



Providing Deaf Education Around the Globe:

James DeCaro, director of PEN International, with the Hong Kong skyline in the background. DeCaro led a PEN team that partnered with educators at the Chinese University of Hong Kong to enhance the implementation of new technologies in deaf education programs offered by the university. The project included training staff of the Center for Sign Linguistics and Deaf Studies in documenting sign languages using off-the-shelf software packages.

Globalization of Access and Learning Technology

by Kathy Smith

Dr. James J. DeCaro believes that technology can make the world a smaller—and better—place for people who are deaf. Through Postsecondary Education Network (PEN)-International, which is housed at RIT/NTID and funded by The Nippon Foundation of Japan, DeCaro has found a unique opportunity to bridge cultural, geographic, social, and economic differences on the way to creating genuine change in deaf education worldwide.

Putting Experience to Work

Much of PEN's work draws upon DeCaro's accumulated experience at the National Technical Institute for the Deaf (NTID). Joining the college as a civil engineering technology instructor in 1971, just three years after NTID opened as one of two federally sponsored deaf education institutions, DeCaro was part of the institute's exciting early years, during which myriad technologies emerged to help deaf students learn in new and different ways. DeCaro oversaw the development and utilization of many of these technologies, so when he stepped down as dean of the college in 1998, he began thinking of ways to share NTID's and RIT's technological know-how on a larger scale.

In 2000, he approached The Nippon Foundation of Japan, a major grant-making organization interested in programs that support full participation in society for physically and socially handicapped people. DeCaro's vision of improving educational access for deaf people through the global power of technology touched a chord at the Foundation, which provided \$1 million in 2001 to form the Postsecondary Education Network-



From North America to the Far East:

Dr. DeCaro observes a demonstration of real-time captioning during a PEN trip to South Korea. PEN currently has 16 international partners in 13 countries including Russia, the Czech Republic, the Philippines, and Japan.

International. Since then, the Foundation has awarded PEN more than \$8 million.

PEN-International's Mission

PEN's three-pronged mission is staggeringly simple: to train faculty members from colleges and universities in developing countries how to use technology to better educate deaf students; to provide them with multimedia centers and cutting-edge technology to support that learning; and to both humanize and widen the program's impact through cultural exchanges and leadership opportunities for students from partner universities.

DeCaro began by targeting several Asian and Pacific Basin countries to assess existing educational programs for deaf students. Partner institutions were chosen based on four characteristics:

- The university had a program for postsecondary education of deaf students.
- Administrators at a selected program strongly supported deaf education.
- The program for deaf students was recognized for its quality and commitment to continuous improvement.
- Each program had as its goal to prepare deaf students to enter careers that would allow them to fully participate in the workplace and in society in general.

PEN has formed partnerships with Japan's National Tsukuba University of Technology; China's Tianjin University of Technology, Beijing Union University, Changchun University, and Zhongzhou University; the College of St. Benilde in the Philippines; and Russia's Moscow State Technical University, Novosibirsk State Technical University, Vladimir State University Center for the Deaf, and the Academy of Management at Kazan. Affiliate programs later emerged in the Czech Republic, Thailand, Vietnam, Hong Kong, and South Korea. In all, PEN has 16 partners and affiliates in 13 countries, with two more being added next year.

PEN worked with each partner institution to assess its needs

and offered in-depth alternatives/solutions to its educational challenges. While many of the solutions are based on NTID's experience, DeCaro notes that partners are expected to adapt, adjust, or even reject some of the suggestions.

"If we have something they want, they can use it," he says. "If they have their own ideas, we'll work collaboratively to develop them with them."

Partner institutions have built new multimedia labs with PEN support and PEN offers training at RIT and in each home country, usually by RIT faculty members from NTID and other colleges. The labs all have smart classrooms used for teaching courses, faculty training, curriculum development, and videoconferencing. Students also use the facilities after class to study, do homework, and access the Web.

More than 500 computers have been installed in PEN-sponsored labs since 2001; they are used, on average, 60 hours per week.

Multimedia labs at Bauman Moscow State Technical University "have accelerated changes in the [educational] situation at the university, in Moscow, and in the country as a whole," says Alexander Stanvesky, director of Bauman's Center on Deafness.

Faculty members from each country are expected to share their new technological knowledge with fellow teachers. This teacher training is part of PEN's strategy to move its partners from being "importers" of knowledge to becoming "self-sufficient" to becoming "exporters." Last year, 14 of PEN's 16 partners conducted workshops or training in their countries on topics such as educational technology, instructional technology, and distance learning.

