Calit2 – Medical School Faculty Meeting  
June 3, 2009

Dinner meeting at UCI University Club Library

0. G.P. Li, Calit2 Director  
   www.calit2.uci.edu  
   http://www.calit2.uci.edu/about-calit2/itemdetail.aspx?cguid=b5e361fb-be74-4e24-90c2-84ffacff8fe1  
   Introduction  
   ➔ Goal of the meeting: Connecting faculty between Calit2 and School of Medicine

1. Xiangmin Xu, Physiology  
   http://www.anatomy.uci.edu/xu.html  
   ➔ Has interest in miniature wireless recording device

2. Ozdal Boyraz, EECS  
   http://apdsl.eng.uci.edu/ozdalboyraz.html  
   Advanced photonics lab  
   Working on sec response devices  
   ➔ Interest in collaborations

3. Joseph Wu, Brain Imaging Center  
   Studies sleep deprivation  
   Uses Affymetrix gene chips  
   ➔ Interested in other techniques

4. Homayoun Yousefi’zadeh, Electrical Eng and Computer Science  
   www.ece.uci.edu/~hyousefi/  
   Software-defined radios  
   ➔ Interest in medical monitoring

5. Subramaniam Krishnan, Cardiology  
   http://www.healthcare.uci.edu/spotlight.asp?filename=data/cardiology_services/ep_pacemaker_services  
   Focused on rhythm abnormalities of the heart  
   Defibrillators  
   Ablation  
   ➔ Interest in Advance catheter techniques for the heart – resistive heating  
   ➔ Looking for expertise in electromagnets
6. Stuart Ross, Assistant Director of Calit2, Research Development
   Works with faculty on writing grants to Federal and other sources of funding

7. John Crawford, Dance Department, Calit2
   Digital Media Arts
   → Interest in studying human movement – video and sound of movement

8. Chen Li, ICS
   [www.ics.uci.edu/~chenli/](http://www.ics.uci.edu/~chenli/)
   Work on data management
   Looking at Search where information is fragmented
   i. full text search
   ii. error tolerant
   iii. can recognize a “Bill” as “William”
   → Building this type of search for Pub Med
   i-PubMed Interactive PubMed

9. Ahmed Faizy, Pharmacology, also with Agilent Technologies
   Interested in Life Science connected with electronic measurement
   → Interested in use of microwave for measurement of water in lungs
   → interested in cell imaging
   Note to all: Agilent Technologies Foundation has grants of $35K to $50K available

10. Susan Elliott Sim, ICS
    Studying people developing software
    How people do code search on the internet
    How stakeholders negotiate the start of a SW project
    → Interest in collaborations

11. Andrius Baskys, Psychiatrist Long Beach VA hospital
    Uses microarrays for blood gene expression studies, RNA study
    → Interest in personalized medicine collaborations
    i. What chips to use
    ii. What SNP to study
12. Anne Tournay, pediatrics
   http://www.pediatrics.uci.edu/faculty/neurology/tournay/tournay.html
   Working with children and adults with Down Syndrome
   → Interest in home based telemedicine systems to help families of those with Down’s Syndrome

    http://spds.ece.uci.edu/~sjenks/
    Large scale visualization platform
    → Interest in collaborations on complex image analysis

    Stem Cell Research, Physical Medicine and Rehabilitation
    Human stem cell research
    Working with eHSC, fetal stem cells, and adult stem cells
    → Interest in studies of recovery of spinal cord injury (students count movements)
       Interest in analysis of video
    → Also interested in spinal cord tissue analysis using SEM
       It would be great if they could trace cells

15. Jeff Russell, Dance Department, Dance Medicine and Science
    http://dance.arts.uci.edu/faculty/bio/russell/
    background in Sports Medicine
    Orthopedic imaging, esp. looking inside ankles and feet
    → Interest in video analysis of movement
    → Surface electromyography – look at balance

    K+ ion channels, looking at Channel proteins
    Electrical wave propagation
    Now do brain slides
    - Can detect which cell group was activated
    → Interest in technologies that could show what part of the cell is activated

