

IRA A. FULTON SCHOOL OF ENGINEERING

“Co-Adaptive Learning: Adaptive Technology for the Aging”

Arizona State University, Tempe, AZ

January 8-9, 2009

Supported by the National Science Foundation (SBE-0518697)

Symposium Objective

This mini-symposium is third in a series of symposia and workshops addressing Co-Adaptive Learning in Biological and Technological Systems. Our primary goal in this series of symposia and discussions is to explore key issues regarding co-adaptation, i.e. the integration of adaptive engineered systems with adaptive biological systems. This goal, in turn, is driven by the desire to design devices and technology where adaptive engineered systems are seen as interacting in dynamic ways, and across many organizational scales from the cellular to the behavioral, with adaptive biological systems. The focus on the technology side is on adaptive actuators and sensors, on the IT side on adaptive algorithms and modeling. Plasticity of the living system is a cross-cutting theme. In this symposium life scientists, engineers, mathematicians, and clinician-scientists will discuss limitations and opportunities for anticipated advances in enabling technologies that promote adaptation and learning in the nervous system of the aging.

Agenda : Thursday, January 8, 2009

ANS - University Center

8:30am - 11:00am Lab Tours (meet at University Center, Ste. 116 — <http://ans.asu.edu/contact>)

ASU-Memorial Union (MU) - Ventana #241C

12:15pm - 1:00pm Registration (outside of Ventana 241C)

1:00pm - 1:30pm Introductory Remarks

Ranu Jung, PhD

Harrington Department of Bioengineering &
Co-Director, Center for Adaptive Neural Systems

1:30pm -2:30pm **Hermano Igo Krebs, PhD** [<http://meche.mit.edu/people/research/index.html?id=130>]

Principal Research Scientist & Lecturer, Mechanical Engineering
Massachusetts Institute of Technology

"Neurorehabilitation and Robotics: What have we learned so far"

2:30pm – 3:30pm **Randal A. Koene, PhD** [[http://rak.minduploading.org/Randal A. Koene.html](http://rak.minduploading.org/Randal_A_Koene.html)]

Director, Department of Neuroengineering
Fatronik Foundation, San Sebastian, Spain

“From Wheelchairs to Neural Interfaces in a Virtual Brain Laboratory”

3:30pm - 4:00pm Break

4:00pm - 5:00pm **Richard Neptune, PhD** [<http://www.me.utexas.edu/~neptune/>]

Associate Professor, Mechanical Engineering
University of Texas at Austin

“Experimental and simulation analyses of human gait: insight into neuromotor control”

Campus Map: <http://www.asu.edu/map/interactive/?campus=tempe>

Visitor Parking in Apache Blvd Structure (corner of Lemon St & Normal Ave)

OR Fulton Center (College Ave & University Dr.)

Contact for further information: Jeanine Elliott : Phone: 480-965-9489 E-mail:

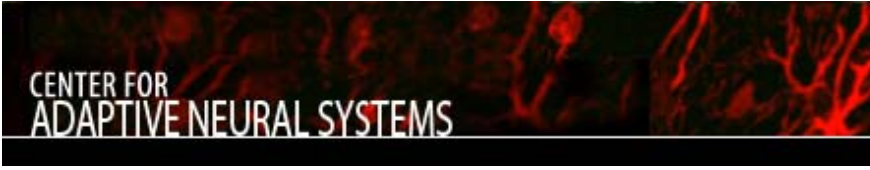
Center for Adaptive Neural Systems <http://ans.asu.edu/>

*“designing adaptive engineered systems
to promote adaptation in neural systems”*

Participating Units:

Ira A. Fulton School of Engineering:
Center for Adaptive Neural Systems
Harrington Department of Bioengineering
School of Computing & Informatics
Department of Electrical Engineering
Imaging and 3D Data Exploitation and Analysis Lab

College of Liberal Arts and Sciences:
Department of Kinesiology
Department of Mathematics and Statistics
School of Life Sciences



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Agenda : Friday, January 9, 2009

ASU-Memorial Union (MU) Ventana # 241A & B

- 8:00am - 8:20am Breakfast
- 8:20am – 8:30am Introductory Remarks
Ranu Jung, PhD
Harrington Department of Bioengineering & Co-Director, Center for Adaptive Neural Systems
- 8:30am - 9:30am **Mindy Fain, MD** [<http://aging.medicine.arizona.edu/StaffCVs/mindy%27s%20CV.pdf>]
Chief, Section of Geriatrics and Gerontology, Department of Medicine and
Director, Arizona Geriatric Education Center, University of Arizona
Medical Director, Home TeleHealth Implementation Project,
Southern Arizona VA Health Care System, Tucson, Arizona
“There's No Place Like Home’: The Promise of Co-Adaptive Learning for Aging in Place”
- 9:30am - 10:30am **Misha Pavel, PhD** [<http://www.bme.ogi.edu/~pavel/>]
Professor, Department of Biomedical Engineering and Department of Computer Science and
Electrical Engineering,
Co-Director of Orcatech, Oregon Health and Science University
“Statistical Pattern Recognition and Machine Learning in Elder Care”
- 10:30am - 11:00am Break
- 11:00am - 11:30am *Overview: Pervasive Health Monitoring*
Sandeep Gupta, PhD
Department of Computer Science and Engineering, ASU
Kanav Kahol, PhD
Department of Biomedical Informatics, ASU
- 11:30am - 12:15pm *Panel - Cognitive and Sensorimotor Fitness*
Moderator: James Abbas, PhD
Harrington Department of Bioengineering & Co-Director, Center for Adaptive Neural Systems
Speakers:
Holly Shill, MD [<http://shri.org/>]
Director, Thomas H. Christopher for Parkinson’s Research
Sun Health Research Institute
Alvaro Fernandez, MBA/MA [<http://www.sharpbrains.com/about-us/the-team/>]
Chief Executive Officer, SharpBrains.com
Skip Rizzo, PhD [<http://vrpsych.ict.usc.edu/people/rizzo.html>]
Rehabilitation Engineering Research Ctr for Technologies for Successful Aging with Disability
University of Southern California

ASU-Memorial Union (MU) - Turquoise Ballroom #220

1:30pm - 4:30pm Poster Session and Reception (contact jeanine.elliott@asu.edu for info about presenting a poster)

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