

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

iNEER REPORT FOR 2004

General Secretariat

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

July 25, 2005

A. Introduction

The year 2004 was once again a busy year for iNEER and the iNEER Network. We made advances in global networking and information dissemination. For the first time, iNEER sponsored two major conferences in the same year: iCEER-2004 and ICEE-2004. Both conferences were extremely successful.

iCEER is a new conference series launched in 2004 following extensive discussion within the iNEER Board and the iNEER community, in which it was felt that ICEE, the single conference format used by the Network since 1994, had grown too large as to serve the original objectives, namely, to promote networking, information sharing and development of international partnerships. The inaugural event for the new iCEER conference series was held in Olomouc, Czech Republic. Nevertheless, this conference attracted a large turn-out that exceeded the capacity of the conference facilities.

“Innovations 2004”, the Special Volume for 2004, was published and distributed at both ICEE-2004 and iCEER-2004.

A first-of-a-kind International Engineering Education Partnership was held in Saratov, Russia. Furthermore, iNEER continued to expand its global network through networking visits.

Financially, the iNEER Secretariat continued to be in good health.

B. iNEER Information

An e-mail sent on February 18, 2004 invited members of the engineering education and research community to participate in the ICEE-2004 conference to be held at the University of Florida, Gainesville campus. Details on this invitation are available at:
<http://www.ineer.org/ITEMS/2-18-04ITEM.htm>.

A memo sent on May 3, 2004 introduced to the iNEER community the new Chair of the iNEER Board, Professor Tomas Cermak, who is also Rector of VSB – Technical University of Ostrava. The memo also invited members to submit articles for the 2005 Special Volume. Finally, members were encouraged to sign up for the SSTU-iNEER Engineering Education Partnership Workshop in Saratov, Russia. The full text to this memo can be found at:
<http://www.ineer.org/ITEMS/5-3-04ITEMS.htm>.

The iNEER Secretariat announced in an e-mail dated May 19, 2004 the availability of funding from the National Science Foundation (NSF) for Engineering Research Centers (ERCs). These centers focus on the definition, fundamental understanding, development, and validation of the technologies needed to realize a well-defined class of engineered systems with the potential to spawn whole new industries or radically transform the product lines, processing technologies, or service delivery methodologies of current industries. ERC faculty, students and industry partners integrate discovery and learning in an interdisciplinary environment that reflects the complexities and realities of real-world technology. ERCs fulfill NSF's strategic goal to increase the diversity

of the scientific and engineering workforce by including all members of society regardless of race, ethnicity, or gender in all aspects of the centers' activities. More details on ERCs are available at:

http://www.erc-assoc.org/erc_links.htm.

More on the May 19th message can be accessed at:

<http://www.ineer.org/ITEMS/5-19-04ITEMS.htm>.

A May 28, 2004 notice was sent out reminding members of the iNEER community to submit papers for the iCEER-2005 meeting at Tainan, Taiwan. Members were also encouraged to submit articles for the 2005 Special Volume; the deadline was July 15, 2004. The notice can be found at:

<http://www.ineer.org/ITEMS/5-28-04ITEMSforTaiwan.htm>.

iNEER Secretary-General Win Aung sent out a list of NSF funding opportunities for international activity on July 29, 2004. The list can be located at:

<http://www.ineer.org/ITEMS/NSFFundingForInternationalActivities.htm>. Click on the hyperlinks at the bottom of the message to view details on each item.

The iNEER Secretariat extended another invitation to the iCEER-2005 conference in Tainan, Taiwan, on July 30, 2004. The deadline to submit abstracts for this conference was August 20, 2004. The objective of an iCEER conference is to focus on promoting international collaboration on engineering education and research. Please visit:

<http://www.ineer.org/ITEMS/InvitationToiCEER2005.htm> for more details.

Secretary-General Win Aung presented his deepest gratitude to the Czech committee headed by Professor Tomas Cermak that hosted the iCEER-2004. His letter was dated August 1, 2004 and said in part:

“The success of iCEER-2004 was the result of an extraordinary team effort led by Professor Tomas Cermak, General Chair, Rector of VSB and the current Chair of the iNEER Board. His leadership is exemplified by his constant presence and personal involvement throughout. You would not miss him, as he was all upfront and hands-on, staying very active throughout. Clearly, iCEER-2004 was “his” conference. To him, we say “THANK YOU” and “BRAVO!”.

