UCSF- Wide Strategic Initiatives: Update and Discussion

October 7, 2013

FAS Town Hall

Jeff Bluestone, EVCP
**EVCP-led Initiatives: Highlights**

- Precision Medicine at UCSF

- UCSF 2.0: Defining the Future

- Other High Impact EVCP Initiatives:
  - Basic and Clinical Research Infrastructure Investment
  - Student Education and Support
  - Addressing key Institutional Issues: Space, IDC, Core and IT investments

*Highlights for Today*
What is Precision Medicine?

UCSF Definition:

Precision medicine is the use of genomic, environmental, molecular and other data to define individual patterns of disease, resulting in more targeted individual treatment and more accurate diagnoses and unanticipated connectivity between diseases and syndromes that facilitate drug development and health.
UCSF: An Early Role in Precision Medicine

• Sue co-chaired the National Academy of Sciences committee that developed the 2011 report, *Toward Precision Medicine: Building a Knowledge Network for Biomedical Research and a New Taxonomy of Disease*, using the term “precision medicine.”

• The report identified the challenge of integrating the rapidly expanding range of detail of biological, behavioral and experiential information to facilitate basic discovery, and to drive the development of a more accurate and precise classification of disease, which in turn will enable better medicine.

• The committee identified an "information commons" and “knowledge network” as an essential infrastructure to modernize biomedical research and improve patient care.

• The committee recommended pursuing pilot studies that could address and solve some of the hurdles to advancing precision medicine.
Identifying Distinct Molecular Phenotypes of Asthma

- Dr. John Fahy, CVRI Airway Research Center
- Clinical and basic research, MDs and PhD researchers
- Collaboration with Genentech

Grand Opportunity Genetics Project

- Neil Risch, Institute for Human Genetics, UCSF; Cathy Schaefer, Department of Research, Kaiser
- Largest project of its kind to link genetic information, with high level of diversity among 100,000+ members, to decades of comprehensive health records, data on lifelong environmental exposures and telomere lengths

Developing New Biomarkers of Prostate Cancer Presence, Aggressiveness & Response to Therapy

- UCSF Biomedical Nuclear Magnetic Resonance Facility
- Directed by Dr. John Kurhanewicz, dedicated to biomarker discovery and clinical translation
OME/Precision Medicine: A Starting Point

The OME Summit: Over 170 national and international leaders to discuss and create ideas in Precision Medicine

The Precision Medicine Platform: invested over 15 million in bioinformatics/computation sciences, genomic medicine, digital health and information commons/knowledge network
Cilia are found on sensory cells and many other cell types.

Cilia receive intercellular signals.
Diverse manifestations of ciliopathies

- Hearing loss
- Anosmia
- Developmental delay
- Retinal degeneration
- Heterotaxia
- Hepatic fibrosis
- Polycystic kidney disease
- Obesity
- Polydactyly
UCSF defines Cilia disease
Tiny Cell Hairs Cause Array of Seemingly Unrelated Diseases

In the future, will cilia be a therapeutic target?
Tauopathies are a class of neurodegenerative diseases associated with the pathological aggregation of tau protein.

- Alzheimer's disease
- Amyotrophic lateral sclerosis/parkinsonism-dementia complex
- Argyrophilic grain dementia
- Corticobasal degeneration
- Creutzfeldt-Jakob disease
- Dementia pugilistica
- Diffuse neurofibrillary tangles with calcification
- Down's syndrome
- Frontotemporal dementia with parkinsonism linked to chromosome 17
- Gerstmann-Sträussler-Scheinker disease

- Hallervorden-Spatz disease
- Myotonic dystrophy
- Niemann-Pick disease, type C
- Non-Guamanian motor neuron disease with neurofibrillary tangles
- Pick's disease
- Postencephalitic parkinsonism
- Prion protein cerebral amyloid angiopathy
- Progressive subcortical gliosis
- Progressive supranuclear palsy
- Subacute sclerosing panencephalitis

