International Network for Engineering Education and Research (iNEER) General Secretariat

iNEER REPORT FOR 2006

General Secretariat

iNEER e-mail: <u>ineer@ineer.org</u> <u>http://www.ineer.org</u>

March 26, 2007

A. Introduction

iNEER continued to make progress in 2006 networking, information dissemination and publication. ICEE-2006 was convened in San Juan, Puerto Rico in July. The iNEER Special Volume for 2006, *Innovations 2006*, was published and distributed to all participoants of ICEE-2006. Awards were given out in all three categories.

Membership in the iNEER Network increased from All these activities led to a significant increase in the global membership roster, which reached 25,904 on December 22, 2005.

The iNEER Secretariat continued to operate be in good fanancial health.

B. ICEE-2006: San Juan, Puerto Rico, July 23-28, 2006

Held under mostly clear blue skies during July 23-28, 2006, ICEE-2006 took place at the Condado Plaza Hotel and Resort in San Juan, on the northern coast of Puerto Rico, the beautiful tropical island lapped by the clear blue waters of the Atlantic and the Caribbean Sea. With participants from 37 countries, the conference program was organized around the theme: "Education, Research and Development: Fostering Economic Growth."

The conference host was the University of Puerto Rico, Mayaguez (UPRM). Serving as General Chair was Prof. Jorge Velez-Arocho, the Chancellor of UPRM. Professor Ramon Vasquez, Dean of the College of Engineering, was Conference Chair. Program Co-Chairs were Professors Sandra Cruz-Pol and Lueny Morell, Anand Sharma and O. Marcelo Suarez. Professor Dan Budny served as Technical Committee Co-Chair.

Close to 400 papers were presented in 134 technical sessions. These fell under the broad areas of accreditation and assessment; academic and administration issues; enhancing learning and the undergraduate experience; technology for teaching and learning; diversity issues and women and minorities in engineering and technology; engineering practice trends and issues; curriculum design and innovation; partnerships for success; and integrating research and education.

Delegates were treated to food accentuated with *adobo* and *sofrito*, the herbs that give Puerto Rican cuisine its distinct color and taste. When not attending sessions, delegates had an opportunity to tour the world famous rain forest or relax at one of the lovely beaches nearby. The poolside dinner on Monday night was followed by traditional dances performed by dances adorned with colorful island costumes. Delegates joined in the dancing and stayed up late.

To many, it was an unforgettable experience.

Opening Plenary

Welcoming the participants in a speech given at the opening plenary was Prof. <u>Tomas Cermak</u>, Rector of VSB-Technical University of Ostrava and Chair of the iNEER Board. Professor Velez-Arocho delivered the opening remarks. He was followed by the Hon. Gabriel Alcaraz, Secretary of Transportation and Public Works of the Government of Puerto Rico; Antonio Garcia Padillo, Esq., President of the University of Puerto Rico System; and Prof. Ramon Vasquez, Dean of the College of Engineering, UPRM. Dr. Win Aung, Secretary-General of iNEER, also delivered opening remarks; see:

http://www.ineer.org/Events/ICEE2006Info/2006-07-24_Opening_session_Final-2.pdf

Keynote Speakers

<u>Dr. Arden Bement</u>, Director of the National Science Foundation in Arlington, Virginia, U.S.A., delivered the Luncheon Remarks on Monday, July 24: <u>http://www.ineer.org/Events/ICEE2006Info/2006-07-24_Bement_Luncheon_Remarks.htm</u>

Conference keynoters include Dr. Trevor Newsom, Director of Research and Regional Sciences, Ireland's Queens University; Dr. Lily Chan, Director, Industry and Technology Relations Office, National University of Singapore; Dr. Alejandro Jofré, Director, Center of Mathematical Modeling, Universidad de Chile; and Hon. Jorge Silva Puras, Secretary of Economic Development and Commerce, Government of Puerto Rico. Following their remarks, they participated in a panel discussion on "Partnerships for Economic Development: the Role of Universities, Governments and the Private Sector."