    Working on systems biology
    Predicting of protein-protein interactions
    Project – New tool for aligning biologic networks (metabolic)
    → Looking for collaborators interested in the use of this tool
18. Ed Wong, Ophthalmology  
http://www.healthaffairs.uci.edu/uceye/wong.htm
Working on retinitis pigmentosa
Evaluating treatments
→ Interested in cap with vision system
→ Also interested in microfluidics on a chip

19. Naveen Ashish, Calit2  
http://www.ics.uci.edu/~ashish/
Data management
Interest in data integration, database privacy
Medical response in large scale disasters
Working with Carl Shultz, Emergency Medicine and California Institute for Hazards Research
→ Accessing of medical records, pharmacy environments
→ Automated extraction from data systems
→ How to connect legacy systems

20. Varun Sehgal, Radiation Oncology
Medical physicist developing brachytherapy techniques
Demonstrated feasibility of using radioactive bone cement to treat bone
http://octane.uci.edu/emails/090529_eforum.html
→ Sees potential benefit from
  i. HiPerWall
  ii. Telemedicine

21. David Hoyt, Surgery  
Trauma care
Crash info determines what type of injury
→ Interest in video /speech connection with the people in the field
  - Would assist with decision making in the field
→ Interest in HiPerWall would be a great medium for physicians who is deciding on treatments in an emergency room

22. Pai Chou, ECS  
www.ece.uci.edu/~chou/
Wearable wireless devices www.ecomote.net
EcoMote sensor size was driven by a collaboration with Dan Cooper in UCI Pediatrics
→ Interest in other medical sensor collaborations

23. Payam Heydari, EECS  
Working on Analog-to-Digital Converters (ADC) → startup ZeroWatt
Also working on submiliwatt circuits
→ Interest in high frequency circuits for imaging applications (95 GHz passive imager)
24. Jim Murry, CIO for Medical Center
   Implementation for medical information system
   → Need for linked research data warehouse
   Currently have 20 years of clinical information on various systems
   → Interest in Telemedicine
   Question of minimizing cost while meeting bandwidth requirements

   Novel display technologies for remote collaboration
   → Interest in Novel Display technologies for telemedicine
   Interact with the data
   → Work with doctors on a “white board”
   → Training purposes (projection-based system), could it replace some of the physical contact interactions

   Interested in translational medicine
   Techniques that can help identify compounds, screen, find the ones with good activity
   Collaboration opportunities:
   → Microfluidic device for protein screens
   → Systems biology
   → Applications to the clinic

27. Zoran Nenadic, BME  http://cbmspc.eng.uci.edu/
   Spatial – temporal signals, biomedical signal processing
   Interest in invasive and non-invasive techniques
   → Can analyze data of various types, interest in translational projects

28. Jeff Greenberg, Entrepreneur, Tech Coast Works  www.techcoastworks.com
   SW background
   Worked with HiPerWall on commercialization of the technology
   → Interest in working with professors on advancing their technologies to commercialization

   Working on 3-D medical data sets
   → Stem cells – track the fate of stem cells during their life
   → Remyelination of axons
   → Stitching of images together
30. Luke Bao, ICS  
http://www.ics.uci.edu/~lbao/
Wireless networking
Building of networks
Studying the mobility of users
→ Interest in mesh networks for clinics or hospital lobby

31. John Hoefs, GI  
Hepatologist
Pathophysiologist – studying liver disease
→ Data mining – secure database
→ Decision analysis
→ Interested in data export, real time search engine

32. Paul Marc, Calit2  
→ Interest in Telemedicine collaborations
Working with CHOC
Working with Prof. Mark Bachman – Telios

33. Elias Wilson, TATRC Telemedicine and Advanced Technologies Research Center
Part of DoD, fund medical research
They can do gap funding for military applications, up to $250K/year
CIMIT Conference in Boston www.cimit.org/innovationcongress.html
Center for Integration of Medicine and Innovative Technology
They helped create it, originally funded by TATRC
→ Interest in:
   i. PTSD (VA Psychiatry)
   ii. HIPerWall – would be useful in an OR of the future
   iii. Use of telemedicine in a similar way as piloting a UAV