... But also

- PTSD
- Concussion Injuries
- Psychological disorders

Stan Prusiner, Bruce Miller and many others
In the future, will Tau be a therapeutic target in PTSD, Alzheimer's, Parkinson's, etc?
Create essential infrastructure and programs to support efforts in PM across the continuum

The question for UCSF: how to leverage our strength and excellence as a research enterprise and a clinical enterprise, and our role as a teaching university to help advance this area?
Precision Medicine: Will Change the Way we Deliver Health Care

Deliverables:

• Engage patients and citizens in delivering health care information to Measure Health
• New underlying mechanisms of disease
• Choose Therapies based on mechanisms
• Monitor Results and Predict Outcomes
• Predict Outcomes
• Deliver new drugs and health care devices
PM Followup – 2014 and beyond

- Follow up efforts (pilot projects) by NIH and based on NAS based 2011 report, *Toward Precision Medicine: Building a Knowledge Network for Biomedical Research and a New Taxonomy of Disease.* Major UCSF involvement in process

- Implementation strategy for Precision Medicine platform – major fundraising in partnership with UDAR

- Appointed Mike Blum Director of Center for Digital Health Innovation, Robert Nussbaum as Director of the Genomic Medicine Program, and creation of a Precision Medicine Platform convening group (Keith Yamamoto, chair).

- Recruitment underway for Director, Institute for Computational Health Sciences

- Development of additional joint programs with UC Hastings, Lawrence Berkeley National Labs, and UC Berkeley
Ongoing and Next Steps

- **Steering Committee sponsored by UCSF Leadership**
- **Role:** to define a vision and scope for precision medicine at UCSF and help address challenges and obstacles
- **Individual Leads to Advance Precision Medicine:**
  - Platform
  - Communication and Branding
  - Education
  - Clinical and Translational Research
  - Policy and Regulatory
  - Patient Care

- **Outreach to key participants**
- **Formalization of event approximately every 18 mths/2 years, focusing on a different challenge of Precision Medicine**
- **UCSF sponsored and Bay Area centric**
UCSF 2.0: Objectives and Background

- UCSF 2.0 is a Chancellor-led initiative to engage the entire UCSF community to define a vision for the Future, for our university.
- Why are we doing this? Because, while we are leading today, we need to keep up with changes in care, research, science and regulation.
- We need to address multiple challenges and opportunities to remain ahead.

Desired Outcomes

- Take advantage of a unique opportunity: our strengths, our position in Silicon Valley, education, and fundamental and clinical efforts to challenge the future of biomedical research, education and patient care.
- Engage our diverse, rich, community in generating ideas, thereby generating enthusiasm, excitement about the future, and commitment.
- Come up with bold Ideas that allow us to take risks and make critical strategic investments.
UCSF 2.0 – The Concept
1000’s ideas → 3-4 big ideas for the next decade and beyond

Evolving a UCSF Enterprise for the future

UCSF2025 - the game
**UCSF2025: FAS Involvement**

- **FAS Ambassadors Outreach and Volunteers**
- **Top Game Participants:**
  - Team CPC
  - Team CLS
  - Team FASMission
  - Individuals across FAS
- **FAS Assistance with UCSF2025 Promotion**
  - ITS
  - Arts and Events
  - DMMS
  - CLS
  - Other?
- **Follow up on specific plays:**
  - Operational Ideas for “quick wins”- began discussion with Angela
  - TeamProcurement- engaging players and building relationships to move forward key ideas
A Multi-phased and Long Term Project

Phase 1: Online Foresight Event
- Official Project kickoff
- Develop video and GAME- UCSF2025
- Develop public messaging and game participation (leadership + ambassador meetings)
- Game event in September

Phase 2: Foresight Workshops
- Analysis of Game Results
- Idea Workshops
- Mature Ideas and begin funneling approach
- Input on key themes
- Develop graphic summaries

Phase 3: Visual Graphics & Map
- Idea “mapping”
- Refine content
- Produce print-ready and digital versions of idea maps that can then be used to create long term Vision

Phase 4: 2014
Further Idea Development and Definition of a few big ideas
The first Step: built enthusiasm, generated momentum, and seeded diverse ideas...

