Outline

• Background – Corporate funding
• Corporate Motivations wrt Academia
• People & Processes
• Finding Information
• USC Resources Available
• Developing Connections / Proposals
USC Resources Available

- Vice Provost Office for Research Advancement
- Schools – Associate Deans for Research & Directors of Corporate Advancement
- Libraries – Dedicated Researchers/COS
- USC Stevens Institute for Innovation – Technology Licensing
- Office of Contract & Grants
Research On The Cutting Edge

The University of Southern California is one of a small number of premier research institutions on which the nation depends for a steady stream of new knowledge, art and technology. USC receives over $430 million per year in sponsored research funding. We rank 17th among all American universities in federal research support. Read More

Research News

Jump-Starting New Directions in Research
Twenty-two faculty teams are awarded Zumberge interdisciplinary grants. Read More

USC to Host Body Computing Conference
The event brings biotech industry leaders together to discuss the future of patient management. Read More

Extinction Theory Falls From Favor
The Great Dying 250 million years ago happened

Experts Directory
USC faculty experts are available to talk with members of the news media on a variety of topics. Visit the Experts Directory

Resources for Grant Seekers
The Office of Research Advancement offers help for investigators who are seeking funding and applying to sponsored research competitions.

Funding Strategies
Proposal Development
Grant Opportunities
Find Federal Funding
Internal Awards
Grantwriting Guides

Department of Contracts & Grants
Visit Site

Search USC Research
Go

Full USC Search

Featured Research Initiative
Neuroscience
The Neuroscience Initiative integrates multiple disciplines to better understand how neurons interact to produce functions such as action, learning, emotions, memory, and perception. Visit Site

View All Of The Provost’s Research Initiatives

From, http://www.usc.edu/research
About Us

The University of Southern California is one of a small number of premier research institutions on which the nation depends for a steady stream of new knowledge, art and technology. USC receives over $430 million per year in sponsored research funding. We rank 17th among all American universities, and ninth among private American universities, in federal research support.

USC is rapidly expanding its research activity through a strategy that emphasizes collaboration across multiple disciplines and meeting societal needs, such as:

- Preventing, detecting and curing diseases prior to causing human harm.
- Capturing and distributing energy supplies that are environmentally benign, economical and long-lasting.
- Securing the nation and the world against the risk of both natural disasters and intentional acts of terrorism.
- Enhancing cross-cultural understanding and cooperation through communication among civic, religious, ethnic, and community institutions.
- Creating the means to educate both our children and adults for a deeper understanding of science and math, languages and cultures, leadership, and justice.

Students at all levels are provided opportunities to participate in research projects and other creative endeavors, and to interact with a faculty that is distinguished for the impact of its research.

The University of Southern California has also established the USC Stevens Institute for Innovation to support our students and faculty in the translation of inventions and discoveries into practice, so that we are not only at the forefront of creative research, we are also making a meaningful difference in the health and welfare of society. Through this strategy and others, USC has become one of the most influential and productive research universities in the world.

Last updated: Thursday, October 18, 2007, 7:29pm PDT
Office of the Vice Provost for Research Advancement

The Office of Research Advancement is implementing the University of Southern California’s strategic plan by building inter-disciplinary research collaborations that address societal needs and by increasing the impact and prominence of our research. The office invests in research initiatives, promotes our research among sponsors, and provides services that ensure that USC achieves the highest ethical standards in its research.

The office is the university point of contact for these issues:

- Identifying sources of research funding, both inside and outside the university.
- Participation in, and initiation of, major inter-disciplinary university research programs and formation of research units.
- Education to prepare investigators for funding strategies and proposal preparation.
- Clearance for research competitions that limit the number of proposals submitted by the University.
- Financial disclosures or conflict of interest statements.
- Complaints pertaining to research misconduct.

These units also fall under the Office of Research Advancement:

Washington, DC Research Advancement Office
Focused on relations with sponsoring federal agencies and foundations located in the Washington region. Learn More

Institutional Review Boards
Assurance that human subjects are protected through review, oversight and education. Visit Site

Department of Animal Resources
Provision and assurance of appropriate care in all aspects of animal research. Visit Site
“(the DC office is) a unique enterprise in academics – we have not established it as an office to lobby Congress or to direct political action but, to offer leadership from people who truly know the research and can speak on a peer-to-peer level to people who make funding decisions in the nation’s capital.”

