Joint Department of
BIOMEDICAL ENGINEERING

UNC CHAPEL HILL | NC STATE UNIVERSITY

Coulter Seminar Series Presents

"Bio-Robotics and Micro-nanomechatronics for Biomedical R&D"

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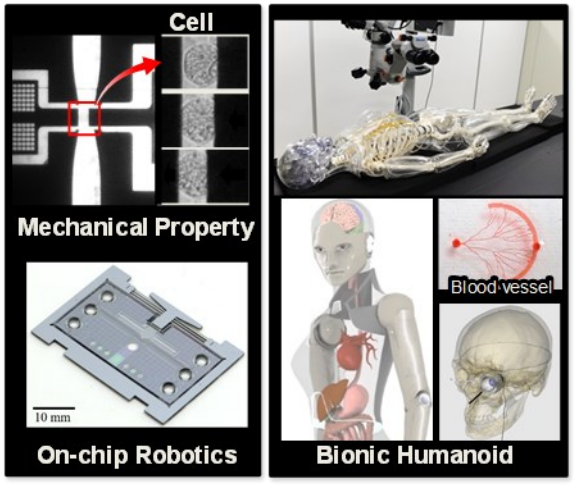
Fumihito Arai is Professor of Dept. of Micro-Nano Systems Engineering, Dept. of Mechanical Science & Engineering, Graduate School of Engineering, Institute of Innovation for Future Society, Nagoya University. He is also Director of Center for Micro-nano Mechatronics, Nagoya University. His research fields are Bio-MEMS, Micro-Nano Robotics, and Bio-Robotics. He received 76 awards on his research activities, for example, Early Academic Career Award in Robotics and Automation from IEEE Robotics and Automation Society in 2000, Best Conference Paper Award at IEEE ICRA2012. He is the author of 337 journal papers. He was the Vice-President for Technical Activities, IEEE Nanotechnology Council in 2002 and 2003. He was AdCom Member of IEEE Robotics and Automation Society in 2009-2011 and 2012-2014. He is the Vice President for Technical Activities, IEEE Robotics and Automation Society since 2014 (until 2017). He was President of Society for Chemistry and Micro-Nano Systems(CHEMINAS), Japan in 2014 and 2015. He is Editor in Chief of Advanced Robotics since 2012 (until 2017). He is a board member of IFRR(International Foundation of Robotics Research) since 2011.

ABSTRACT

For innovation in biomedical field, advanced engineering tools and methods are inevitable. Robotics, Micro-nanomechatronics, and Micro-TAS expanded their applications by integrating MEMS and nanotechnologies. In this talk, recent progress of biomedical research & development based on Bio-Robotics and Micro-nanomechatronics is introduced. For example, bionic humanoid for medical simulator and training using 3D printing technology, Integration of Micro-nano Robotics and Microfluidics for sensing of mechanical property of cells and spheroids, high throughput cell sorting, separation of rare cells, etc.



Friday, March 10th
12:00 Noon

Presented From: Nagoya University
Videoconferenced to: 4142 Engineering Building III (NC State)
321 MacNider Hall (UNC)
& East Carolina University (ECU)