Quick Fixes (or low-hanging fruit?)

Parking - parking passes need to be the same; one university, one (split) campus, one parking pass. The best solution is one that makes sure people from each campus are fully welcomed on the other one(s).

Different approaches to bringing clinically-driven questions and issues more directly to researchers. This should include methods that will invite unanticipated input sources.

Improved access for engineers and researchers to patient service provision sites from outpatient to surgical settings. By getting closer to the interface with patients and caregivers, improved specification of needs and conditions of implementation will be possible.

Communication, face-to-face meetings. Participants value direct conversations with individuals (such as with Steve Moldin) who connect them with others with aligned interests and complementary skill sets.

Funding & telling the story

Increase size of Zumberge and CTSI grants. A different approach to this suggestion may be to review the terms so that the effort, description and objectives fit better with the funding levels attached to these initiatives.

Innovators and researchers should have more opportunities to practice presenting their work, ideas and interests to different audiences including personnel from the development offices connected with the schools and affiliated research institutes. These efforts could build on "fast pitch" evenings organized by the Stevens Innovation Institute.

Methods and applications (engineers and MDs) together on targeted grant proposals chosen in a tailored, strategic manner (i.e., funding from foundations for pilot projects).

External review panel - including potential funders - for prioritization and determination of impact for larger university initiatives. There are a number of different advisory councils that may be harnessed in a way that generates new ideas about funding avenues, collaboration on economic development initiatives, university - industry partnerships, etc. Creating a forum of potential benefactors and letting this group decide whether and what to fund from an attractive set of options.

Forging bonds

Matching service between clinicians (who could be asked for their "I wish we ..." type needs) and research groups: something like a "sciencematch.com" complete with some direct means of facilitating these collaborations.

Working with others at USC to be more active and effective in finding industry contacts and matching the university portfolio to an industry portfolio.

Articulating the hunch

Understand how the other side thinks: different group exercises to enable improved ability to form focused interdisciplinary collaborations linking clinical need with research advances.

"Speed-dating" and/or brief round-robin brainstorming sessions where groups of clinicians can circulate informal description of issues, "pain points," hunches, etc. to initiate discussion with engineers.

A "micro finance" approach to research collaboration that brings smaller (10-12 max) groups together with the aim of achieving specific aims.

Access to corporations and relationship building with representatives from industry to foster both a knowledge-driven, academically-oriented agenda and a customer-focused responsiveness. What are the problems faced by industry in the medical device space?

For neurosurgery:
1. How to adapt and apply systems modeling to improve restorative options.
2. More non-invasive options - focused ultrasound, electrical source imaging
3. Imaging that will help guide the surgeon's understanding of functional implications of cuts made. Refining measurements relevant to interventions (What is it? What can I do? - situationally specific, strengthens decision criteria and logic, efficient choice of measures).

Ability to develop models for particular diseases with parameters tuned to specific patients. Get clinicians involved to develop and collect parameters to collapse complex models into versions recognizable and useful in the clinical realm.

More money for program development. "Nuclei of projects" with a process of vetting ideas transparently. Help make larger decisions around "what USC wants to sell" including unifying themes like aging that will have growing importance due to a demographic shift to older age groups.

Kindling the spark

Teach students, including MDs, more about developing and refining models earlier in their training.

From the high school students attending:
1. Ensure accessibility of new technology to traditionally underserved populations.
2. Evaluation by non-MDs and non-engineers; assess lay public interest in devices contemplated.
3. Include parents and caregivers of patients in the process of innovation.
4. Start teaching medical innovation at the high school and college level

- Working with younger aged proponents of Science to gain more support from the larger public
- Creative approaches to disseminate ideas that will attract people to work with renowned investigators.
- Helping students educate their parents about the importance and relevance of research.

Health, Technology, and Engineering HTE@USC Frontiers Symposium
Neuroscience Engineering Challenges: Fostering interdisciplinary innovation
March 25th, 2011, Ronald Tutor Campus Center, Room 450 (The Forum)
FINAL AGENDA

Pictorial summaries of the sessions below can be found at the HTE@USC website:
http://hte.usc.edu/events/frontiers-symposium-neuroscience-engineering-challenges.html

8:30am to 9:00am   Registration & Breakfast

9:00am to 9:20am   Opening Introductions-
Dean Yannis Yortsos, of The Viterbi School of Engineering.

9:20am to 10:30am   Keynote "Making Maximum Impact with Innovation"
Krisztina "Z" Holly
> **USC Vice Provost for Innovation**
> **Executive Director, USC Stevens Institute for Innovation**

10:30am to 12:00pm   Roundtable I: Neural system modeling
  Theodore Berger, Ph.D
  Christi Heck, M.D., M.M.M
  Charles Liu, M.D., Ph.D
  Vasilis Marmarelis, Ph.D
  Norberto Grzywacz, Ph.D
  Terry Sanger, M.D., Ph.D

12:00pm to 1:00pm   Lunch

1:00pm to 2:15pm   Roundtable II: Control and Movement
  Tishya Wren, Ph.D
  Shri Narayanan, Ph.D
  Chester Koh, M.D
  Urbashi (Ubli) Mitra, Ph.D
  Phil Requejo, Ph.D
  Giselle Petzinger, M.D.
  Terry Sanger, M.D., Ph.D

2:15pm to 2:30p   Wrap-up and next steps

Roundtable Process
This symposium is intended to ignite new cross-disciplinary projects by inviting interdisciplinary groups to share their lessons learned, to extend the frontier of their efforts and to invite audience participation in the form of questions, ideas and advice. As a working meeting, the objective is to help discuss how interdisciplinary collaboration defines frontier challenges that can be addressed through innovation. All attendees will serve as observers and provocateurs. After – and perhaps during - the roundtable presentations and discussions, attendees will be expected to offer input and questions to advance the discussion. The roundtable format will be an open forum for audience input and guidance in mapping new frontiers that will attract the energies of new and existing interdisciplinary teams.