Kate Gleason College Of Engineering

enginuity

Fall 2003

Alumni Newsletter

Dean's Corner

Autumn has returned to western New York along with our students. Energy and excitement are peaking on campus much like the fall colors. This summer was highly productive, but nothing compares with the vitality that returning students inject into the campus community. These future alumni are RIT's legacy, and no one epitomizes the spirit of the KGCOE experience more than our distinguished speaker at the College's commencement last May. Robert O. Frasca, Class of '88 and Distinguished Alumnus for 2002, motivated us all with his enthusiasm and wisdom, saying:

> Today I challenge all of you **NOT** to live in that grey twilight; I urge you to take risks, have courage, and leverage yourself. You've spent the last five years of your life building a tremendously powerful set of tools. Don't let them go to waste. Leverage that knowledge, that ability, and most importantly that passion.
>
> **Dare Mighty Things!**

Building upon this theme, we tell you in this newsletter about daring faculty who are recreating history and taking flights of fancy, exercising their creative energy, and showcasing cutting edge technology – along with the KGCOE – to the outside world. There's also a profile of two of our many exceptional students who manage to combine their passions with their studies and do it very well.

continued on page 5

Awesome Alumnus

Tony Amorese is the Kate Gleason College of Engineering Distinguished Alumnus for 2003 for many good reasons.

Tony Amorese graduated from RIT in 1948 with a degree in Electrical Engineering. At that time the EE department had five professors and 55 students. Tony's parents wanted him to become an accountant. However, his supervisor for his part-time job during high school noticed his affinity for fixing things and encouraged him to study engineering instead. It was a good fit and the rest, as they say, is history!

Upon graduation, Tony married Kay, with whom he had gone on a blind date for his eighteenth birthday. Tony and Kay have been married for over 55 years, raised four children, and now have five grandchildren. Tony describes Kay as "quite a woman and my life partner."

For the first 30 years Tony's career included management positions at Rittenhouse Company, Emerson Electric Company, a division of Gould, Lakeland Concrete Products and Universal Machinery Corporation. While employed at Rittenhouse, the founder asked him to do some moonlighting for the Haloid Company, which later became Xerox Corporation.

Tony met with Chester Carlson, Dr. John Dessaur, and Joseph Wilson. He designed and prototyped the power

continued on page 4

Engineering Innovation for a Global Economy

Three years ago, RIT launched an Honors Program to attract the best and the brightest applicants, providing an added dimension to the undergraduate experience. Currently, over one-third of the students in this program are engineers!

The KGCOE-based component of the program provides these talented students with a full appreciation of the product development cycle, from concept to realization; namely how products are conceived, how decisions are made at the corporate level to pursue certain products and not others, and how product concepts are refined, engineered, and then manufactured for the marketplace.

The students have insisted that their projects benefit society. Each fall they select a new "customer" from a list of local organizations that help the handicapped. Last fall, they chose the Mary Cariola Center for profoundly handicapped children; this year it's the Jewish Home.

One of the most attractive aspects of this program is the opportunity to visit companies outside our local area. Last March eight engineering faculty accompanied 23 of the second year honors students on a visit to five companies in the Silicon Valley. As part of the honors sequence of courses, the students learn about the voice of the customer and work on a multidisciplinary team project to develop a conceptual design of a product that addresses the customer's needs. During the visits to Lockheed Martin, Intel, Apple Computers, and two small companies, Sciton, Inc. and Lumenis, Inc., the group heard how each of these companies addresses the product development process for their market sector, and gained insight into the engineering work environment in a variety of settings.

Next year, as third year students, this same group will expand their exploration of the product development process in the global marketplace. One of their activities will involve traveling to Rennes, France to visit companies and to observe how the process is affected by the local culture.

A teacher affects eternity; he can never tell where his influence stops.

Henry Adams

Introducing

Dr. Edward Hensel, PE
Professor and Department Head, Mechanical Engineering Department
Ph.D. New Mexico State University. He holds a bachelor of science degree in mechanical engineering, with distinction, from Clarkson University in Potsdam, NY. Dr. Hensel has a recognized entrepreneurial track record in developing externally funded research programs and has consulted to a variety of start-up companies, multinational corporations, US National Laboratories, and the Department of Defense. He has lectured internationally on various research topics and has taught short courses to researchers in the USA, France, and Russia. Dr. Hensel has served on the State of New Mexico's Governor's Business Advisory Committee and Governor's Science and Technology Committee. Dr. Hensel was previously the director of development of a small company that manufactured and marketed high-tech electro-pneumatic paint ball guns and other pneumatic products. In this capacity, he gained experience in small business start-ups, SBA and industrial loan programs, SBIR contracting, and product development.