Dr. Wayne Johnson, Vice President, HP University Relations Worldwide, presented the last keynote speech on July 27, 2006: http://icee2006.uprm.edu/PDF/WayneJohnson.pdf

Technical sessions highlighting education innovations of the NSF Engineering Research Centers

The conference program included two special sessions aimed at disseminating information on recent innovations emanating from the NSF Engineering Research Centers, a flagship program that supports research focused on spawning whole new industries or radically transform the product lines, processing technologies, or service delivery methodologies of current industries.

Presented on Tuesday, July 25, these sessions were entitled "How People Learn I" and "How People Learn II."

Letters of Felicitations

Leading representatives of several institutions presented Chancellor Velez-Arocho with letters of felicitations during the conference banquet, held in the evening on Tuesday, July 25 at the San Juan Museum in Old San Juan.

Copies of these letters are appended as Appendix 1 to this report.

Awards

The conference banquet Tuesday night closed with the presentation of <u>awards</u> (<u>http://www.ineer.org/Awards/2006-07-25_2006_Awards.pdf</u>) to the following individuals:

Leadership Award: Achievement Award:	Wayne Johnson, Vice President, HP University Relations Worldwide Daniel Hirleman, the William E. and Florence E. Perry Head of the School of Mechanical Engineering at Purdue University				
Achievement Award:	Jerzy Moscinski is the Rector's representative for international collaboration at the Silesian University of Technology in Gliwice, Poland				
Recognition Award:	Richard Spontak, Professor, Department of Chemical and				
C	Biomolecular Engineering, and Department of Materials Science and Engineering, North Carolina State University				
Recognition Award:	P. K. Raju and Chetan S. Sankar, the Thomas Walter Professors,				
C	Departments of Mechanical Engineering and Management, Auburn				
	University				
iNEER Award:	Jorge Velez-Arocho, Chancellor, UPRM				
Meritorious Service Awa	rd: Ramon Vasquez, Sandra Cruz-Pol, Anand Sharma, College of Engineering, UPRM Lueny Morell, Director, University Relations – Latin America Hewlett-Packard Company Dan Budny, University of Pittsburgh				

Award citations have been posted on the iNEER website through the link given above.

C. Photo Galleries for ICEE-2006

A <u>photo gallery</u> (<u>http://www.ineer.org/Photo/2006ICEE/Welcome.htm</u>) for ICEE-2006 conference has been posted at the iNEER website. <u>Additional photos</u> are available at the conference website: <u>http://icee2006.uprm.edu/Photos/</u>.

D. Leadership Council Meeting

The newly formed Leadership Council of iNEER met on Tuesday, July 25, from 10 AM - 12Noon, during ICEE-2006. The meeting was attended by 23 leaders of engineering education and research Dr. Arden Bement, Director of the National Science Foundation, USA.

David Chang, Chancellor of Polytechnic University of New York and Interim Co-Chair of the Council, opened the meeting. After expressing his gratitude to everyone for attending, he invited Win Aung, Secretary-General of iNEER, to present his remarks on behalf of iNEER.

Win Aung explained the rationale for the formation of the Council by the iNEER Board, and its charge to the Council. He reiterated the Board's vision to see the Council evolve into a platform that enables the sharing of information and the establishment of cooperative exchanges by leaders of engineering education and research. He then emphasized the specific charge to the Council, namely, to plan and execute programs and activities so as to provide a platform for networking among leaders of universities and colleges, and senior representatives of industry and government from around the world. He thanked the Interim Co-Chairs Professor David Chang

and Professor Wojciech Zielinski, Rector of Silesian University of Technology for their leadership in moving forward the establishment of the Council. He then called for election of permanent co-chairs, and those in attendance unanimously voted to elect the two Interim Co-Chairs to serve two-year, renewal terms as Co-Chairs.

Following his election as Co-Chair, David Chang then outlined his vision for the Council, emphasizing his interest to see the Council develop a set of realistic, achievable action items for implementation in the next few years. One of the topics that attracted the interest of those in attendance was the development of a "cyberinfrastructure for global engineering education." Here, there is a potential for tie-in withg related ongoing work sponsored by Hewlett-Packard Company. It was agreed by those in attendance that an action plan should be developed for discussion prior to the next iNEER conference, ICEE-2007, in Coimbra, Portugal.

Council meetings are being developed by the c-chairs with the assistance of the iNEER Secretary-General.

