



Electrical Engineering Professor Steven Nardone "gets it"

For a teacher, nothing surpasses the 'I get it' moment, especially when the students put all the pieces together by themselves," said Electrical Engineering Professor Steven C. Nardone.

Since 1984, those moments have kept Dr. Nardone happily immersed in his position where he has taught just about every course in electrical engineering.

"I guess what has kept me here all this time is that I didn't notice how long it has been," Dr. Nardone quipped. "You see, the faculty here are under the illusion we are ageless. It's because our clients, the students, are always the same age."

Although Dr. Nardone has watched generations come and go over the years, he feels they share a common bond. "Each decade is definitely characterized by pop culture. The habits and traits of the kids really reflect the times. Good students always exemplify good work ethic. It's our job to guide them on the road they travel. They

are delightful people...and we always want them to do better."

After receiving his undergraduate, master's, and doctoral degrees from the University of Rhode Island, Nardone was employed for two years at the ARINC Research Corporation in Maryland and at the Naval Undersea Warfare Center in Newport from 1977 until 1984. His positions there included senior analyst, staff specialist to the science and technology director.

With research interests in systems theory, fuzzy systems, control and estimation theory, random signals, probability and statistics, and signal processing, Nardone is currently working as a consultant to MIKEL Inc. at the university's Advanced Technology and Manufacturing Center.

Alumnus Brian Guimond (BSEE 1970, MSEE 1972) founded MIKEL INC. and its business is in underseas warfare, according to Nardone.

He explained, "I'm engaged in the ap-

Dr. John Buck receives Mac Van Valkenburg Early Career Teaching Award

John Buck, associate professor of electrical and computer engineering, is the recipient of the 2005 Mac Van Valkenburg Early Career Teaching Award. The award is presented by the Institute of Electrical and Electronics Engineers Education Society and recognizes educators who have made outstanding contributions to the field early in their professional careers.

The award consists of a \$1,000 stipend, a commemorative plaque and paid registration to the Frontiers in Education conference. Buck received the award at the October conference in Indianapolis.

"I'm honored and humbled to receive this award from the major international professional organization for electrical engineers," Buck said. "I'm pleased that the award spotlights the Electrical and Computer Engineering Department as a place that encourages and supports excellent teaching and pedagogical research."

Dr. Kathleen Wage of George Mason University's electrical and computer engineering department nominated him for the honor. She and Buck were graduate students and teaching colleagues at MIT and have also collaborated on several projects for the past 12 years. "John is by far one of the most creative and dedicated educators I know," Wage said. "One of the things I've always admired about him is his drive to continually improve his teaching."

Buck was selected for the award based on a number of factors including his evaluations from the last nine years teaching at UMass Dartmouth and five years as a graduate instructor at MIT. At MIT, he earned the Goodwin Medal, the highest award for graduate instructors.

In addition, he is the co-author of

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Message from the Chair



Welcome to the Fall 2005 edition of *INFObytes*. Since our last publication, our department has experienced significant changes. Our previous chairperson, Dr. Antonio Costa, was promoted to Dean of the College of Engineering. As the new chairperson I hope to serve the department with the same zeal and dedication that Dr. Costa demonstrated. We all wish him the best.

We are also very pleased to highlight our new five-year, BS/MS program designed to retain our best undergraduates.

To follow up on previous stories on two of our special projects teams: DAVE, UMass Dartmouth's entry to the DARPA Grand Challenge, was not a contest finalist. However, the approximately 40 students who were involved gained invaluable hands-on engineering experience as well as project management skills. The Solar Decathlon team's modular solar powered home was trucked to Washington, D.C. for the October competition, after which it was donated to Habitat for Humanity.

The Ph.D. program, initiated in 1995, will award five doctoral degrees this year. Four of our graduates are now faculty at various universities around the globe. On page 4 we report on the progress of more of our Ph.D. graduates.

And as anticipated, ABET, the accreditation board for undergraduate engineering education, accredited both our undergraduate programs. This achievement is testimony to the quality of our undergraduate programs and faculty.

We encourage you to join the dialogue on matters related to engineering and education, and hope you will continue to share your stories of personal and professional development. We are proud of your accomplishments and would like to publicize them. Please send your news to us at ece@umassd.edu.

Dayalan Kasilingam
Chair, ECE Department

The new five-year BS/MS program encourages the best and the brightest to stay on for grad degree

Eight students are enrolled in the new five-year combined BS/MS degree program in the Electrical and Computer Engineering Department.

