artificial cloning to viscosity sensor By: A. Pardo Garcia, J.L. Diaz Rodríguez (Universidad Autonoma de Bucaramanga, COLOMBIA)	
			150. Interfacing Bioreactors with Membrane Filtration Technologies for Closed Loop Water Recovery and Recycling By: B. Tansel (Florida International University, USA)	
			163. Initiatives from the Industrial Biotechnology Program at UPR-Mayagüez to Promote and Develop a Biotechnology-Based Ecosystem By: R. Buxeda, L. Saliceti-Piazza (Universidad de Puerto Rico at Mayagüez, PUERTO RICO)	
9:40a-10:40a	10	D	Materials	Chairperson: B.V. Chowdary
			50. Marine Durability Characteristics of Rice Husk Ash-Modified Reinforcement Concrete By: D.V. Reddy, M. Álvarez (Florida Atlantic University, USA)	
			52. Advance Materials Engineering Research Institute By: W.K. Jones, N. Nicks, R. Castillo (Florida International University, USA)	
			89. Compressive Stress-Strain Behavior of Concrete with Variable Confinement By: J.F. Davila, V.A. Lammoglia, F.J. Acosta, M.A. Pando (University of Puerto Rico at Mayagüez, PUERTO RICO)	



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Friday, June 23, 2006 (continued)

	9:40a-10:40a	10	E	Construction 88. Modelo de Competencias para el Diseño de Programas de Formación de Gerentes de Proyectos By: R. Centeno, M. Serafin Plasencia (UNEXPO, VENEZUELA) 194. La gerencia centrada en valores condición que potencia la productividad de la organización By: M. Sena Vittini (UNAPEC, REPUBLICA DOMINICANA) 165. Automated Field Material Procurement using Pocket PCs By: J.L. Perdomo (University of Puerto Rico at Mayagüez, PUERTO RICO), Walid Thabet (Virginia Tech, USA)	Chairperson: R. Centeno
	9:40a-10:40a	10	F	Algorithms in IE and EE 94. Aplicación de Sistemas Expertos en el Modelaje de la Predicción de Fallas en Activos Industriales By: J. Palencia, A. Chikhani, J. Lara, O. Aguillón, M. Rojas, A. Tremante (Universidad Simón Bolívar, VENEZUELA) 238. Minimization of Cmax in Parallel Machines with Identical Parallel Machines , Release and Setup Times By: C. Aleán Zapata, V. Manotas Niño, M. Orozco Arredondo, I. Ojito Castro, C. D. Paternina-Arboleda (Universidad del Norte, COLOMBIA) 239. A heuristic alternative to optimize makespan over m parallel machines with release and sequence-dependent setup times Pm rj, sjk Cmax By: J. López, V. Roza, I. Saavedra, C. D. Paternina-Arboleda (Universidad del Norte, COLOMBIA)	Chairperson: J.L. Duffany
	10:40a-10:55a	Dining Room		Coffee Break	
	10:55a-11:55a	11	B	Outreach 83. Science Hands-on Festival for Kids By: M. Exposito, M. Delgado (Florida International University, USA), M. Nuñez (Coral Park Elementary, USA), J. Machado (Florida International University, USA) 152. Educational Modules for High School Teachers on Materials Engineering By: J. Santos, O.M. Suárez (University of Puerto Rico, Mayagüez, PUERTO RICO), W. Crone, G.M. Zenner (University of Wisconsin, USA) 154. Assessment and Improvement of the Program for Severely Emotionally Disabled and At-Risk Students By: A. Caballero, K. Yen, G. Roig (Florida International University, USA), A. Azan (Barbara Goleman Sr. High School, Florida, USA), R.J. Morrison (Division of Exceptional Student Education Florida, USA), I. Lopez-Saura (Instituto Tecnológico de Monterrey, MEXICO)	Chairperson: G. Roig
	10:55a-11:55a	11	A	Technology and Society 73. European Union REACH proposal: Chemical Regulations and International Economics By: N.H. Gapinski (University of Pittsburgh, USA), A. J. Gapinski (Penn State University-Fayette, USA), E.A. Rudnicka (University of Pittsburgh at Greensburg, USA) 117. Analyzing a psychiatric domain using KDSM methodology By: J. Rodas (Technological Institute of Monterrey, MEXICO), K. Gibert (Technical University of Catalunya, Barcelona, SPAIN), E. Rojo (University of Barcelona, SPAIN)	Chairperson: J.A. Aravena-Reyes