E. Publication and Distribution of "Innovations 2006"

The iNEER Special Volume for 2006, "<u>Innovations 2006</u>," <u>http://www.ineer.org/iNEERPapers/Welcome.htm</u>

was published on July 15, 2006. Copies of the hardcopy book were distributed at ICEE-2006 to participants and invited guests.

The sixth book in the iNEER Innovations Series, "Innovations 2006" includes fifty-three articles written by experts from different parts of the world. Each article has passed through a rigorous peer review process and represents an important milestone of accomplishment recognized by the international community of scholars.

From the diverse topics covered in this volume there emerges a picture of the regional trends for education and research development. Different countries are focusing on different problems arising from their individual education policies, economic interests and workforce needs, but all share a common interest in furthering national economic development and prosperity by promoting and advancing innovations in engineering education and research.

This volume shows that student-centered engineering education is spreading to more regions of the world, and its advantages are being more widely understood and embraced. The volume also concerns: new curricular materials that address the needs of the 21st Century; the adaptation of e-learning and Internet technologies in teaching and learning; collaborative and experiential learning; inculcating students with a global cultural and societal perspective; multidisciplinary design and integration; and assessment, accreditation and quality assurance.

As befitting the title of this volume, the lead chapter deals with the importance of innovations in the global marketplace, and is authored by G. Gilbert Cloyd of Procter & Gamble Company (P&G), a company noted for product innovations that have propelled it to become the dominant player in the worldwide consumer product market. As Chief Technology Officer of P&G, he writes (Chapter 1) from the perspective of an industry giant with an annual R&D budget of \$2

billion, annual sales of over US\$70 billion, and over 9,000 people worldwide in R&D. He calls for the U.S. to produce the innovation talent needed by refocusing on physical science and engineering education as a national priority, and for a new approach to academia-industry collaboration. He also outlines the realities and opportunities presented by what he calls developed market countries and low-income market countries. He writes that, for U.S.-based global companies to remain competitive and continue to grow, they must leverage the capabilities and cost-effectiveness in low-income countries as well as their emerging markets for growth.

To ensure that students will be successful as engineers in the global marketplace as discussed by Cloyd, it will be necessary for them to acquire, in addition to a strong fundamental technical background and other attributes, a global view with an appreciation of the different cultures in our diverse world.

Following are members of the Board of Editors for the 2006 iNEER Special Volume: Win Aung (USA); Caroline Crosthwaite (Australia), Ramon Vasquez Espinosa (USA), Jerzy Moscinski (Poland), Shan-Hwei Ou (ROC), and Luis Sanchez Ruiz (Spain). For their biographies, please visit:

http://www.ineer.org/iNEERPapers/2006_BOARD-OF-EDITORS.pdf

The list of reviewers for the 2006 Special Volume is available at: http://www.ineer.org/iNEERPapers/2006_Reviewers.pdf

The Table of Contents and Preface are available at: <u>http://www.ineer.org/iNEERPapers/INNOVATIONS_2006_Front-Materials_3.pdf</u>

A general invitation for articles for the next iNEER Special Volume, "<u>Innovations 2007</u>," (<u>http://www.ineer.org/iNEERPapers/Welcome.htm</u>) was issued during ICEE-2006. ICEE-2006 authors were informed that they were are welcome to submit articles, as well as inform their colleagues to submit articles.

F. Joint iNEER Board-ISC Meeting, San Juan, Puerto Rico, July 23, 2006

A joint meeting of the iNEER Board-International Steering Committee (ISC) held at the Condado Plaza Hotel on July 23, 2006. Prof. Tomas Cermak and Prof. Jorge Velez Arocho cochaired the meeting. The agenda is given in Appendix 2.

G. Operation of iNEER Secretariat and Financial Report

The 2005 financial statement and the auditor's report for iNEER were prepared Mr. Wang Neng-Hsiang, a chartered public accountant whose selection has been approved by the iNEER Board. The auditor's report is on file and available upon request; the financial statement is attached in Appendix 3.