Vice Provost, Randolph Hall, PhD

701 Pennsylvania Avenue, N W, Suite 540
Washington, DC 20004
To address critical societal needs, USC has developed a group of initiatives that build collaboration among students and faculty from all of our schools within major research projects. We invest in each initiative, to develop core laboratory facilities, hire exceptional new faculty, and start up new research and educational programs.

- Biomedical Nanoscience (BioNano)
- Biomedical Imaging (BISI)
- Clinical & Translational Sciences (CTSI)
- Energy Institute
- Health Collaborative
- Neuroscience
- Urban Issues
The first library at USC started during the first school year, 1880-1881

Schools

1. College of Letters, Arts and Sciences
2. Leventhal School of Accounting
3. School of Architecture
4. Marshall School of Business
5. School of Cinematic Arts
6. Annenberg School for Communication
7. School of Dentistry
8. Rossier School of Education
9. Viterbi School of Engineering
10. Roski School of Fine Arts
11. Davis School of Gerontology
12. Gould School of Law
13. Keck School of Medicine of USC
14. Thornton School of Music
15. School of Pharmacy
16. School of Social Work
17. School of Theatre
18. School of Policy, Planning, and Development
- Center for Advanced Transportation Technology
- Alfred Mann Institute for Biomedical Engineering (AMI)
- Astronautics and Space Technology Center
- Center for Robotics and Embedded Systems
- Biomedical Simulations Resource
- Center for Electron Microscopy and Microanalysis (CEMMA)
- Foundation for Cross-Connection Control and Hydraulic Research
- Center for Interactive Smart Oilfield Technologies
- Merwyn Gill Foundation Composites Center
- Keston Institute for Infrastructure
- METTRANS Transportation Center
- Microsatellite Systems Center
- Photonics Center

**Biomimetic MicroElectronic Systems (BMES)**
Initiatives / Schools Interaction

- Schools Offer Depth, Career Growth, Academic Programs
- Initiatives Offer Flexibility, Leverage of Resources, Dedicated Focus
- Corporate, Matrix-like, Interaction
- ‘General Manager’ Not Found at USC (However, Many Institutes Have Director Roles)
Interdisciplinary Work

Social and Behavioral Sciences

Communication and Information Sciences

Arts and Humanities

Life Sciences

Computational and Experimental Genomics, Center for
Dana & David Dornsife Cognitive Neuroscience Imaging Center
Musculoskeletal Biomechanics Research Laboratory
Neural Engineering, Center for
East Asian Studies
Sea Grant Program
Feminist Studies
Sustainable Cities, Center on
Law, Health and Society
Vision Science Center
Wrigley Institute for Environmental Studies
Literary, Visual and Material Culture, Center for
Modern Russian Culture, Institute of
Multilingual, Multicultural Research, Center for
ONE Institute and Archives
Norman Lear Center
Polish Music Center
Pacific Center for the Study of Philosophy and Religion
Religion and Civic Culture, Center for
Pacific Council on International Policy
West Semitic Research Project
Philanthropy and Public Policy, Center on
Public Diplomacy, Center for
Risk and Economic Analysis of Terrorism Events, Center for
Some USC Industry Consortia

- Engineering Resource Center (ERC) (NSF sponsored)
  - Biomimetic MicroElectronic System (BMES)
  - IMSC – Integrated Media Science Center
- CTM – Telecommunications / Mobile Devices
- HRA – Health Research Associates
- METTRANS – LA Transportation
- ETC – Entertainment Technology Center (Digital Cinema)
Southern California:
• GNP equivalent: 10th largest economy in the world
• Largest container port in the country: Los Angeles/Long Beach port trade in 2004 was $240 billion
• LAX is 3rd largest airport in US (largest for originating traffic)

"The transportation world has changed dramatically... (METRANS is) reinventing so that the workforce we are training will have a broader spectrum of abilities and become more capable of dealing with the world and the new technologies now."

