RECOGNITION AWARD

Presented to

Shobha K. Bhatia, Ph.D.

Professor
Department of Civil & Environmental Engineering
Syracuse University
Syracuse, NY, USA

For Excellence in Fostering Sustained and Unique Collaborations in International Research and Education

by

International Advisory Board
International Network for Engineering Education and Research (iNEER)

International Steering Committee
International Conference on Engineering Education (ICEE-ISC)

July 23, 2003
Valencia, Spain

iNEER Award Nomination
May 15, 2003

A1. Nominator: Dr. Debbie Niemeier, Professor and Department Chair, Department of Civil and Environmental Engineering, University of California, Davis, CA, USA, 95616

B1. Nominee: Dr. Shobha K. Bhatia, Professor, Syracuse University, Department of Civil and Environmental Engineering, 220 Hinds Hall, Syracuse, New York 13244

B2. Category of Award: **Recognition**

B3. Summary of Accomplishments of Nominee

Dr. Shobha K. Bhatia is a Professor in the Department of Civil and Environmental Engineering at Syracuse University. She received her undergraduate and MS degrees in Civil Engineering from Roorkee University, India, and went to Vancouver, British Columbia as a Commonwealth Scholar to complete her Ph.D. work. After finishing her Ph.D., she joined Syracuse University in 1980 as an Assistant Professor and was promoted to the rank of full Professor in 1996. She served as Chair of the Department of Civil and Environmental Engineering from 1996 to 2001.

Dr. Bhatia has made innovative, sustained, and exemplary contributions to international cooperation in research and engineering education. Since 1990, Dr. Bhatia has focused her research efforts on the application of geosynthetics and natural materials in waste containment, road and building construction, and erosion control. She has demonstrated excellence in research through her more than eighty publications, participation in national and international conferences, service to numerous committees, such as the Vice President of the North American Geosynthetics Society (NAGS), presentation of lectures, and her work with numerous national and international students and colleagues. Recently, Dr. Bhatia completed a research project on the technical and economic aspects of geosynthetic products in minimizing erosion in highway drainage channels. She is currently working on an erosion control projects throughout New York State and has a very important on-going research project aimed at evaluating the technological, political, and cultural aspects of the use of natural erosion control materials (coir and jute) in India and the United States.

Dr. Bhatia has been extensively involved in engineering education. She has taught numerous courses in geosynthetics, landfill design, sediment management, earthquake engineering, seepage and earth dam design, and the role of women and minorities in engineering. She is the co-director of the Women in Science and Engineering (WISE) initiative and as part of her Laura J. and L. Douglas Meredith Professorship grant, she initiated the WISE Mentoring Program and WISE Learning Community, which include women students from engineering and computer science. She played an important role in the National Science Foundation (NSF)-funded Engineering Education Scholar Program,

which was designed to prepare young faculty for academic careers and she is the recipient of an NSF Faculty Achievement Award for Women for excellence in research and leadership in training future engineers. Dr. Bhatia has also worked extensively with colleagues in India on engineering education through the presentation of lectures, participation in conferences, and the support of visiting scholars to the United States. The following paragraphs demonstrate Dr. Bhatia's innovative, sustained, and exemplary contributions to international cooperation in research and engineering education.

Dr. Bhatia's research and engineering education collaborative efforts began in 1990 with travel grant from the National Science Foundation (NSF) to attend the Ninth Symposium on Earthquake Engineering in India. During the 6-week visit, Dr. Bhatia spent a significant amount of time at the Indian Institute of Technology (IIT) in Delhi, where she began collaborative efforts with university professors and students. She delivered a short-course at IIT Delhi on Designing with Geosynthetics, participated in a workshop on geosynthetics for practicing engineers, and discussed issues regarding the use of geosynthetic and natural materials for waste containment. As a result of the discussions, Dr. Bhatia also published a chapter in a book. This initial visit began a rewarding collaboration with Indian researchers that would span the next decade. From the beginning, Dr. Bhatia has always been accessible and enthusiastic about giving lectures, discussing ideas, collaborating on research initiatives on geosynthetics and natural materials, and working with professors and students in addressing specific issues regarding geosynthetics and natural materials for waste containment, road and building construction, and erosion control in India.