To Prof. Vaclav Roubicek, Vice Rector and past Chair of the iNEER Board, we owe special thanks for opening the doors of the Czech Senate to host the pre-conference workshop. By successfully launching a career in politics, our very own Senator Roubicek clearly is blazing a new trail for engineering education in the Czech Republic.

Working very ably to ensure that everything was running smoothly was Professor Vladimir Kebo, Vice Rector of VSB.

Prof. Lubomir Smutny, Head of the Department of Control Systems and Instrumentation, was what we would call in the west, the foreman of the factory floor. Always attentive to details, he was the one that I went to in many emergencies, and he always came through with quick solutions that were right on the mark.

Many people worked behind the scenes. Members of the National Organizing Committee, they were the spokes that made the wheel turn in Olomouc and Bouzov Castle before and during June 27 –30, 2004. It's impossible to mention all of them by name, but we particularly appreciate the work of Otilia Drottnerova, Andrea Samolejova, Silvie Sevcikova and Marta Blahova.

To all of them we say: THANK YOU! We will not forget your hospitality and kindnesses rendered in the name of personal and international friendship and cooperation.

Sincerely,

Win Aung
Arlington, VA, USA”

The complete letter of acknowledgement is available at:
<http://www.ineer.org/ITEMS/Thankyouletter7-30-04.htm>.

C. “Innovations 2004” – the iNEER Special Volume

Published in June 2004 in time for distribution to all participants of iCEER-2004 held in Olomouc, Czech Republic, the hardcover 2004 iNEER Special Volume contains 465 pages of text. The 40 chapters in the book cover topics ranging from curriculum changes to new, more effective approaches for teaching and learning. It showcases recent and ongoing developments in learning-based pedagogical approaches. They are:

- About new courses and innovative research programs faculty worldwide are developing in response to emerging technological opportunities
- How to improve student learning by increasing retention of prior course materials
- How visualization and display technologies can be used to facilitate 3-D spatial learning in a lecture room
- How the adaptive feedback method can be used to monitor student progress during and after a class in order to improve teaching and learning
- How to introduce multimedia-based learning and deliver immersive projects via the Internet
- How faculty around the world are deploying innovative solutions to teach large classes
- How Web-based techniques can be used to enhance interactive learning, creative problem-solving, and remote experimentation
- How to apply the cooperative learning method in new ways to improve teaching and learning
- About German innovations to address high failure rates in mathematics for engineering students
- About the collaboration among 9 educational institutions in 8 European countries to share laboratory experiments online

The members of the Board of Editors for the 2004 iNEER Special Volume were: Win Aung; Albert Altenkirch; Tomas Cermak; Robin W. King; and Luis Sanchez Ruiz. Their biographies can be read at:

<http://www.ineer.org/iNEERPapers/2004VOLBOARDOFEDITORS4-18-04.htm>.

The List of Reviewers for the 2004 Special Volume is available at:

<http://www.ineer.org/iNEERPapers/ReviewerList-sorted.htm>.

An updated list acknowledges those who reviewed the 2005 Special Volume, scheduled for publication in 2005. The members of this group can be found at:

http://www.ineer.org/iNEERPapers/Reviewers_sorted_by_names_12_3_04.htm.

Photos of the front and back covers as well as the 2004 book's spine are available at:

<http://www.ineer.org/iNEERPapers/2004SpVolCover.jpg> (front);

<http://www.ineer.org/iNEERPapers/2004SpVolBackCover.jpg> (back);

and <http://www.ineer.org/iNEERInfo/2004SpVolSpine.jpg> (spine).

In 2004, the iNEER Secretariat made several sections of the 2003 publication available online.

These include the table of contents, preface, and reviewers list, all of which can be viewed at:

<http://www.ineer.org/iNEERPapers/4-25-04Innovations2004v5frontmaterials.pdf>.

The members of Board of Editors who will be publishing the 2005 Special Volume are: Win Aung; Robin W. King; Jerzy Moscinski; Shan-Hwei Ou; and Luis Sanchez-Ruiz. Their biographies are found at:

http://www.ineer.org/iNEERPapers/Board_of_Editors.htm.