USC Professor Genevieve Giuliano
• Engineering Research Center (ERC) to advance research, education and commercialization of biomedical devices to dramatically improve quality of life for patients with debilitating diseases.

• Started with $17M grant by the National Science Foundation with goal of self-sufficiency within 10 years

• Active involvement by leading medical device companies in testbeds of research in neural prostheses, opthamology and musculoskeletal function
Corporate Research Advancement Working Group

• 20-25 Members Across Campuses
• Promote Corporate Research
• Monthly Meetings to Strategize Opportunities
• Use Our Combined and Interdisciplinary Strengths
• Share Best Practices

Distribution of Awards From Funding Sources to USC Academic Revenue Centers - FY2008

<table>
<thead>
<tr>
<th>Funding Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sponsored Projects by Funding Source</td>
<td>$484.6</td>
</tr>
<tr>
<td>Health &amp; Human Services</td>
<td>$189.3</td>
</tr>
<tr>
<td>Department of Defense</td>
<td>$67.4</td>
</tr>
<tr>
<td>National Science Foundation</td>
<td>$35.1</td>
</tr>
<tr>
<td>All Other Federal</td>
<td>$30.0</td>
</tr>
<tr>
<td>Foundations and Associations</td>
<td>$43.9</td>
</tr>
<tr>
<td>Universities</td>
<td>$31.2</td>
</tr>
<tr>
<td>Corporations</td>
<td>$40.6</td>
</tr>
<tr>
<td>All Others(State and Local Governments, Hospitals, etc)</td>
<td>$47.1</td>
</tr>
</tbody>
</table>

Department of Contract and Grants
Corporate Research Advancement

Welcome To NETSource@USC
Selected Sites for Prospect Research on the Web
Brought to you by the USC Development Research Department

INDEX AND DESCRIPTIONS:

BASIC RESEARCH WEBLOGROPHIES

Starter sites:
A. Corporation
B. Foundation
C. Individual

And Now for the Rest of the World:

Corporations – $28.2 M for the Fiscal Year 2006

Distribution of Awards From Funding Sources to USC Academic Revenue Centers - FY2006
Outline

• Background – Corporate funding
• Corporate Motivations wrt Academia
• People & Processes
• Finding Information
• USC Resources Available
• Developing Connections / Proposals
USC's university-wide faculty research grant support mechanism.

The Zumberge Fund promotes the initiation of research at USC through two types of awards: Individual Awards and Interdisciplinary Awards.

• Individual awards help newer faculty launch their research careers, and support research in areas with limited external funding opportunities. (up to $25k)

• Interdisciplinary awards foster collaborative efforts among faculty from different schools and disciplines that lead to sustained interdisciplinary research programs and projects (up to $50k)
USC Resources Available

• Vice Provost Office for Research Advancement
• Schools – Associate Deans for Research & Directors of Corporate Advancement
• Libraries – Dedicated Researchers
• Stevens Institute – Technology Licensing
• Office of Contract & Grants
USC Stevens was created with $22M gift from Mark Stevens, USC alumnus / trustee, and partner at Sequoia Capital venture capital, and his wife, Mary.

“I think one of the key changes for universities in the 21st century is going to be interdisciplinary study, being able to cross-pollinate, cross-fertilize ideas from different parts of a university campus,” Mark A. Stevens.

Krisztina Holly, Vice Provost and Executive Director
- MIT - BS & MS in mechanical engineering
- Serial entrepreneur – Two companies started (s/w & robotics)
- Former executive director of MIT’s Deshpande Center for Technological Innovation (47 projects started)
"We want to help get everyone excited about technology and innovations happening in the university and also teach people how to commercialize with educational programs…

"What's really interesting is that no other university has such an integrated approach to the licensing function - protecting innovations and mentoring faculty and students that want to get started."