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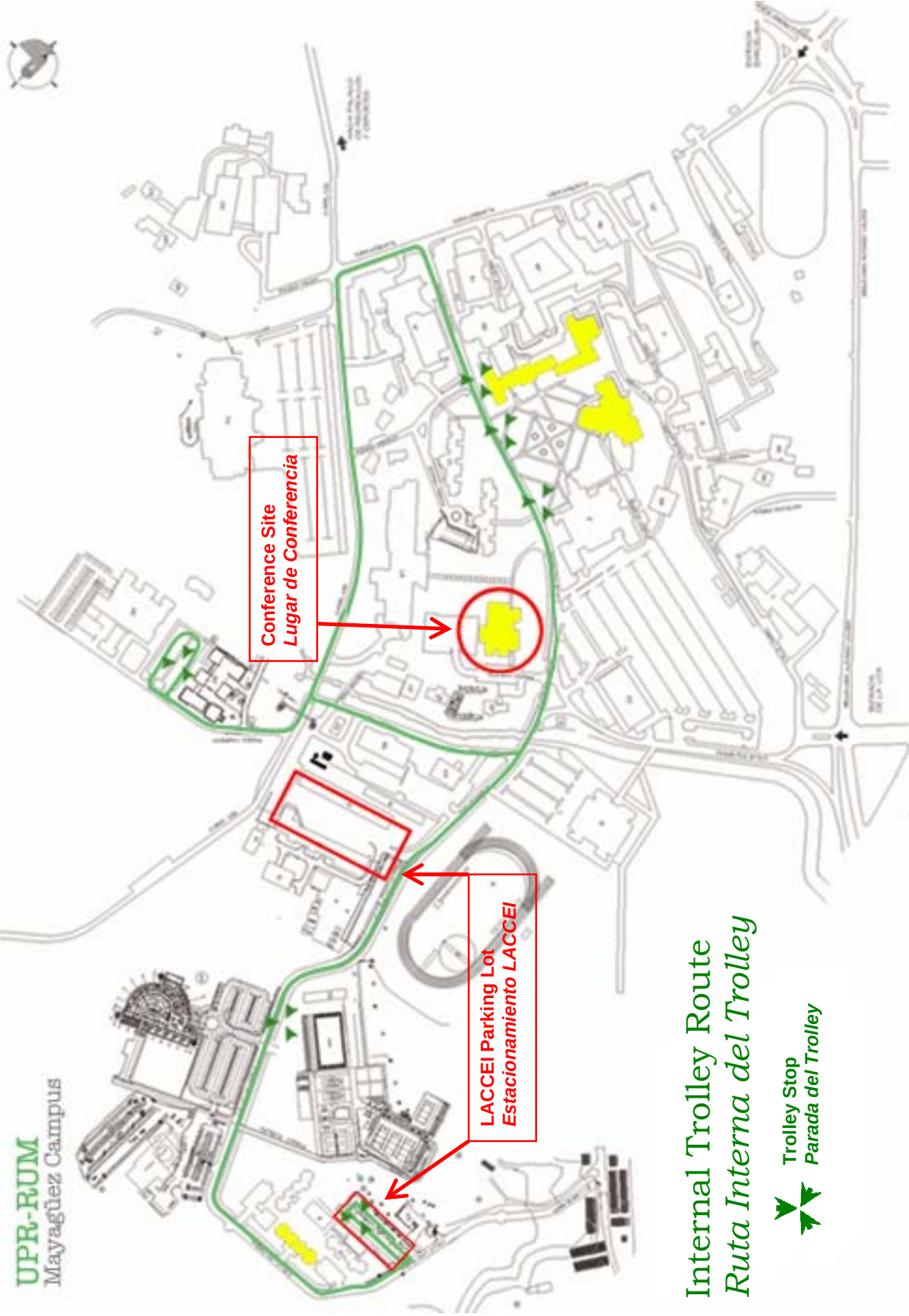
	10:55a-11:55a	11	C	Biotechnology 164. Capping Design Approaches: Natural and Engineered Isolation for Reduction in Bioavailability, By: C.E. Ruiz, P.R. Schroeder (U.S. Army ERDC, USA) 75. La Producción de la Energía y la Mitigación de Contaminación en las Granjas Avícolas de Jamaica y Pensilvania, By: S. Grant, A. Mashalleck, N. Brown (University of Technology, JAMAICA) 220. Sampling Practices for Bacterial and Pathogen Detection in Reclaimed Water and its Influences on Results, By: C. Claudio (University of South Florida, USA)	Chairperson: B. Tansel
	10:55a-11:55a	11	D	Materials 101. Strain-Based Damage Model for Concrete under Expansive Processes, By: A. Cáceres, J. Matos (University of Puerto Rico at Mayagüez, PUERTO RICO) 111. Neutral Hydrolytic Depolymerisation of Polyethylene Terephthalate Bottles, By: S. Wright, M. Gayle, G. Junior Virgo (University of Technology, JAMAICA) 151. Study of Low-Cycle Fatigue Al-Mg Alloys, By: N. Plaza (EM Hostos High School, PUERTO RICO), S. Pedraza, M. Suárez (University of Puerto Rico at Mayagüez, PUERTO RICO)	Chairperson: M. Suárez
	10:55a-11:55a	11	E	Community Service Panel	Chairperson: L.R. Seijo-Maldonado
		11	F	Algorithms in IT and IE	Chairperson: J. Palencia
				138. Systems of Inequations, By: J.L. Duffany (Universidad del Turabo, PUERTO RICO)	
				237. An alternative algorithm for problems defined as: $P_m r_j, s_{jk} C_{max}$ By: G. Bellini Cabrera, M. C. Sarabia Viaña, E. L. Solano Charris, C. M. Therán Brochero, C. D. Paternina-Arboleda (Universidad del Norte, COLOMBIA) 240. Mathematical formulation for a mixed model assembly line balancing problem with stochastic processing times, By: C. D. Paternina-Arboleda (Universidad del Norte, COLOMBIA), J.R. Montoya Torres (Ecole Nationale Supérieur des Mines de Saint Etienne, FRANCE), E.A. Moscoso (Universidad del Norte, COLOMBIA)	
	12:00n-1:00p	Dining Room	Lunch		
	1:00p-2:00p	12	A	Chancellor's and Dean's Panel Closing Ceremonies/Closure	