D. iCEER-2004 at Olomouc, Czech Republic, June 27-30, 2004

Organized as an information exchange forum, iCEER-2004 sought to advance education and research through collaboration, partnership and networking. As our knowledge-based society continues to evolve, paradigms in engineering education are also changing. iCEER-2004 provided a platform for examining current practice and to plan for the future.

As with any conference, iCEER-2004 was preceded by a plenary workshop that dealt with the conference's principal theme, "Progress Through Partnership." The workshop was held at the historical compound of the Wallenstein Palace, now the Seat of the Senate of the Czech Republic Parliament. The action took place under the auspices of the Senator, Vaclav Roubicek, Esq. More details on the workshop can be found at the direct link to iCEER-2004:

<http://www.fs.vsb.cz/akce/2004/iceer/index.htm>

and http://www.ineer.org/Events/iCEER2004VSBinfo/Programme_Workshop.pdf (June 26, 2004 workshop schedule).

The deadline for submitting abstracts was January 15, 2004, as stated in the Call for Papers sent on January 7, 2004. More details on the location of iCEER-2004 and past conferences can be found at:

<http://www.ineer.org/Events/iCEER2004VSBinfo/CallforPapers1-7-04.htm>.

Abstracts were sorted by major topics and participants by country. Visit:

<http://www.ineer.org/Events/iCEER2004VSBinfo/AbstractCountryMajorTopics.htm> for abstract count and

<http://www.ineer.org/Events/iCEER2004VSBInfo/RegisteredParticipantsbyCountry.htm> for charts detailing the breakdown of participants by country.

Participants were reminded of their payment deadline, March 15, 2004, in a memo sent out on February 22, 2004. Also included were instructions on presenting papers at iCEER-2004. Complete rules and regulations on papers are available at:

<http://www.ineer.org/Events/iCEER2004VSBInfo/2-22-04iCEER-2004Abstracts-Papers-Payment.htm>.

Programs for iCEER-2004 can be viewed at:

http://www.ineer.org/Events/iCEER2004VSBInfo/Programme_Olomouc.pdf (June 28, 2004)

and

http://www.ineer.org/Events/iCEER2004VSBInfo/Program_ICEER04.pdf (June 29, 2004).

Photos of iCEER-2004 are available at:

<http://www.fs.vsb.cz/akce/2004/iceer/Photo/Index.htm>. Click on a date at the top of the page to view photos from that day.

The 2004 iNEER Leadership and Achievement Awards were presented at iCEER-2004. Professor Juh-Wah Chen was presented with the Leadership Award, while Professor Aristos Christou received the Achievement Award. Their biographies can be read at:

<http://www.ineer.org/Awards/Welcome.htm>. Click on each professor's name.

This iCEER-2004 conference also has a direct link:

<http://www.fs.vsb.cz/akce/2004/iceer/index.htm>.

E. ICEE-2004 at the University of Florida, Gainesville, October 16-21, 2004

ICEE-2004 was only the second iNEER conference held on U.S. soil. Hosted by the University of Florida, a world leader in engineering education and research, ICEE-2004 provided participants the opportunity to further discover the latest innovations in world engineering education and research, and discover new opportunities for international cooperation.

An international partnerships workshop was held the day before the opening of ICEE-2004. It addressed two methods of engineering educational reform: 1) A comprehensive outcomes-based system and 2) A small project-based implementation to foster public sector partnerships. Participants selected one of the methods and developed a plan for implementation at their institution. Please visit:

http://succeednow.org/icee/conf_intlwrkshops.html for more information.

An e-mail sent on February 18, 2004 to members of the engineering education and research community served as a friendly reminder that the deadline for papers was April 1, 2004. The e-mail also gave details on the location of the ICEE-2004 conference. Please visit:

<http://www.ineer.org/Events/ICEE2004Info/CallforPapers2-13-04.htm> for more information.

The count of abstracts sorted by country can be found at:

<http://www.ineer.org/Events/ICEE2004Info/2004ICEEAbstractsbyCountries5-18-04.pdf>.

Photos of ICEE-2004 are displayed at:

http://succeednow.org/icee/WebGallery/UF-Poland_Meeting/FrameSet.htm.

Four coalition groups received the iNEER Recognition Award at ICEE-2004:

SUCCEED Coalition of the University of Florida, Gainesville

Foundation Coaliton of Texas A&M University

Gateway Coalition of Drexel University

Greenfield Coalition of Wayne State University

More information on these awards is available at:

<http://www.ineer.org/Awards/Welcome.htm>.

