Develop wearable sensors, disease diagnostics, brain mapping, prosthetics and regenerative therapy to improve health care.

The proximity to a medical school, a hospital and state-of-the-art research equipment connected me to experts in many fields who supported my growth as a researcher and student.

- Kaitlyn Ammann, postdoctoral research associate
There’s a real entrepreneurial spirit here. People have the freedom to start new ideas. It’s a place where you’re going to learn those skills that you need to be successful through your entire career.

- Jennifer Barton, professor and director of the BIO5 Institute

Faculty Expertise

Jennifer Barton – barton@arizona.edu
miniature endoscopes that combine optical coherence tomography and fluorescence spectroscopy for colon and ovarian cancer detection • laser-tissue interaction and dynamic optical properties of blood

Ali Bilgin – bilgin@arizona.edu
MRI and X-ray optimization • accelerated MRI and MR parameter mapping • cancer imaging • data compression

Nan-kuei Chen – nkchen@arizona.edu
motion-immune MRI • MRI corrections and improvements • human brain connectivity imaging

Erika Eggers – eeggers@arizona.edu
neuronal signaling and sensory signal processing in the healthy and diabetic retina

Wolfgang Fink – wfink@arizona.edu
ocular biomechanics • artificial vision and vision prostheses • Scheimpflug imaging and ray tracing • computer classification of visual field data • wearable sensors • human brain-machine interfaces

Arthur Gmitro – gmitro@arizona.edu
multimodality imaging methods and techniques • confocal microendoscopy for cancer detection

Philipp Gutruf – pgutruf.arizona.edu
wireless, battery-free, implantable optogenetic devices

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preclinical imaging/neuroimaging brain disorders • traumatic brain injury

Dongkyun Kang – dkkang@arizona.edu
miniature microscopy devices and in vivo microscopy

Minkyu Kim – minkyukim@arizona.edu
biopolymer materials for applications in health care, environmental safety and national defense

Marek Romanowski – marekrom@arizona.edu
contrast agents • nanoparticle and liposome materials for drug delivery • augmented and holographic imaging for surgical guidance

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bio-electronic medicine, peripheral neural interfaces, pelvic floor neuromodulation, regenerative medicine, neuro-prosthetics, computational modeling

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artificial hearts • drug-eluting stents • surgical anti-adhesive barriers • synthetic tissue and vascular sealants • myocardial revascularization and cell delivery methods

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organ-on-a-chip • engineered cellular microenvironment for neurologic diseases • tissue engineering

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label-free, single-molecule detection using ultrasensitive optical sensors

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computational medicine, biomedical data science and informatics • traumatic brain injury and intelligent systems • applied machine learning for neurological disorders

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biophysics and drug delivery • sudden cardiac death

Ted Trouard – trouard@arizona.edu
MRI for neuroimaging and drug delivery

Urs Utzinger – utzinger@arizona.edu
fiber optic sensing and microscopy • imaging instrumentation for gynecological and gastrointestinal cancer • biosensors for minimally invasive cancer detection • whole-brain imaging microscopy

Mark Van Dyke – mvandyke@arizona.edu
Biomaterials, medical devices, prosthetics, regenerative medicine, tissue engineering, entrepreneurial ecosystems

Jeong-Yeol Yoon – jyyoon@arizona.edu
medical diagnostics • water quality and food safety • handheld LAMP and PCR • organ-on-a-chip • tissue engineering