NOTES



NOTES





Internal Trolley Route
Ruta Interna del Trolley

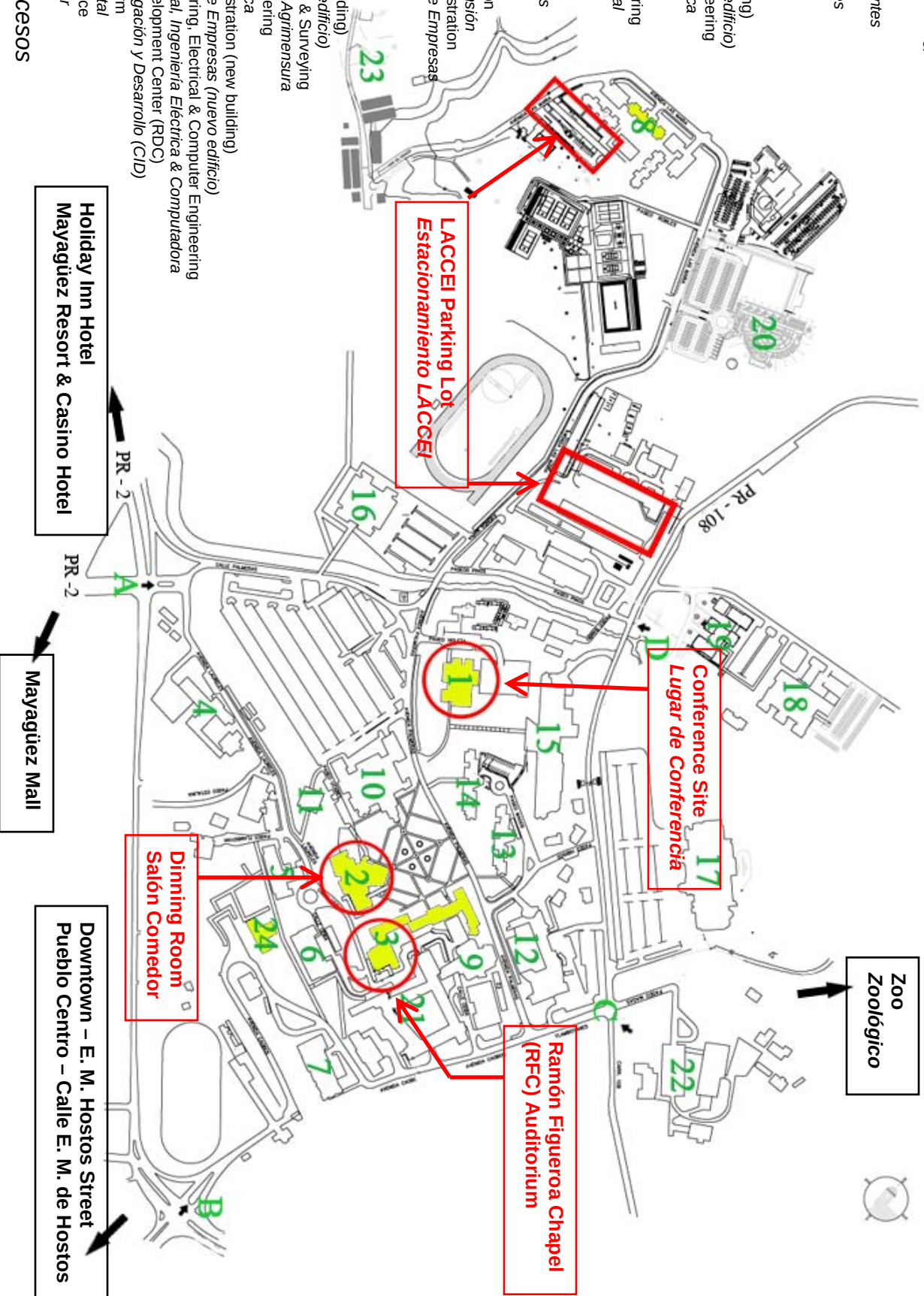
 Trolley Stop
Parada del Trolley

Legend - Leyenda Buildings - Edificios

- 1 – Josefa Torres (Nursing) *Enfermería*
- 2 - Student Center *Centro de Estudiantes*
- 3 - General Studies *Estudios Generales*
- 4 - Agriculture *Agricultura*
- 5 - Mathematics *Matemáticas*
- 6 - Biology (old building) *Biología (antiguo edificio)*
- 7 - Mechanical Engineering *Ingeniería Mecánica*
- 8 - Colegio Hotel *Hotel Colegio*
- 9 - Industrial Engineering *Ingeniería Industrial*
- 10 - Library *Biblioteca*
- 11 - Medical Services *Servicios Médicos*
- 12 - Physics *Física*
- 13 - Extension Division *División de Extensión*
- 14 - Business Administration *Administración de Empresas*
- 15 - Chemistry *Química*
- 16 - Coliseum *Coliseo*
- 17 - Biology (new building) *Biología (nuevo edificio)*
- 18 - Civil Engineering & Surveying *Ingeniería Civil y Agrimensura*
- 19 - Chemical Engineering *Ingeniería Química*
- 20 - Business Administration (new building) *Administración de Empresas (nuevo edificio)*
- 21 - General Engineering, Electrical & Computer Engineering *Ingeniería General, Ingeniería Eléctrica & Computadora*
- 22 - Research & Development Center (RDC) *Centro de Investigación y Desarrollo (CID)*
- 23 - Experimental Farm *Finca Experimental*
- 24 – Chancellor's Office *Oficina del Rector*

Accesses - Accesos

- A - Vía Entrance - *Entrada de La Vía*
- B - Barcelona Entrance - *Entrada de Barcelona*
- C - Zoo Entrance - *Entrada del Zoológico*
- D - PR - 108 Road Entrance - *Entrada de la Carretera PR - 108*



University of Puerto Rico – Mayagüez Campus
Universidad de Puerto Rico – Recinto de Mayagüez

The logo for the LACCEI 2007 Annual Conference is a circular emblem. At the top, the text "LACCEI 2007" is written in a large, bold, yellow font with a black outline. Below this, a ring of various national flags from Latin American and Caribbean countries is arranged in a circle. The central part of the emblem is a circular collage. The left half of the collage shows a tall, ornate monument topped with a statue of a winged figure, set against a purple and blue sky. The right half shows a night view of a city with lights reflecting on water, with a large agave plant in the foreground. Overlaid on the center of the collage is the year "2007" in a large, blue, stylized font, and below it, the text "LACCEI Annual Conference" in a smaller, black font.

GOES TO MEXICO!

For Details

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