In 1992, Dr. G.V. Rao of IIT Delhi invited Dr. Bhatia to participate as a consultant to a United Nations Development Program (UNDP) project on coir and jute product development in India. This project was a joint effort between IIT Delhi, civil engineers, the textile industry, manufacturers of natural erosion control products, and several government organizations in India. As part of the project, Dr. Bhatia hosted several researchers from IIT Delhi, Dr. G.V. Rao, Dr.V. Sharma, and Mr. M. Raju, in Syracuse. Dr. Bhatia arranged for guests lectures, provided an opportunity for them to meet with Syracuse University faculty members and local engineers, and to tour the laboratories at Syracuse University. Collaboration for this project has fostered continued collaboration to the present day.

In 1997, Dr. Bhatia received a NSF Travel Grant to participate in the "Indo-US Workshop on Ground Improvement Using Geosynthetics," in New Delhi, India. At the workshop, Dr. Bhatia presented a lecture and published a paper in the proceedings, titled "Suitability of Geosynthetic Products in Filtration and Drainage Applications." Dr. Bhatia collaborated with engineers from various states agencies in India, manufacturers of natural fabrics (made of jute and coir), and researchers regarding the application of natural erosion control products in engineering applications. Dr. Bhatia was also able to visit researchers at IIT Delhi and tour the laboratories.
There were followed by travel to New Delhi, India as part of a 2002 NSF-funded project to present a lecture on the international perspectives of waste containment. The lecture was presented to representatives from more than 30 state and federal agencies in India. In

the lecture, Dr. Bhatia provided an overview of technologies used around the world for waste containment. Instead of forcing proven international waste technologies onto the researchers and engineers of India, she focused her attention on learning about the status of waste containment in India, indigenous technologies that were being implemented, and issues that were specific to India. Dr. Bhatia has always paid particular attention to learning from collaborators and their indigenous technologies rather than imposing ones from the developed world. During this trip, Dr. Bhatia also spent several weeks in Kerala learning about the coir industry and making new collaborations in the natural fiber industry.

In 2003, under a travel grant from the Women's International Science Collaboration (WISC) Program of the NSF, Dr. Bhatia spent four weeks in India (Cochin, Alleppey, Trivandrum, Hyderabad, Delhi, and Jaipur) studying the technological, political, and cultural aspects associated with the use of coir fibers for erosion control. During the visit, Dr. Bhatia was able to meet and interview women laborers, manufacturers, exporters, researchers, and governmental officials working in the coir fiber industry. Dr. Bhatia was also invited to present a lecture at Cochin University on an overview of erosion control products in the United States at a short course for fifty faculty members of civil engineering from various regional engineering colleges in India. Many of the participants were very interested in pursuing research in natural fibers and their application in engineering. In the future, Dr. Bhatia hopes to expand her collaborations with researchers from other regional colleges in India. Dr. Bhatia was also able to strengthen her collaborations with colleagues she met in Kerala during her 2002 visit. Dr. Bhatia also visited several sites where coir erosion control products were currently being used.

There is little doubt that Dr. Bhatia has made significant innovative, sustained, and exemplary contributions to international cooperation in research and engineering education. She has demonstrated a sustained effort in research in the area of geosynthetics and natural materials for the last thirteen years and has established significant collaborations with colleagues in India. In addition, Dr. Bhatia has made significant efforts in engineering education in both the United States and in India. These collaborations have provided significant learning opportunities that have been tremendously beneficial to both sides.