Undergraduate students with outstanding scholastic achievement are nominated for the program during the spring semester of their junior year. Dr. David Rancour, graduate program director, explained that the degree is made possible by double counting nine credits of graduate work as both BS technical electives and MS program courses. A total of 21 credits beyond the bachelor's degree requirements is required to earn a master's degree.

"This program is a way to encourage the best of our own students who have a proven track record to continue on and earn a master's degree," said Dr. Dayalan Kasilingam, department chairperson.

The BS/MS students provide the department with a pool of highly qualified individuals. "These students have been through our undergraduate program and know

the labs. They make excellent teaching assistants," agreed Rancour.

Typically, it would take approximately one and a half to two years of additional study to obtain a master's degree. This new option saves the student time and money. Positions as teaching assistants or research assistants are also possible, said Rancour.

Another advantage, he said, is the "continuing momentum," for the student, who will take courses from the same professors in a familiar environment.

"If students began attending a different school for graduate studies, they would have to go through a learning curve and period of adjustment to adapt to the new professors and surroundings. This program eliminates that step and allows for a smoother transition," he said.

"The five-year combined BS/MS degree is a convenient and affordable way to provide outstanding undergraduate scholars with unique access to a master's degree," concluded Kasilingam.

Mystery man identified

The spring issue of *InfoBytes* featured a mystery photo, calling for readers to identify the two gentlemen depicted on a boat. The mystery has been solved by Gary Gabriel. According to Gabriel, the photo was taken on the deck of the RV *Corsair* in Fairhaven Harbor in August of 1968. He and Pat LaRue are checking out diving gear prior to cruising the Elizabeth Islands. Gabriel and LaRue were among the first group of electrical engineers to graduate in 1969 with the Ocean Engineering Option. They spent part of the summer crewing on the university's first research boat, the former coastal survey craft, *General Wainright*. Today, Gabriel is a technical senior program manager at the Naval Undersea Warfare Center in Newport working on advanced acoustic systems for the nuclear submarine fleet. He and his wife Sandi have three children and live in Middletown, Rhode Island. Gabriel has lost contact with his buddy LaRue but would love for him to get in touch by emailing him at gary02842@yahoo.com.



Gary Gabriel now (above) and with Pat LaRue (left) in our earlier photo.

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two widely adopted textbooks, *Discrete-time Signal Processing*, (second edition), and *Computer Explorations in Signal and Systems* (second edition), published by Prentice-Hall. Buck also co-authored the *Signals and Systems Concept Inventory* (SSCI), an assessment instrument used for junior level signals and systems classes at UMass Dartmouth and approximately a dozen additional schools across the nation.

He co-authored a column about active collaborative learning techniques in signals

and systems courses in the March 2005 issue of "IEEE Signal Processing Magazine." That publication was recently rated as having the highest impact of any electrical engineering periodical in terms of readership and citation.

"John is a dedicated teacher and has worked very diligently to improve the quality of learning in the department," said Dr. Dayalan Kasilingam, department chairperson. "It is remarkable that somebody of his research stature has also made significant



John Buck was honored for his teaching.

contributions in the area of teaching. The Mac Van Valkenburg award clearly recognizes his outstanding accomplishments in teaching."

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plication of estimation theory to problems of immediate concern to the United States Navy." Working with MIKEL personnel, two of whom are recent ECE department graduates, Nardone is developing algorithms for naval at-sea exercises. "Track reconstruction is a process whereby raw measurements of a ship's location and motion are processed to provide a 'best guess' of where the platform is at all times," he said. "The information is used by naval command personnel to evaluate the overall effectiveness of their strategies and tactics."

Nardone said that he enjoys defining and building the mathematical and statistical models necessary to describe the underlying physical processes. Making everything work

in a "real" environment with real data, however, is the challenge. "It's not something to which academics are often exposed...The most rewarding part was being able to work with a small company composed of highly dedicated professionals and to witness our recent graduates mature professionally overnight," he added.

In addition to teaching students at the undergraduate, master's degree and doctoral levels, Nardone serves on a number of committees and is the College of Engineering's coordinator for international education. He has authored a multitude of journal and conference papers in the areas of tracking algorithms, applications and evidential reasoning.

In his spare time, he likes to hike, ski,

bicycle, row and sail, and tend to his vegetable garden. He and his wife Jean have two children, Jeremy and Jordan.

As for future plans, Nardone is content to remain at status quo.