Respectfully Submitted,

Win Aung, Ph.D., P.E., Dr.h.c. Secretary General iNEER

APPENDIX 1

Letters of Felicitation for Prof. Jorge Velez Arocho, Executive Chair, ICEE-2006

Prof. Che-Ho Wei, Taiwan National Chiao-Tung U., Hsinchu Past Chairman, National Science Council Taipei, Taiwan, ROC Member, iNEER Board Prof. Wojciech Zielinski, Gliwice, Poland Rector, Silesian U. of Technology Gliwice, Poland Member, iNEER Board General Chair, ICEE-2006



Professor Jorge Velez-Arocho , Ph.D. Rector University of Puerto Rico Mayaguez, Puerto Rico

Dear Professor Velez-Arocho :

July 12,2006

On behalf of the Institute of Engineering Taiwan, I have the great pleasure to express my congratulations to you and your associates on the opening of ICEE-2006. Under your leadeship, the long-time dedication of your colleagues at UPRM not only has advanced the engineering education in Pierro Rico but also built and strengthened the international partnership. We are honored to be part of the iNEER community to congratulate your great achievements and wish the conference very successful and fruitful. Congratulations again and best regards,

Sincerely, Che-Ho Wei President, Institute of Engineering Education Taiwan.



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conference organizer I understand how much effort you put 2006 organization and I am sure that this conference is going he most successful events for the engineering education
my deepest congrandations?
Sincerely yours,

ingerton Prof. dr hab. inž. Wojciech Zieliński

Prof. Luis Scavarda, Rio de Janeiro, Brazil Vice Rector, Catholic University of Rio de Janeiro Rio de Janeiro, Brazil Member, iNEER Board Prof. Vojislav Ilic, Sydney, Australia University of West Sydney Sydney, Australia Member, iNEER Board







Mayaguez, Puerto Rico Dear Professor Velez-Arocho

> e are delighted at this opportunity to visit Puerto Rico and congrabulate you dyour colleagues for having the ICEE 2006. Conference in such a picturesque ting.

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sant role in the process. It you for having us here, congratulations and best wishes I

Sincerety.

Prof. Shan-Hwei Ou, President Tajen Institute of Technology Pingtung, Taiwan, R.O.C Member, iNEER Board General Chair, iCEER-2005 Prof. Josef Mecsi, Dean Pollack Mihaly Faculty of Engineering Universy of Pecs, Pecs, Hungary General Chair, ICEE-2008



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Prof. Ryszard Tadeusiewicz, Past Rector AGH University of Science and Technology Krakow, Poland Prof. Uriel Cukierman National University of Technology Buenos Aeires, Argentina General Chair, ICEE-2010

Ph.D. 3 University Dear Pro	e Jangy Velan-Annelin, semalifysis altrein (f velat, dyser Velan-Annelin,
1 would	fanner Velez-Arocho,
You an	like to congritulate you and all out collengues on the opening ICEE 2006.
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Professor Jorge Velez-Arocho Rector, University of Puerto Ric General Chair, ICEE-2006 San Juan, Puerto Rico

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Prof. Ing. Ján Bujňák, Ph.D. Rector, Universityof Zilina Zilina, Slovakia Prof. Richard Barnett President and Vice-Chancellor University of Ulster Belfast, UK

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Prof. Ing. Ján Bujásák, PhD Rector	President and Vice-Chancellor 9 th International Conterence on Engineering Education, San Juan, Puerto Rico, USA, 23 – 28 July 2006	ster.ac.uk

Prof. Tomas Cermak, Rector Technical University of Ostrava Ostrava, Czech Republic Chair, iNEER Board General Chair, ICEE-1999

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loading members ICEE and loating university of ICEE 2000 and ICEER, 2004. J below,
that my congratulation could be adreamd also on behalf of the OPEER, board.
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dia of matual program through international partnership. Now age of information and
communication technologies and global accounty have opened the world of science and
registering for pressus of international collaboration between partners from different
nations, factory and culture. Engineering today is much more interdisciplinary and more
complex then was potenties and the program of engineering is the most important factor of
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APPENDIX 2

JOINT INEER BOARD/ISC MEETING 3:30-6:30 PM, Sunday, July 23, 2006, San Juan, Puerto Rico

Co-Chairs:

Tomas Cermak, Chair, iNEER Board Rector, VSB-Technical University of Ostrava Jorge Velez-Arocho, Executive Chair, ICEE-2006 Chancellor, University of Puerto Rico, Mayaguez,m PR Secretary: Win Aung, Secretary-General, iNEER