ICEE-2004 also has a direct link at:

<http://succeednow.org/icee/>.

F. Other Meetings, Workshops, Retreats, and Seminars

University of Pécs and Budapest University of Technology and Economics

A photo journal of iNEER members' visit to University of Pécs and Budapest University of Technology and Economics, Hungary, July 2-6, 2004, can be viewed at:

<http://www.ineer.org/ISCMeet/Welcome.htm#VISITS>. Click on each bullet to view photos.

Organized by Professor János Bársony, Dean of the Pollack Mihály Faculty of Engineering, University of Pécs, the visit and the ensuing discussion are paving the way for further dialog toward increasing exchanges in engineering education between universities in Hungary and institutions in the iNEER Network. The University of Pécs and Budapest University of Technology and Economics have submitted a proposal to jointly host a future iNEER conference.

Saratov State Technical University in Saratov, Russia

An International Engineering Education Partnership Workshop was held at the Saratov State Technical University in Saratov, Russia from September 16 – 19, 2004. The workshop was designed to increase the quality and productivity of engineering education and research through international cooperation. The Saratov Communique that resulted from this workshop, signed in both English and Russian, along with a photo gallery, are available at:

<http://www.ineer.org/ISCMeet/Welcome.htm>.

This workshop represented the first time that Russian rectors had met with a foreign delegation in engineering educators from abroad, to discussion areas of mutual interest for future interaction. For many years, the interaction and cooperation between Russian universities and those located abroad have been impeded by language, differing education systems, and politics. Since the breakup of the Soviet Union these barriers, though still are impediments, have begun to

fall and many leaders of academic institutions are looking for international linkages. Now, many of these institutions have international exchange programs with universities abroad. Particularly noteworthy in this connection in engineering-related fields are the state technical universities. These institutions deal with education and research, as opposed to just research (and development) as carried out by the research institutes under the jurisdiction of the Academy of Sciences.

In 2003 during the ICEE-2003 conference in Valencia, Spain, a number of participants including Professor Yury Chebotarevsky, Rector, Saratov State Technical University (SSTU), Saratov, Russia, agreed to cooperate in holding an international workshop on engineering education in Russia. The purpose of the workshop would be to exchange ideas and to examine approaches to increasing cooperation between Russian technical universities and institutions abroad. The workshop would take place in Saratov, Russia, and SSTU agreed to host it with funding from the Ministry of Education of the Russian Federation.

Planning for the workshop started in early 2004. Fifteen rectors of Russian state technical universities agreed to participate, as did eighteen persons from various countries. It was agreed that all participants would pay their own expenses for travel and room and board. The Ministry of Education of the Russian Federation became interested and provided funding to SSTU to cover some of the costs. A key Ministry official in charge of international program also attended the workshop.

Prior to the workshop, participants were contacted to solicit ideas for the agenda. The expected outcome was also discussed. All participants agreed to strive for an agreement to be signed at the conclusion of the workshop that would serve as a blueprint to guide future interaction. To this end, ideas contributed by participants were compiled into a draft report and circulated by e-mail to confirmed participants prior to the start of the workshop.

The International Engineering Education Partnership Workshop was held as scheduled on September 16-19 2004, in Saratov under the leadership of Yury Chebotarevsky who was assisted by an organizing committee headed by the Vice Rector for International Affairs. Attendance was by invitation.

Over a two-day period, participants introduced their own institutions, and their interest in international cooperation and ideas for such cooperation. With the help of Dr. Olga Dolinina and her staff, they also took turns in working on a computer to update the final draft of an agreement that came to be called the "Saratov Communique". Dr. Dolinina and her staff from SSTU translated the English version into Russian, and vice versa, in real time. Participants signed both the English and Russian versions on the last day just before closing.

Visit to Two Universities in Volgograd

Following the conclusion of the Saratov workshop, three participants included myself visited two universities in Volgograd, a 6 hour ride by car from Saratov. My hosts were: Prof. Ivan A. Novakov, Rector of the Volgograd State Technical University (VSTU), and Prof. Vladimir

Ignatiev, Rector of the Volgograd State University of Architecture and Civil Engineering (VSUACE). The visits took place during September 19 – 21, 2004.