"The College of Engineering is nothing short of great," he said. "And my department derives its strength from its highly diverse, competent and collegial faculty, who in turn, derive their motivation from our students. This is it for me. I'm going to just keep doing what I'm doing—teach and research."

Dr. Nardone encourages former students to let him know how and what they are doing. Contact him at snardone@umassd.edu.

College of Engineering gets a new dean

Antonio Costa, former chairperson of the Department of Electrical and Computer Engineering has been appointed dean of the College of Engineering. Dr. Costa started his new position on September 6.

"The university is indeed fortunate to have such an effective teacher-scholar and one of the most highly respected members of the university community agree to serve as the dean of the College of Engineering," said Provost Louis Esposito in a statement.

Born in the Azores, Portugal, Costa moved

to the United States in 1977. He joined the UMass Dartmouth faculty in 1985 and attained full professor status in 1997. He lives in Dartmouth.

His current research interests are in the areas of signal and image processing with emphasis on time-frequency and time-scale methods. He has authored or co-authored 19 papers that have been published in peer-reviewed journals and conference proceedings.

He received his doctorate in electrical engineering from the University of Rhode Island and his master's degree from UMass

Dartmouth. At UMass Dartmouth, Costa has the unique distinction of earning a Bachelor of Science degree (summa cum laude) with a quadruple major in electrical engineering, computer engineering, computer science and mathematics.

In addition, he is a member of the Institute of Electrical and Electronic Engineers, the IEEE Signal Processing Society, the American Society for Engineering Education, Eta Kappa Nu and Tau Alpha Pi. He has also served as chairperson on several standing university committees.

The doctoral program opens doors for ECE alumni

Caring faculty advisors with diverse specialties were the key to success for several Ph.D. recipients in the Electrical and Computer Engineering Department.

The doctorate degree, available in electrical engineering with an option in computer engineering, began in 1995 and is the university's only stand-alone Ph.D. program, according to Dr. Dayalan Kasilingam. The other doctorate degrees operate either across the five-campus UMass system or in partnership with Lowell or Amherst.

Although Ph.D. holders typically pursue careers in academia, opportunities also abound in industry and government for this small group of alumni.

Dr. Gwo Giun Lee '97 holds the distinction of earning the first doctorate in electrical and computer engineering from UMass Dartmouth. Now an assistant professor of electrical engineering at the National Cheng Kung University in Taiwan, he chose the university for his master's degree and Ph.D. work based on the "worldwide," reputation of Dr. Chi Hau Chen, his advisor.

"A good advisor makes all the difference," Lee noted in a recent phone interview. "I vividly saw and learned from Dr. Chen how to build up research from scratch. He taught me how to learn independently so that I can explore all the new frontiers of the most interesting field of electrical engineering."

With a specialty in computer vision and pattern recognition in medical imaging, Lee spent several years employed by California companies including DTV/TriMedia Group, Phillips Semiconductors; Quanta Research Institute and Micrel Semiconductors, U.S.A., before returning to the classroom to pass on his knowledge to young engineers.

In addition, he served on several committees for Visual Signal Processing and Communications Tracks at the 2004 Institute of Electrical and Electronics Engineers International Symposium on Circuits and System.

"I owe everything I am today to UMass Dartmouth and Professor Chen," Lee said. "I expressed this thought at commencement, but my experiences in industry and as



Dr. Charles McCarrick '97 founder of Micro-Ant is shown with his former advisor Dr. Dayalan Kasilingam.

a faculty member now only want me to say it even more."

Dr. Charles McCarrick '97 a Plymouth resident, is pursuing his career closer to home. As the second student to earn a Ph.D., he recalled the program in its "infancy," but never doubted that he would stick with UMass Dartmouth through his undergraduate, master's and doctorate degrees.

"I had many options, including MIT, but I knew I could get the education exactly as I wanted it at UMass Dartmouth," he said. "And that was because of stand-out courses in electrical and computer engineering, math and physics, and seamless mentors in all departments."

After working for a few years in industry, McCarrick is now the founder and co-leader of Micro-Ant, a Fall River antenna design, development and manufacturing company located at the university's Advanced Technology and Manufacturing Center.

He oversees a staff of six full-time employees and three interns and leads his team of engineers in operations, sales and marketing efforts.

McCarrick recalled that his advisor, Dr. Kasilingam, and other professors ensured that what he was learning pertained to real life experiences. As a result, he feels this "direct" education made him better at his profession. In the future, he plans to send his own employees into the doctoral program.