Multi-talented Students

From left to right: Dušica Curanoviæ (biotechnology), Svetlana Bukharina (computational mathematics), Dr. Michael Ruhling (Music Director, RIT Philharmonia), Greg Matuszek (bioinformatics), and Jonathan Icasas (mechanical engineering), and Lisa Barrett (mechanical engineering)

Last summer, these talented students/musicians pictured above traveled to Colorado to perform at a symposium. Their musicianship equals their academic ability and they were well received.

Jonathan Icasas, 2003 mechanical engineering graduate, is a founding member of the String Quartet. He was a key member of the RIT Formula SAE team as well, and served in the positions of body/composites group leader and associate project manager. He traveled extensively with the Formula team and won numerous first place finishes in sales presentation. He was a member of the winning Formula team in the 2001 Australian competition. In addition, he taught various laboratories within the mechanical engineering department. Jonathan now works for Honda Manufacturing of Alabama, LLC, and is responsible for the interiors of the Odyssey minivans.

Lisa Barrett, is a fifth year student in the BS/MS mechanical engineering program. This Arizona native has worked on co-op at Boeing in southern California. An active member within the Department of Mechanical Engineering, she has taught the laboratory portion of the materials science course. Outside of the department, Lisa serves on the executive board of the co-ed honor fraternity Phi Sigma Pi. Her academic achievements earned her recognition as one of RIT's Outstanding Undergraduate Scholars this past spring. A seasoned musician, she has played the flute from the very beginning of her RIT career. Upon graduation, she plans to return to Boeing.

Flights of Fancy

On December 17th, two modern-day pilots will take to the skies in an authentic reproduction of the Wright brothers' historic plane in celebration of 100 years of powered flight. The KGCOE is delighted that the Experimental Aircraft Association chose Dr. Kevin Kochersberger, Associate Professor in the Mechanical Engineering Department, as one of the two pilots to fly in this reenactment. We'll check back with Kevin after his historic flight to see how it compares with modern day aviation and get his opinion on the engineering marvel of 1903! For more information go to www.rit.edu/~932www/kittyhawk/index.html

Introducing

Margaret Bailey, PE
Associate Professor, Mechanical Engineering Dept., Kate Gleason Endowed Professor
Ph.D. - University of Colorado at Boulder
Most recently, Asst. Professor, Department of Civil and Mechanical Engineering, United States Military Academy, West Point, NY

Robert Pearson
Associate Professor, Microelectronic Engineering Dept.
Ph.D.-Electrical Engineering, SUNY at Buffalo
Most recently, Associate Professor of Electrical Engineering, Virginia Commonwealth University

Tony Amorese - Awesome Alumnus

continued from page 1

supply for the original Xerox copier, the model 914. What a success story! Joe Wilson suggested paying Tony in Haloid stock, but Tony opted for the cash. He describes that as "one of my lifetime mistakes!"

After 30 years in electric products manufacturing and product development, Tony decided to go into business for himself. He began doing demographic research on various consumable products and service businesses and identified Orange County, CA as an area offering huge growth potential. Tony chose to invest his considerable skills and talents in a once bankrupt commercial laundry and dry cleaners, starting with a single location in 1978. In 20 years he grew that business into contracts at 110 thriving locations, and from 15 employees to 130.

Engineering was a good fit for Tony, and as he says,

"Once an engineer, always an engineer! You think differently! RIT provided me with an education and technical exposure at a professional level, and from that point forward, it was up to me. When I look at my career, the merger of the two was exciting and successful."

How did he achieve this success? Tony credits his engineering education as well as his management skills as the prime ingredients for his accomplishment. His analytical, engineering approach to solving breakdowns and understanding equipment limitations gave Tony a unique outlook on the industry. By redesigning the pressing machine and increasing the temperature of the steam, he was able to increase production from 60 shirts an hour to 100 an hour, without adding any additional staff. He set up teams of three employees with a group leader and operated the business with both day and night shifts, improving the turnaround time from four days to one, an industry standard we have all come to enjoy. Tony and his son, a mechanical engineer, repaired all the machines and equipment.

Tony studied every task in the process with an eye for efficiency and quality. For example, in 1980 he redesigned the commonly used shirt hanger to accommodate and support the collar, establishing an industry standard. Finally, Tony instituted a profit sharing policy for employees, reducing his turnover rate dramatically.