AGENDA (Draft)

- 1. Welcome and Introduction Cermak, Velez-Arocho (10 minutes)
- 2. Planning, Implementation, Highlights of ICEE-2006 Vasquez/Cruz-Pol (10)
- 3. iNEER Report Win Aung (10)
- 4. ICEE-2005 Final Report Zielinki/Moscinski (10)
- 5. Upcoming Conferences:
 - ICEE-2007 Report Furtado/Rasteiro (10) iCEER-2007 Report – Kalam (10) ICEE-2008 – Mecsi/Moson/Kukai (10) iCEER-2008 – Saliah-Hassane (10) ICEE-2009 – Kim (10) ICEE-2010 – Cukierman (10)
- 6. Leadership Council Chang (10)
- 7. Awards Committee Zielinski/Velez-Arocho/Wei/Fox (10)
- 8. Engineer of the Americas Scavarda/Morell (10)
- 9. Country Representation James Uhomoibhi (10)
- 10. Adjourn

APPENDIX 3

Financial Statements

	For the Twelve Months Enging December 31, 2005				For the Twelve Months Ending December 31, 2006		
	MD	NJ	TOTAL	MI) NJ	TOTAL	
Revenues Income	\$ 114,824.61 \$	29,443.71	\$ 144,268.32	\$ 117,47	3.97 \$ -	\$ 117,473.97	
Total Revenues	114,824.61	29,443.71	144,268.32	117,47	3.97 -	117,473.97	
Expenditures							
Office Expenditures	19,467.33	-	19,467.33	12,04	3.31 -	12,043.31	
Travel Expenditures	16,936.19	5,416.00	22,352.19	12,20	2.55 -	12,202.55	
Other Expenditures	36,480.48	29,808.78	66,289.26	84,11	6.79 29,813.17	113,929.96	
Meeting-related Expenditures	21,588.19	-	21,588.19	17,24	1.97 -	17,241.97	
Total Expenses	94,472.19	35,224.78	129,696.97	125,60	4.62 29,813.17	155,417.79	
Net Income	\$ 20,352.42 \$	(5,781.07)	\$ 16,421.52	\$ (8,13	0.65) \$ (29,813.17)) \$ (37,943.82)	

NOTES TO FINANCIAL STATEMENTS:

- 1. The International Network for Engineering Education and Research, Inc. (iNEER) is a Maryland-based non-profit organization, which was incorporated on July 16, 2002 as a Maryland corporation. Through collaboration in education and research, the iNEER works with members from both industrialized and developing nations to develop a global network of educators and researchers to help advance education and research around the world, and to achieve mutual progress through international exchanges and linkages, formation of cooperative partnerships, and information sharing to enhance the education experience for students. Membership in iNEER is free of charge
- 2. A letter dated July 16, 2003 from Internal Revenue Service establishes the following rulings: (1) accounting period ending: December 31; (2) foundation status classification: 509(a)(2); (3) advance ruling periods to begin July 16, 2002; (4) advance ruling period to end December 31, 2006; and (5) addendum not applied.

- 3. The Secretariat headquarters are divided between the New Jersey Secretariat, which is located at New Jersey Institute of Technology, Newark, New Jersey, and the Maryland Secretariat, which is located in Potomac, Maryland.
- 4. A comparative analysis of income and expenditures for two secretariat locations mentioned above for the past two years follows:

	Year ending 12/31/05		Year endir	ng 12/31/2006
	MD	NJ	MD	NJ
Revenue	\$114,825	\$29,444	\$117,474	\$ -
Expenditures	94,472	35,225	125,605	29,813
Net Income	20,353	(5,781)	(8,131)	(29,813)

5. Although financial activities in both secretariat locations are combined and treated as one activity for financial reporting and audit purposes, it is treated separately for income tax reporting purpose. For tax reporting purpose, iNEER's activities at New Jersey is incorporated into the educational funds of New Jersey Institute of Technology. As to the activities in Maryland secretariat, Form 990 has been prepared and mailed separately to Internal Revenue Service Center, located at Ogden, UT 84201-0027.