34. Hector Parra, SW engineering for Calit2 projects
http://www.calit2.uci.edu/about-calit2/itemdetail.aspx?cguid=5cd37b58-ec74-4b1e-8ce0-0a03720e57e0
Grandmother had a stroke, no computer in her home
   - if someone could have monitored her health and status through the TV
→ Working on systems to monitor blood pressure, glucose levels
   Goal: monitoring system available at Wall Mart as a cable box addition
35. Francesco Tombola, Physiology and Biophysics
   http://www.ha.uci.edu/pandb/faculty/Profile%20F%20Tombola.htm
   Working on molecules (molecular mechanisms), neurons
   → Interest in:
      i. Microfluidic manipulation
      ii. Small circuits with microfluidics
      iii. Manipulation of images

   Wireless communications
   → Interest in Emergency / accident networks

   ("Big guy with a bigger guy on solving big problems on a big displays"
   → Interest in visualization collaborations, recently working with
      i. Cancer Center data
      ii. Brain imaging data

38. Jian-Guo Zeng, Electron Microscopy Lab at Calit2
   Numerous microscopy tools
   → Environmental SEM - a tool that would be of special interest to bio researchers

39. Ira Lott, Director of Telemedicine at UCI
   Started work on telemedicine in 2001, has done 1200 consultation to date using telemedicine
   Worked on old platform, switching to PC-platform, HIPAA-compliant
      - Working with Telios in Calit2
   Telemedicine is being pushed at Federal and State levels
   Prop 1B (2006) funded telemedicine in California → $24 M for UC Grant for California rural clinics
   → Interested in Dance visualization for gate disorder analysis
    Mechanics if materials and structures
    Manufacturing of MEMS sensors for small force measurement
    - Can measure 10 nN to 100 mN
      → Interest in collaborations that require such measurements
    → Writing an NSF Major Instrumentation Grant for a Polytec Microsystem Analyzer
      i. Useful in measurement of motion
      iii. Anyone interested in use of this machine, please send application to him for inclusion in the proposal

41. Quyen Ngo-Metzger, Internist, Medicine
    Doctors talk to patients and dispence medicine, not enough time for full communications with the patients
    Deals with many cases of diabetes and obesity
    → Interested in patient communication and how to improve, especially for:
      i. Elderly
      ii. Patients with poor English skills

42. Athina Markopoulou, EECS [http://aegean.eng.uci.edu/](http://aegean.eng.uci.edu/)
    Computer networks
    → Interest in Video streaming needs in telemedicine and emergency situations
      - High bandwidth needs
    → Also interested in social networks such as Facebook, how do they work

43. Dongbao Chen, Department of Obstetrics and Gynecology
    Changes in uterine / placenta vascular physiology
    Placenta angiogenesis
    → Interest in technologies at the cellular level

    Research development at the School of Engineering and broader
    Contacts with industry on potential partnering (local organizations like SoCalBio)
    Encouragement of entrepreneurship
      i. Entrepreneurship Course for Scientists and Engineers with noted guest speakers
         (President of Allergan Medical, CSO of Edwards LifeSciences, President of AMO, VP of Bausch Lomb, etc) [https://eee.uci.edu/09w/13180](https://eee.uci.edu/09w/13180)
      ii. Entrepreneurship Forum at UCI (in partnership with OCTANe @ UCI and UCI OTA) held alternate Fridays at Calit2 Rm 3008
iii. Encouragement of participation in the UCI Business Plan Competition, contacts with venture capital and entrepreneur community (OCTANe)

www.merage.uci.edu/ResearchAndCenters/Beall/SYCR.aspx

45. Ralph Clayman, Dean, School of Medicine www.som.uci.edu

Good for Calit2 and SoM to “break bread” together

→ Identify projects

Presentations at Chancellor’s Club and CEO Roundtable of the activity

They were at dinner, but left before they had a chance to present (last table)

1. Margaret Schneider, Social Ecology http://socialecology.uci.edu/m Schneider

Physical activity of adolescents


Current Research Study: Assessment of Fitness in ADHD Children

Other people who were there earlier, but not at dinner:

1. David Kirby, Physics http://positron.ps.uci.edu/~dkirkby/


→ Interest in the display technologies

→ Interest in wireless sensor devices


→ Interest in driving fitness monitoring / analysis