Dr. Fletcher Blackmon '03 was attracted to the doctoral program at UMass Dartmouth because of the faculty's expertise in his fields of interest such as signal processing, acoustics, optics and communications. His famil-

ilarity with the professors and department, (Blackmon earned a bachelor's degree in 1988 and master's degree in 1991), brought him back to pursue the highest ECE degree.

Since 1989, he has been employed as an electronics engineer at Naval Undersea Warfare Center in Newport, Rhode Island. His work "spans the gamut of engineering" and includes program management, systems engineering, research and development, science and technology and more.

Blackmon noted that professors who serve as mentors instill "the sense of importance, excitement, direction and connectedness that is pivotal to a person's lifelong career choice."

His own positive experience began when he became a research assistant working on underwater acoustic communications in the mid to late 1980s under the direction of advisors Dr. Lee Estes and Dr. Gilbert Fain.

"This was a terrific opportunity that set my course and speed on the seas of technology," he said. It ultimately led to his pursuit of advanced degrees at UMass Dartmouth and a 16-year career with NUWC "working on state of the art, complex underwater acoustic communications systems as well as other interesting engineering areas."

In addition to the enduring mentoring ties established with his advisors, Blackmon cited the diverse curriculum, phenomenal research facilities, and timely availability of resources as the program's advantages.

Dr. Uvais Qidwai earned his UMass Dartmouth Ph.D. in 2001 after receiving his bachelor's degree in Pakistan and his master's degree in Saudi Arabia. He said that he pursued his doctorate in the United States

because he was motivated to work with Dr. Chen in the "image processing" area.

Following graduation, Qidwai served as an assistant professor at Tulane University in Louisiana for a few years and recalled landing that job with relative ease thanks to his solid training.

"I did not come across as a fresh graduate (at the interview)," he said. "The systematic approach in my research group which involved a regular check on progress, pressure of publication and above all, a free hand in the lab, gave me the confidence I needed to compete against people with five to 10 years of experience and get the offer from this prestigious school in the south," Qidwai explained.

The most memorable aspect of his time at UMass Dartmouth, he said, was the support he received from Dr. Chen and other faculty members. "They gave me confidence to believe I can do anything in the world. I asked the professors a lot of questions and then listened to their advice."

In addition to teaching, Qidwai has published 6 journal papers, 16 conference papers, supervised 25 students working to-

ward their senior design theses, 3 master's degree students and 2 Ph.D. candidates. He is authoring two books on image processing and graphics and acted as faculty advisor to several Tulane chapters of engineering organizations and also ran the robotics lab.

Qidwai explained that he has entered into new areas of medical informatics working on mathematical modeling of HIV infection, the rehabilitation process for patients under certain post stroke therapy and some new instruments for medical applications.

During the summer of 2005, he worked as a visiting faculty member for the Higher Education Commission of Pakistan. In September, Qidwai started a new job as a computer engineering professor at Qatar University.

"I had never been in the western world prior to my time at UMD," Qidwai added. "It was a cultural shock. But it ended up being a really good experience and I was made to feel at home."

Dr. Denis Mukhin earned his Ph.D. at UMass Dartmouth in 2000 after receiving his undergraduate and master's degrees at the Moscow Institute of Radio-engineering

Electronics and Automation (MIREA). He opted to study at the university because of the faculty members available in his area of interest, databases and data mining.

Mukhin's advisor was Dr. Paul Fortier, well known in the database field and consummate professional and "good person," to collaborate with. "The best part of my Ph.D. experience was having Dr. Fortier as an advisor," he said.

For the past five years, Mukhin has been working at Oracle, a software company primarily focussed on databases located in Burlington, Massachusetts. Mukhin is a senior member of the technical staff and works in the data mining technologies group. He said that his position now is a "perfect match," to his dissertation.

The Ph.D. program as a whole impressed Mukhin. "Very good interaction was possible because it is a small program," he noted. "I have a lot of friends who came from larger programs that weren't treated like people, but instead felt like just student identification numbers. That was not the case for me. There was a real family feel at UMass Dartmouth."

Graduate Student recognizes the value of internships

Saurabh Kumar, a 2005 graduate, refers to his internship experiences as his "big breaks," and why not?

In February, Kumar successfully defended his thesis and began a job at Qualcomm Inc., in San Diego, California the following month. His thesis was titled, "An Efficient Antenna Subset Selection Scheme for Wireless MIMO System" In his thesis work, Kumar designed a performance metric, which can be used to optimize the performance of wireless MIMO (multiple input, multiple output) systems.