Tony's engineering prowess, his keen management skills, and his commitment to his employees gave him a strong competitive edge in developing what may have been the largest laundry and dry cleaning company on the West Coast.

Tony sold the business after 20 years to enjoy retirement with Kay, his children and grandchildren. They are happily retired in Phoenix. In 1997 Tony and Kay established the Anthony J. and Katherine D. Amorese Endowed Graduate Scholarship in Engineering at RIT. They are members of the Nathaniel Rochester Society Trustee Circle. Tony says he gives so generously because "I am proud and honored to be one of RIT's graduates. Great contributions to our economy and society originated from these halls."

Introducing

Greg Semeraro
Assistant Professor, Computer Engineering Dept. Ph.D.- Computer Engineering, University of Rochester
Most recently, Scientist, Department of Electrical and Computer Engineering, University of Rochester

James Ziobro
Lecturer, Computer Engineering Dept., MS-Electrical Engineering, University of Rochester
Most recently, Software Engineer, Design Engineer, Senior Engineer, Technical Specialist/Project Manager, Xerox Corporation

Robots Rule!

We are delighted to announce that RIT will host the 2005 Rochester FIRST Regional Robotics Competition for high school students and FIRST LEGO League tournament for 9 to 14 year-olds. The events will be in RIT's new Lucius R. and Marie Gordon Field House and Activities Center, slated to open in spring 2004. Xerox Corporation and Bausch & Lomb will also sponsor this event.

FIRST – "For Inspiration and Recognition of Science and Technology" celebrates students working smart by bringing together high school students, adult mentors, and college students to encourage students to pursue studies and careers in science, technology and engineering.

In 1989, Dean Kamen, prominent inventor of the Ibot and Human Segway, established FIRST as a friendly, team-based organization that would offer sports-like competitions in robotic creations. He envisioned competitions that would generate as much excitement, dedication, and enthusiasm as sporting events. In an increasingly technological society, a solid knowledge base in science and engineering becomes more important than ever before.

> Any sufficiently advanced technology is indistinguishable from magic.
>
> *Arthur C. Clarke*

The competition in March 2005 should draw about 50 teams from the northeast and Ontario, Canada. We anticipate several hundred high school students along with their families and coaches.

This major event coincides with the 175th Anniversary Year at RIT and the Kate Gleason College of Engineering will be the showcase college during the month of March 2005. What a great opportunity – to commemorate our past at the same time we celebrate the future!

Dean Kamen with his Segway

Dean's Corner

continued from page 1

Possibly the biggest single piece of news that is ***not*** in this newsletter is our initiative to re-engineer our engineering curriculum; to provide our students with a sophisticated understanding of team-based project management, and the ability to utilize the diverse collection of specialized skills inherent in multidisciplinary teams that provide optimal solutions to complex, real-world problems. This plan requires new types of space. Many, many thanks to the Gleason Foundation for their generous gift of $6 million and to the Brinkman Family Foundation for contributing $1 million for this new space. You can look forward to more details on this initiative in the next newsletter – or better yet, come visit and I can tell you about it firsthand.

We were very pleased by the responses we received to our first newsletter and sincerely hope to hear from many more of you in the coming year. Please keep in touch.

Fuel Cell and Microchannels Conferences Overwhelming Successes

The first international conference on Fuel Cell Science and Technology was held at RIT in April 2003 under the sponsorship of the American Society of Mechanical Engineers and ME Department at RIT. Professors Ramesh Shah and Satish Kandlikar hosted the event. Over 200 participants from industry, academia, and government agencies participated.

Following the above conference, the first International Conference on Microchannels and Minichannels was held at the KGCOE, jointly hosted by the American Society of Mechanical Engineers and the ME Department at RIT. Over 180 participants from 21 countries participated in the event. One hundred technical papers and 21 keynote lectures were presented.

Dr. Satish Kandlikar, James E. Gleason Professor of Mechanical Engineering and Director of the Thermal Analysis and Microfluidics Lab, worked tirelessly with researchers worldwide for many months to ensure the success of the conference. With the enthusiastic reception received for the conference, work has already started on the Second International Conference on Microchannels and Minichannels, to be held during June 14-16, 2004. Visit www.asme.org/events/micromini for further details.

A Genuine Renaissance Man

The Kate Gleason College of Engineering is fortunate to have many exceptional professors. It is especially gratifying when those outside the college recognize one of our own for their excellence. This spring, Dr. Josef Török received the Eisenhart Award for Outstanding Teaching. The Eisenhart family established this award in 1965 along with an exacting peer review process that begins with student nominations. From that point on, it is the hands of a committee of Institute professors. Dr. Török has been nominated six times for this highly competitive award – a strong indication of his long-term commitment to teaching.