- 2,583 Registered Players
- 24,711 ideas Played
- Fastest game play and largest % participation per IFTF experience
- Top FAS Participants: TeamCPC, TeamCLS, Team FASMission

- First Step = success in getting engagement and building enthusiasm. One of the largest UCSF efforts to engage the whole community

- However, the success of the project overall will depend on engagement of the community to help flesh out ideas and take the ideas forward.
Initial Findings

Operational/Near Term Ideas

- Using gamification to enhance employee engagement
- Becoming a sustainable health campus – a demonstration site for best practices in care, diet, exercise, energy
  - Partnering with MUNI for transport
  - Promoting wellness: e.g. incentives for gym memberships
- Healthy food options only

Big Long Term Ideas

In process, but general themes relate to:

- New funding models
- New models for education and partnership with other entities and campuses
- UCSF’s place in Silicon Valley and the world
- Transforming Patient Care
What’s Next?

Phase 2:
- Distill ideas into key themes and categories
- Identify outlier participants and top contributors from the community
- Continue to use ambassadors and communication channels developed for the game to share the high level results
- Set up two rounds of workshops, beginning mid October:
  - Mature and develop ideas
  - Begin “funneling” process
  - Identification of idea champions to participate in taking ideas forward

Phase 3:
- Analyze results from workshops and develop a “map” or forecast for the Future

2014 and Beyond:
- Ideas to be further discussed at key venues: SoM Retreat, Leadership Council, CEC, Deans and Chairs Meetings, Senate, RAB…
- Integration with UCSFCE Strategy, UDAR Campaign and School Strategic Planning Efforts
- Idea champions to work on specific ideas/plans
Other High Impact Initiatives

- Continued support for recruitment through the mid-career faculty recruitment program
- Increased bridge funding support for all schools
- Major fundraising efforts from recruitment, retention and building a future for an institution with limited state support of faculty salaries

- Funds to support educational programs focusing on innovative interdisciplinary programs
- Coursera programs, Master’s in Health Policy and Law
- Appt. Liz Watkins as VPSAA along with her role as Dean Graduate Division
- Major Fundraising efforts for graduate education
- Open Access Policy to journal articles
- Invested in significant classroom infrastructural and student health services improvements
Ongoing EVCP Initiatives

- New models - Increase license and research alliance agreements, support the transfer of UCSF technologies to industry; co-development of technology with industry scientists (e.g. MedImmune); UCSF Entrepreneur Programs
- Programmatic research public private partnerships (e.g. Onyx Oncology Innovation Alliance, CTI and Sanofi)
- Increased efforts through the Catalyst program (CTSI) and creation of an investment fund
- Support continued QB3 efforts to create newCos and build an increasing innovation center in Bay Area

- Investment in Enhanced Core Technologies
- Building a clinical research infrastructure (OnCor, EDW, BioBank, iMedris)
- Interdisciplinary, innovative new programs (including the partnership with UC Hastings, developing collaborations with UCB and LBNL)
- Investment in International Collaborations – PUMCH, International Scholars Office
**Ongoing EVCP Initiatives**

- (with SOM and CTSI) – SEP, San Francisco Health Improvement Program (SF HIP), and UCP as major resources for developing and supporting collaborative projects that improve health and education in SF

- Center for Health Care Value (through CTSI)- developing innovative solutions to help drive down costs and improve quality, working with stakeholders across and outside UCSF

- Multiple enhancements to increase faculty productivity: RAP process, grants and contracts support, clinical trials information and support
- Streamlining of compliance and training requirements
- Investment in data analytics and warehousing in support of our patient care and precision medicine mission and goals
Creating value, efficiency and effectiveness for the UCSF faculty community

A series of task forces and committees to address institutional efficiencies and effectiveness, working with FAS

- Campus-wide committee for space utilization
- Task force on IDC waivers
- IT infrastructure investment committee – 10 year plan
- UCSF core technology infrastructure committee – 10 year plan