The city of Volgograd, formerly known as Stalingrad, was the battleground for some of the fiercest WWII fighting. The Battle of Stalingrad turned the tide of the war, though more than 1 million Russian lives were lost. Reduced to rubble during the war, today the city has an amazing look of newness that sets it apart from many other cities in Russia, following postwar rebuilding that turned the city into one with wide boulevards and openness.

Life in Volgograd and the entire region is shaped to a large degree by the Volga River. Located on a small hill overlooking the river is the gigantic WWII monument. The centerpiece of the monument is Rodina, which means “Motherland” in Russian. This freestanding 8,000-ton steel and concrete statue stands over 250 feet high, making it more than 100 feet taller than the Statue of Liberty. Holding 90+ feet long sword in one hand, she beckons with the other her people to come to defend Russia.

Each of my campus visits in Volgograd comprised of a meeting with the rector that was attended by a vice rector responsible for international programs and other staff. The rector provided a brief overview of the history and current emphases of the university. At VSTU, Prof. Novakov’s remarks were accompanied by a Powerpoint presentation.

Both rectors emphasized their interest in increased cooperation with foreign institutions. Indeed, one of the institutions, VSUACE, has been collaborating with Michigan State University on a Study Abroad program that ranks among the top 3 in terms of U.S. students visiting Russia to study engineering and culture. The daughter of VSUACE’s rector, a faculty at Saratov State Technical University and a civil engineer herself, is currently pursuing further graduate studies at MSU.

G. Operation of iNEER Secretariat and Financial Report

As in previous years, iNEER has two secretariats in the U.S., one in Maryland and the second in New Jersey. The Maryland Secretariat is incorporated as a non-profit organization and is recognized by the U.S. International Revenue Service as a 501(c)(3) entity. The New Jersey Secretariat is a part of the New Jersey Institute of Technology, a research university supported by the State of New Jersey.

iNEER has no salaried employees. Every year, the Secretary-General donates to iNEER more than 1,500 hours of pro bono work.

The 2004 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 1.

Respectfully Submitted,

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

APPENDIX 1

Financial Statements

	For the twelve Months Ended December 31, 2004			For the twelve Months December 31, 2003			Ended
	MD	NJ	TOTAL	MD	NJ	TOTAL	
Cash Flows from operating activities							
Net Income	\$ 82,308.74	\$ (9,393.80)	\$ 72,914.94	\$ 5,744.53	\$ 16,421.52	\$ 22,166.05	
Adjustments to reconcile net income to net cash provided by operating activities							
Total Adjustments	82,308.74	(9,393.80)	100.00	0.00	0.00	0.00	
Net Cash provided by Operations	0.00	(9,393.80)	(9,393.80)	5,744.53	16,421.52	22,166.05	
Cash Flows from investing activities							
Used For							
Net cash used in investing	0.00	0.00	0.00	0.00	0.00	0.00	
Cash Flows from financing activities							
Proceeds From							
Used For							
Net cash used in financing	0.00	0.00	0.00	0.00	0.00	0.00	
Net increase <decrease> in cash	<u>\$ 82,308.74</u>	<u>\$ (9,393.80)</u>	<u>\$ 72,914.94</u>	<u>\$ 5,744.53</u>	<u>\$ 16,421.52</u>	<u>\$ 22,166.05</u>	
Summary							
Cash Balance at End of Period	\$ 98,115.27	\$ 40,830.56	\$ 138,945.83	\$ 15,806.53	\$ 50,224.36	\$ 66,030.89	
Cash Balance at Beg of Period	15,806.53	50,224.36	66,030.89	(10,062.00)	(33,802.84)	(43,864.84)	
Net Increase <Decrease> in Cash	<u>\$ 82,308.74</u>	<u>\$ (9,393.80)</u>	<u>\$ 72,914.94</u>	<u>\$ 5,744.53</u>	<u>\$ 16,421.52</u>	<u>\$ 22,166.05</u>	

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:

	<u>Year ending 12/31/03</u>		<u>Year ending 12/31/2004</u>	
	MD	NJ	MD	NJ
Revenue	\$51,184	\$50,355	\$135,941	\$25,000
Expenditures	<u>45,440</u>	<u>33,933</u>	<u>53,632</u>	<u>34,394</u>
Net Income	<u>5,745</u>	<u>16,422</u>	<u>82,309</u>	<u>(9,394)</u>

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.