中国科学技术大学
University of Science and Technology of China

Measure S[illegible]mart[illegible]not Harder: Developing novel optic[illegible]ols f[illegible]biology and human health

9 [illegible]6[illegible], 9:00-9:45 am
[illegible]239

[illegible]nary J. Smith, University of California Davis

[illegible]is c[illegible]tical to the quest to understand human biology and improve health [illegible]thi[illegible]ffort, my work focuses on developing unconventional tools and [illegible]he[illegible]al to provide easier, cheaper, and more informative measurements. [illegible]o main thrusts: (1) New Raman spectroscopy techniques and [illegible]o[illegible]gical studies and (2) Low-cost, portable optical systems for field [illegible]Fir[illegible]w I give an overview of my research, followed by two examples: [illegible]a c[illegible]essive sensing spectrometer for fast spectral unmixing, and the [illegible]ortabl[illegible]n scattering instrument for field diagnosis of anemia.

[illegible]eaker:

[illegible]mith receiv[illegible]s B.S. and Ph.D. in Optics from the University of Rochester's [illegible]ptics, in Roc[illegible]er, New York. His thesis work was titled "Integrated Raman and [illegible]attering of Si[illegible]Biological Cells". Since 2009 he has been at the Center for [illegible]nics at the Univ[illegible]y of California, Davis, working on the development of new [illegible]tonics instrumentat[illegible]t UC Davis he has designed a compressive spectroscopy system, [illegible]ated new algorithms to[illegible]ow subtle spectral changes over time, and developed portable diagnostic tools built on c[illegible]hones. In 2012 he was promoted to Assistant Project Scientist and selected as an Entrepi[illegible]rial Fellow, working with the Tahoe Institute for Rural Health Research to develop and c[illegible]ercialize a portable complete blood count device. His work has been highlighted in Wired [illegible]National Public Radio. In addition to his research duties, Zach is also involved extensively [illegible]educational outreach, including as guest lecturer, lab instructor, and internship mentor.

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