The Estelle H. and Howard F. Carver Engineering Learning Center is a testament to Dr. Török's dedication to his students. He founded the center in 1997 to ensure that students have easy access to the help they need to succeed. All engineering students benefit from the center, also known as the ELC, where they find the help they need from faculty and graduate students. Dr. Török directs the center in addition to his quarterly teaching load.

Between classes, office hours, and running the center, Dr. Török also finds time to write textbooks and journal articles on engineering and mathematics. None of this is especially surprising for an outstanding member of the KGCOE faculty. What is perhaps most striking is that he is also writing a cookbook and medieval romance novel! And that's not all – he also enjoys playing blues and jazz guitar.

Dr. Török, teacher, engineer, mathematician, author, musician, chef – is living the ideals of the Renaissance with his broad ranging interests and penchant for excellence. One is reminded of another famous engineer/Renaissance man – Leonardo DiVinci.

Good-bye to Student Status, Hello to Alumni Ranks

In the fall of 1995, RIT instituted a new student recognition program – the college delegate. At KGCOE, each department selects a student to lead their department graduates at Commencement. From this pool, the college delegate committee chooses one student to represent the college's entire graduating class at Academic Convocation and the Commencement ceremony. Delegates carry the college banner, accept the conferral of degrees as a representative of the their graduating class and give a speech at commencement. The committee looks for a student who has demonstrated the ideals of RIT including, but not limited to, academic achievement. The student must be able to speak comfortably before an audience of approximately 5000 people.

With many highly qualified candidates, the selection process was difficult last January. The departmental delegates were Jonathan Childs - Electrical Eng., David Morse - Computer Eng., Emily Olney - Industrial and Systems Eng., Jared Dolotowski - Mechanical Eng., and Keith Tabakman - Microelectronic Eng. A hearty and well-deserved round of applause for all of these outstanding students from everyone at KGCOE.

After much difficult deliberation, the committee chose Keith Tabakman because of his significant accomplishments: outstanding academic achievement, remarkable commitment to community service as demonstrated by his involvement with RIT Ambulance, experience speaking before large audiences, the ability to articulate his goals, experiences, etc. in an engaging and thoughtful manner.

Keith is now living in Fishkill, NY working for IBM as an APC engineer in the 300mm Fab Controls/Routing Group. He is in charge of all APC efforts for the facility. He is also responsible for recipe management. With this new initiative, he is able to maintain approved copies of tool recipes even when they have changed during experiments.

Keith continues to demonstrate one of the traits that won him the honor as delegate – he volunteers. Keith has joined the Beacon Volunteer Ambulance and IBM's Emergency Response Group. He also intends to pursue a doctorate in the future, but is focusing on work at this time and on obtaining his paramedic license. All of us at the college wish him well and know that he will go on to achieve all that he sets out to do in his future. We hope he visits soon when a craving for a Nick Tahou's garbage plate gets the best of him!

Brick City Festival 2003

Enginuity Contributors

Dr. Harvey J. Palmer, Dean; Dr. Richard Reeve, Associate Dean; Margaret Anderson, Assistant Dean; Mary Jane Frind, Assistant Dean; Terri Stevens, KGCOE Development Officer; Dr. Satish Kandlikar, Professor; Karen Ester, Editor

We're Looking for a Few Good Men & Women

We have two great volunteer opportunities for Kate Gleason College of Engineering Alumni.

During the month of March 2005, KGCOE will be the featured college of the 175th Anniversary of RIT. We want to showcase the history of engineering in general and how KGCOE fits into that story. We need your memories, your knowledge, your insights in helping us tell this story. Dr. Lynn Fuller, an alumnus and faculty member, will chair this committee. We need to start meeting soon – March 2005 will be here before we know it.

Our second opportunity relates to the US FIRST Regional Competition of March 2005. This major event promises to be a lot of fun. We will need help in many different aspects of the competition such as judging, machine shop staff, pit technical support, referees, robot inspection, scorekeeping, crowd control, team assistance, and much more. We will have more specifics in the upcoming months.

If you have an interest in either or both of these opportunities, please contact Karen Ester at 585-475-7135 or kmeeee@rit.edu.

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Kate Gleason College of Engineering
77 Lomb Memorial Drive
Rochester, NY 14623-5603
585-475-2145
www.rit.edu/eng