Research in China

PEN's biggest research initiative to date is a three-year study on the state of post-secondary education for deaf people in China. *Postsecondary Education for Deaf People in China: Issues, Roles, Responsibilities, and Recommendations*



Disseminating Knowledge in Both Directions:

Hong Kong residents demonstrate real-time video technology that allows for signing by cell phone. The innovation is currently not available in the U.S. and PEN is working to advance its implementation here in the United States.

by DeCaro and his spouse, Patricia Mudgett-DeCaro, retired RIT faculty member in the NTID graduate level teacher education program, is a comprehensive review of the state of the art in China and offers recommendations on how to improve deaf education in the country.

China faces the same challenges that exist worldwide when it comes to deaf education in developing countries, but on a much larger scale. Legislation was passed in the mid-1980s to allow students with disabilities to attend college, resulting in two national university programs for deaf students and a high



Creating Multimedia Laboratories to Enhance Research and Knowledge Transfer: DeCaro and NTID Dean Alan Hurwitz at the remote opening of the PEN-International Lab at Changchun University, China.



Multimedia Lab at Bauman Moscow State

Technical University: The lab provides a high-tech training center for deaf students, enhances professional development of Russian deaf educators, and serves as a PEN-Russia training facility for collaboration activities.

percentage (80 percent) now receiving at least nine years of compulsory education. But while the number of deaf students receiving an education has increased, doubts remain about the quality.

The DeCaros interviewed 38 teachers and administrators of secondary and college programs serving deaf students, government administrators of the China Disabled Persons' Foundation, and deaf college students and graduates. Their recommendations include improving both the quality and diversity of education (art and computers are the majors currently offered), better access to mainstream courses and programs, improved

pre-college education, more partnerships with employers, more opportunities for student leadership development, improved communication competencies, and a sweeping need to change the country's perceptions of deaf persons.

DeCaro believes that this research not only will have an impact on teaching and learning in China, but also will have a positive impact on public policy, a sensitive undertaking requiring diplomacy as well as mutual trust and respect.

"How a recommendation for improvement is stated is as important as the content of the recommendation itself," DeCaro notes.



PEN-China Research:

PEN and its partner universities in China collaborated on the production of multimedia materials to enhance instruction at collaborating institutions.



Speech to Text:

The PEN-China partnership is testing the application of speech recognition software as a technique for providing speech-to-text services.



Integrating Deaf Students in University Programs:

An acupuncture program at Changchun University that is now offered to deaf students.



Interpreter Training and Development:

PEN has developed cutting-edge interpreter training programs that are now being implemented in numerous partner universities.

Officials from the China Disabled Persons' Foundation visited RIT in May 2006 to discuss the report and have pledged to begin addressing the recommendations in 2008. They will start by establishing interpreter education programs across the country.

Changing the World

PEN's accomplishments over the past seven years have not gone unnoticed. The program was named a 2006 Education and Academia Laureate by the Computerworld Honors Program, recognizing its efforts to use information technology to promote positive social, economic, and educational change.

DeCaro has been named Honorary Professor at Tianjin University of Technology and received the HaiHe Award of Honor for outstanding service to better the circumstances of deaf people in China. He also has been awarded an honorary doctoral degree from Bauman Moscow State Technical University. Additionally, Mr. Y. Sasakawa, chairman of The Nippon Foundation, received an honorary doctoral degree from RIT in 2007.

PEN continues to change existing stereotypes about deaf education worldwide.

"We know that attitudes and philosophies in partner countries differ from those that prevail in the United States,"

DeCaro says, "so we are careful not to impose our attitudes or solutions on faculty members we are training. However, we also like to challenge people's way of thinking about education and people who are deaf."

During one training session, PEN used a deaf female RIT/NTID student from a participating country as a teaching assistant. She was studying information technology, a major that was not available

for deaf students in her country. Faculty members were, therefore, presented with a conundrum—they were being trained in a skill set they did not possess by a student from their country who could not receive such an education in her own country.

PEN officials have a saying that they apply to trainers and trainees alike: "If you participate in a PEN-sponsored event and do not have your sensibilities challenged, we have not been successful."



Enhancing Deaf Education: William Glymer, PEN Associate Director, conducts a deaf education workshop at Korea Nazarene University. PEN has worked to disseminate instructional practices developed at NTID to partner universities and the international deaf community as a whole.