B4. Suggested Citation for the Award: **For excellence in fostering sustained and unique collaborations in international research and education that contribute to the global community.**

B5. Two Letters of Support (**please see attached letters**)

B6. Statement by Nominator (**please see attached letter of support**)

B7. Planned Attendance: Yes

B8. Resume (**Please see attached)**

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iNEER Awards Committee May 14, 2003
c/o iNEER Secretariat

Re: Nomination for Dr. S. Bhatia

I am honored to write this letter of support for Prof. Shobha Bhatia's nomination for an iNEER Recognition Award. I have known Prof. Bhatia for approximately four years. I met her at an educational conference and since that time have collaborated with her on several proposals. During the past year, I also spent time at Syracuse and talked extensively with Dr. Bhatia regarding her international collaborations; I have had conversations with her students and her colleagues. Quite simply, she is exceptional. In my mind, she represents the ideal in terms of a scholar who is passionate about her research and educational activities while caring deeply about contributing to the global community.

Dr. Bhatia's international collaborations have spanned nearly 15 years of informal and formal communications. In the early 1990's, she began what is now a major project to improve the lives of women working in India by developing a better understanding of the geosynthetic properties of natural materials for application in engineering, particularly erosion control. This project has involved a large number of Indian collaborators, has fostered new projects, and motivated international visits of the highest caliber.
She has passed on her passion for contributing to international research and education to her graduate students. Onegrauate student told me of a recent month long visit to India and how the visit had impacted her. She spoke of her desire to continue these collaborations when she finished her doctoral work. She also spoke of the need for greater international exchange and had developed several ideas for new areas of research and educational collaboration in different countries. If one of the main roles of faculty as educators is to inspire their students, I have met few that would even begin to approach the passion that Dr. Bhatia has stirred in her students. They are global in perspective and worldly in commitment.

Those who contribute quietly and with great distinction are often overlooked for the more glossy and marketable images. This award provides an opportunity to recognize a scholar who has served the engineering education and research community with a calm and gracious presence and with enormous commitment and quiet determination. Dr. Bhatia is simply an individual of the highest excellence. I hope that you will consider her

application positively for this award. It will be a great and honorable tribute to a distinguished scholar and educator.

Deb Niemeier

Professor and Department Chair

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May 10, 2003

iNEER Awards Committee
c/o iNEER Secretariat

Re: Nomination for Dr. Bhatia

I am honored to offer this letter of support for Professor Shobha Bhatia's nomination for an iNEER Recognition Award. I have known Professor Bhatia for three years. We met at an NSF Conference on Women Engineering Leadership. Professor Bhatia served on a panel of women engineering chairs who discussed the challenges of academic leadership. I was impressed with her candid, open approach to academic leadership. She talked about motivation, integrity, fairness and strategic planning. Professor Bhatia is a natural leader. I left that panel thinking that this was someone I would like to work for.

Professor Bhatia has worked diligently at Syracuse to establish the WISE (Women in Science and Engineering) Program and other programs to support and encourage women students to consider engineering as a career. Recently, she has joined a group of women engineering faculty in developing a program to hold additional Women Engineering Leadership Conferences for mid-career women engineering faculty. This effort resulted in the award of a collaborative NSF grant to Professor Bhatia at Syracuse and others across the nation. This award establishes the Women in Engineering Leadership Institute where Professor Bhatia currently serves on the executive board. The purpose of this organization is to provide training, mentoring, and networking opportunities for women engineering faculty in academic leadership.

Professor Bhatia has a decade-long history of collaboration with colleagues in India. She has participated in conferences, conducted workshops, offered short courses and worked to develop collaborative research between the two countries. She has spent extended periods of time working with researchers at IIT Delhi. Professor Bhatia's recent work in investigating the use of coir fibers for erosion control has particular applications in India. Her record of continued collaboration with Indian researchers clearly shows her commitment to developing long-term international research relationships. She sets an example for all of us to aspire to.

I am very pleased to write this support letter for Professor Bhatia. I believe that when her excellent academic and service record are examined closely, you will find that she fulfills the intent of this award to its fullest. I strongly support this nomination of Professor Bhatia for the iNEER Recognition Award.

Sincerely,

Judy M. Vance, Ph.D.
Professor and Director of Graduate Studies
Mechanical Engineering