

**The Department of
Mechanical Engineering**

PRESENTS

Andrei M. Shkel, Ph.D.

Professor

Department of Mechanical and Aerospace Engineering*,
University of California, Irvine*joint appointments with Electrical Engineering and
Computer Sciences and Biomedical Engineering**Friday, October 20, 2017****WCH Room 205/206****11:10-12:00PM*****MEMS are becoming 3D and atomically precise******Abstract:***

Microtechnology comes of age. Clearly, some significant advances have been made, and we see a footprint of the technology in an ever-growing consumer electronics market full of interactive products enabled by microtechnology. These products include, for example, accelerometers for gaming, gyros for auto safety, resonators for clocks, and more. The questions remain, however: Is the technology really on the level of what we consider to be precision sensing? Is making sensors small necessarily result in degradation of performance? Why do we need the precision of sensing for our daily life and what are the opportunities if we have the precision at our fingertips? Our response to these challenges is a number of think-outside-the-box technologies, including glassblowing technology for precision sensing and silicon origami-like 3D assembly techniques for solid-state and atomic MEMS; all to be discussed in this talk.

About the Speaker:

Prof. Shkel has been on faculty at the University of California, Irvine since 2000. From 2009 to 2013, he was on leave from academia serving as a Program Manager in the Microsystems Technology Office of DARPA, where he initiated and managed over \$200M investment portfolio in technology development. His research interests are reflected in over 200 publications, 37 patents, and 2 books. Dr. Shkel has been on a number of editorial boards, most recently as Editor of IEEE/ASME JMEMS and the founding chair of the IEEE Inertial Sensors. Dr. Shkel is the IEEE Fellow and the 2018 President-Elect of the IEEE Sensors Council. He has been awarded in 2013 the Office of the Secretary of Defense Medal for Exceptional Public Service, the 2009 IEEE Sensors Council Technical Achievement Award, and the 2005 NSF CAREER award. He received his Diploma with excellence (1991) in Mechanics and Mathematics from Moscow State University, Ph.D. degree (1997) in Mechanical Engineering from the University of Wisconsin at Madison, and completed his postdoc (1999) at UC Berkeley.