A Man of Vision: Interdisciplinary Researcher and Department Head Art Gmitro

UA College of Engineering
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Arthur F. Gmitro is a very busy man. A professor of medical imaging in the UA College of Medicine ? Tucson with a joint appointment in the UA College of Optical Sciences, he holds the Margaret E. and Fenton L. Maynard Chair in Breast Cancer Imaging and also is head of the UA College of Engineering's Department of Biomedical Engineering.

He became department head in November 2014, when he succeeded interim head and associate professor Urs Utzinger.

"Strongly supported by the University of Arizona provost and vice president for research, Art Gmitro’s appointment as head of the BME (biomedical engineering) department reflects the University's growing recognition of biomedical engineering's increasing importance to effective health care," said College of Engineering dean Jeff Goldberg. "As a leader and innovator in biomedical imaging research and education, he is shining a brighter spotlight on our program and its synergies with other UA departments, not only in the College of Medicine but throughout the University."

Gmitro, who has been on the UA faculty since 1987 and has been a full professor since 1996, is known to many on campus. Generations of students have taken his courses in medical imaging and biomedical optics in the College of Optical Sciences. Faculty members know him through research collaborations, as a member of the UA Graduate Interdisciplinary Program, or GIDP, in Biomedical Engineering and from his service on the GIDP Advisory Committee, which he led from 2005 to 2006.

"I have had the pleasure of watching Art Gmitro's development since he entered the University's optical sciences doctoral program," said Harrison H. Barrett, Regents' Professor in the UA College of Optical Sciences and UA College of Medicine ? Tucson's Department of Medical Imaging.

After Gmitro received a bachelor's degree in engineering physics from the University of Illinois in 1974, he earned master's and doctoral degrees in optical sciences at the UA in 1979 and 1982, respectively. He then joined the faculty at Yale University, where he taught for five years and founded a research program in medical imaging.

"A few years later, after an international search, our then-radiology department hired Art to establish a new program at the UA in the emerging area of magnetic resonance imaging, which he did with great skill and leadership," Barrett said. "I was delighted when Art was designated as the next head of the BME program. His broad knowledge of biomedical engineering and medical imaging, his calm demeanor and his devotion to education make him the ideal person for the job."
Gmitro is developing miniature endoscopic devices in the UA Biomedical Imaging Laboratory, where he also studies the tumor microenvironment using novel optical and MRI techniques. He has been a principal or co-principal investigator on more than 10 major research projects in medical imaging, with funding from the National Institutes of Health, Arizona Biomedical Research Commission, American Cancer Society, Air Force Office of Scientific Research, American Heart Association and others.

His leadership positions have included directing the Biomedical Imaging and Spectroscopy Training Grant Program and co-directing the Cancer Imaging Program in the UA Cancer Center [6]. A fellow of the American Institute for Medical and Biological Engineering, Gmitro has received the Rudolph Kingslake Award from SPIE— the International Society for Optics and Photonics— and also the Francois Erbsmann Prize from Information Processing in Medical Imaging.

As BME department head, Gmitro is building faculty and enhancing cross-disciplinary research and training opportunities in the College of Engineering's newest department, formed in 2009. In 2013, the department’s undergraduate program graduated its first class, of 27 students, with a bachelor of science in BME, and in 2015 there were 42 bachelor’s degree recipients. The program continues to grow in popularity as an undergraduate engineering major.

The department's upper-level classes focus on biomechanics, biomaterials, biosensors and pre-health. Students graduate after completing a cross-disciplinary capstone project, and many pursue graduate degrees in medicine, engineering or life sciences. Graduate education opportunities in BME include the UA GIDP in BME [7] and the UA College of Medicine— Tucson's MD-PhD Program [8].

"As a young department and a relatively young discipline, BME offers opportunities for innovations not only in the curriculum but in teaching strategies," Gmitro said. "I thoroughly enjoy interacting with and learning from my students, and I will strive to hire new faculty who view teaching not only as a major commitment, but also as something they enjoy and want to do well."

He added, "I look forward to working with the BME faculty to build a strong department that translates engineering innovation into improved cost-effective health care and educates the workforce necessary to achieve that outcome."

Gmitro believes biomedical engineering will take an increasingly important role in biomedical research and development for improved patient care.

"The future of health care not only is in providing improved treatments for patients with injury or disease, but in providing the resources and tools required for individuals to take a more active role in monitoring and maintaining their own health. I believe the UA has the foundation of interdisciplinary research collaboration necessary to help shape that future."

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