Dr. Dayalan Kasilingam was his advisor.

Kumar spent the latter half of 2004 as an intern at Qualcomm, a leading wireless technology corporation. He explained that the company creates CDMA (Code Division Multiple Access) cell phone chips and it was his group's task to develop test benches to

test these wireless chips for functionality and to categorize their performance.

During a prior internship in fall 2003, he developed affordable antenna selection schemes for MIMO systems at Mitsubishi Research Labs in Cambridge.

Kumar enjoyed both internships because they provided practical training and dovetailed with his academic background. "The courses give you theoretical knowhow but internships allow you to see how knowledge is put into practice," he said. "Hands-on experience really shows you how industry works. And working in teams or groups allows you to communicate ideas and observe those of others."

Kumar received his undergraduate degree in electrical and computer engineering from Birla Institute of Technology in central India.





Gregory Victor Caron and Jeffrey Magalhaes

Gregory Caron and Jeffrey Magalhaes are top ECE graduates in 2005

Gregory Caron and Jeffrey Magalhaes have much in common. Both Lakeville residents, they are graduates of accomplishment.

Caron was the highest ranked computer engineering graduate in the class of 2005, with a grade point average of 3.713 out of a possible 4.0. Magalhaes was the highest ranked electrical engineering graduate, with a grade point average of 3.716.

After graduation, Caron began working for Arkion Systems in New Bedford, a company that focuses on remote monitoring and metering, control of machines and appliances, and energy management solutions.

While at UMass Dartmouth, he was an assistant manager at Décor Images at the Silver City Galleria Mall in Taunton. Dr. Howard Michel, assistant professor of electrical and computer engineering, praised Caron for his ability to juggle that job with a demanding course load. "Obtaining these grades is tough—obtaining them while working is

next to impossible without discipline and dedication. Greg has these talents and more."

Caron was impressed by his experience at the university. "I can never say enough good things about the university. I'm proud to have spent the last four years here. Every teacher has been open to any questions that I could ask and has been a boon to my education."

During the spring Honors Convocation, Caron received a gold stole, which he wore at graduation to indicate that he was a Commonwealth Scholar, representing the university's highest honors designation. A total of 14 Commonwealth Scholars graduated this year. Scholars must have completed a special, intensive four-year program, taking numerous honors classes both in and outside of the major, including a special honors research and writing class, and writing a senior thesis.

Caron also presented his work on the DARPA Challenge autonomous vehicle at the Massachusetts Statewide Undergraduate Research Conference last spring. He had a double major in computer engineering and mathematics.

Magalhaes spent the summers of 2002-

2004 as a student intern at the Naval Undersea Warfare Center in Newport. As a computer technician, he participated in a major installation and overhaul of the local computer network. Magalhaes also worked on the torpedo group's simulation software, and with a team programming a new MATLAB analysis tool for a torpedo system.

He is now an electrical engineer at NUWC, and a part-time graduate student at the university, focusing on digital signal processing under the direction of Dr. John Buck.

"Based on Jeff's excellent mathematical skills and strong programming experience, I expect that he'll excel in our master's program and I look forward to working with him," Buck said.

"The program at UMass Dartmouth is excellent. It gradually increases the difficulty of the material each year, but in a way that is not overwhelming," Magalhaes said. "It also gives you a lot of hands on learning through the labs."

"What stands out most about my time at the university are the good relationships with both students and teachers. On top of that, I got an excellent education which led to a great job."

Nathaniel Barcelos was selected

Student-of-the-semester Nathaniel Barcelos is a New Bedford resident and graduate of Greater New Bedford Regional Vocational Technical High School. He graduated from UMass Dartmouth in 2005 after transferring from Bristol Community College in his sophomore year.

Thanks to his senior design project, developing a Global Positioning System (GPS)-aided inertial navigation system (INS), Barcelos said his future path is clear.

"My first couple of years here, I didn't have a huge connection between what I was studying and what I wanted to do. Now, it is very clear to me. I want to spend



Nate Barcelos with the DARPA vehicle

as ECE Student of the Semester

time working as an engineer on defense guidance systems," he said.

Barcelos and his teammates Christopher Baron, Adrian Gonsalves and Jacob Olson built the navigation system as part of the ECE Department's autonomous vehicle, DAVE, which was entered in the Defense Advanced Research Projects Agency (DARPA) Grand Challenge competition.

"Nate has demonstrated enormous enthusiasm for this project and has performed beyond the level of most undergraduate students," according to Professor Steven C. Nardone, one of his advisors. "He has delved into advanced mathematics and

mastered principles of navigation necessary to understand the concepts of Inertial Navigation Systems (INS). This is remarkable. Nate's achievement is a credit to his initiative and ingenuity and demonstrates just how much students can accomplish when presented with a challenge and the proper environment in which to succeed."

Working toward the DARPA Challenge was intense and time-consuming, with Bar-

celos noting that 18-hour days were not uncommon. Still, he found the experience fulfilling and satisfying.

"I'm putting everything I have into this project because I don't want to end up saying, 'what if?' I have to know that I did all I could in the time allotted," Barcelos said. He is currently pursuing a master's degree at UMass Dartmouth and completing his work on the autonomous vehicle.

"What I like about UMass Dartmouth is the fact that you can walk up to a professor and say, 'I have a problem. When can we meet?' And, they are always available to help."

Barcelos spent one semester as an intern at the Center for Rehabilitation Engineering on campus. He is now employed at Lockheed Martin Corporation as an electrical engineer in the underwater vehicle department.

Student launches feasibility study for wind turbine

The dramatic growth of the campus over the past several years has meant a similarly significant increase in energy usage. Rising energy costs, combined with UMass Dartmouth's commitment to promoting sustainability in campus operations, has led to a one-year feasibility study to measure wind velocity with an eye to possibly locating a power-generating wind turbine on site.

Conducting the feasibility study is Soluzochukwu Nwanze, a senior computer engineering major.

Dr. Paul Fortier, professor of electrical and computer engineering, submitted a proposal to the Massachusetts Executive Office of Environmental Affairs' Sustainability Program to fund the project in its initial stages. The presence of university radio equipment, he said, prohibits the installation of a common wind-measuring device called an anemometer on a 165-foot tower.

Instead, Nwanze is studying the pros and cons of using a sodar, (sonic detection and ranging) system to track the vertical turbulence structure and the wind profile of the lower layer of the atmosphere. Sodar systems are similar to radar (radio detection and ranging) systems (except sound waves, rather than radio waves, are used for detection). A five-foot square cone-shaped unit costs approximately \$5,000 and could be located on the ground or a roof, according to Frank Baptista, technical advisor to WSMU.

Nwanze, who has built a database, is writing software and researching average trends. She will collect data, then compile the information needed to determine the effect of a

wind turbine of UMass Dartmouth's costs. "The campus uses 2,000 megawatt-hours per month when the dorms are operating," she said. "The goal is to provide 50 percent of power this way, through wind, maybe more. It all depends on wind speed."

Facilities Director Lee Nason noted that the campus has investigated a number of alternatives in light of escalating natural gas prices and environmental concerns, including a gas turbine technology plant or solar energy. Harvesting wind seems to make the most sense, she said.

"Solar energy is not yet economically feasible for electric generation in New England. Harvesting wind seems to offer our campus the best promise for clean, inexpensive electrical generation," Nason said.

"After collecting one year of wind data, if we determine that we could recoup the investment within three or four years of operation, we will surely be proceeding with the installation of a wind plant. If the 'pay-back' is longer than that, we would have to balance the economics of the situation with the improved sustainability and the educational opportunities that such an installation on campus would provide to our engineering students."

Nason is enthusiastic about the prospect of wind power, citing its "big 3 E" benefits: economic, environmental, and educational. Cape Cod Community College has a working turbine that supports a portion of its campus. Nason would like to see UMass Dartmouth follow the community college's initiative, and take a lead role in supplying most of the electrical power through envi-



Soluzochukwu Nwanze and Dr. Paul Fortier.

ronmentally sound technologies.

Fortier agreed, pointing out that Portsmouth Abbey School in Rhode Island is also hoping to erect a turbine on its campus to cut energy costs.

If the feasibility study proves positive, he will apply for an implementation grant. The Department of Energy allocates 50 to 70 percent of the funding for a turbine unit with a 30-year lifespan, with the university paying the balance.

Although UMass Dartmouth is a state agency, exempt from some local regulations, Nason and Fortier anticipate working with Dartmouth to maintain a positive "town-gown" relationship throughout the process.

Nason cited collaboration between academic faculty and facilities staff as another plus. "There is an artificial line between the two that shouldn't be there. Blurring that line on a project that is going to work will be a great achievement."



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