Krisztina Holly, Vice Provost and Executive Director
# Medical Devices

<table>
<thead>
<tr>
<th>FILE #</th>
<th>TITLE</th>
<th>INVENTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3796</td>
<td><strong>NEW!</strong> Development of a Real-Time Ultrasound Digital Beamformer Using Field Programmable Gate Array (FPGA) for High Frequency Linear Array Transducers</td>
<td>C.-H. Hu, K. K. Shung</td>
</tr>
<tr>
<td>3739</td>
<td><strong>NEW!</strong> Needle-Free Drug Delivery Based on Ultrasonic Microejector</td>
<td>E. S. Kim, H. Yu</td>
</tr>
<tr>
<td>3726</td>
<td><strong>NEW!</strong> A Device for Vessel Localization</td>
<td>D. T. Raphael, C. Yang</td>
</tr>
<tr>
<td>3723</td>
<td><strong>NEW!</strong> Transcutaneous RF-Powered Implantable Minipump</td>
<td>D. P. Holschneider, J.-M. I. Maarek</td>
</tr>
<tr>
<td>3634</td>
<td><strong>NEW!</strong> Nanosecond Pulse Generator for Cell Electro-manipulation</td>
<td>M. Gundersen, A. Kuthi</td>
</tr>
</tbody>
</table>
1. Turbo Negotiator
2. Agreements Negotiation Workshop
3. Corporate RFP’s
4. Niche Agreements
5. Non-traditional Partnering Strategies
6. Industry Survey
   Produce an annual report describing the level and type of investment being made by industrial groups/segments in university research.
7. Export Control
8. Local Workshops
The Partnership Continuum

Levels of Engagement Activities

- Awareness
  - Career Fairs
  - Interviews
  - EDU Account

- Involvement
  - Industry Affiliates/Advisory Program
  - Research Grants
  - Internship/Co-op
  - Software Grants

- Support
  - Student Consultant
  - Hardware Grants
  - Curriculum Dev/ABET Support & Fundraising
  - Workshops/Seminars
  - Support Contract
  - Student Organizations Sponsorships
  - Philanthropic Support
  - Guest Speaking/Lectures

- Sponsorship
  - University Initiative Sponsorship
  - Undergraduate Research Program Support
  - Graduate Fellowships
  - Collaborative Research Program Report
  - Outreach Programs
  - Support for Proposals for Education (NSF, NASA, etc.)
  - BETA Programs

- Strategic Partner
  - Executive Sponsorship
  - Joint Partnership
  - State Education Lobbying
  - Major Gifts
  - Business Development

KEY
1. Recruiting
2. Education Sales
3. UR Account Managers
4. UR Programs
5. UR Research
6. Other (Philanthropy, Alumni, Executive)

Traditional Engagement

Holistic Engagement
2009 NACRO Conference
August 13-14, Seattle, WA

The NACRO conference program planning committee is looking forward to NACRO’s annual conference on August 13-14, 2009.

**Why You Should Attend**

In an effort to help you secure permission for travel, The marketing committee has created a document for you to share with your institutional leadership that details the importance of the annual conference. It might be a valuable tool in your request to attend!

**Schedule**
Welcome

The Southern California Biomedical Council (SoCalBio or SCBC) is the trade association of the life-science industry in Greater Los Angeles. The mission of SoCalBio is to represent and promote medical device and biotechnology industry in Los Angeles and Orange Counties as well as adjacent communities in the Inland Empire and Gold Coast.

Register Now

11th Annual SoCalBio Investor and Partnership Conference™
September 17, 2009
Loews Santa Monica Beach Hotel
Bioscience Industry Veteran Francois Nader Will

Join Our Mailing List
Email: [Input]
Go

Recommended

BIOENGINEERED
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Typical Corporate Org Chart

Corporate Staff

Division / Product  Corp R&D  Gov’t Relations

Sales  Marketing  Academic Accts  Product R&D

Regional Sales  Regional Sales

Local Sales  Local Sales

Many potential touchpoints: Each has different needs from University relationship
What does Business Need from a Research University?
Industry’s Perspective

In order of importance, according 200 MN companies (small, medium, and large)*:
1. Recruiting talented and prepared students and graduates
2. Continuing education opportunities to enhance employees
3. Discovering expertise of research centers, institutes, and programs
4. Forming consulting relationships with faculty experts
5. Sponsoring research and initiatives
6. Licensing intellectual property (IP)

A Functional Definition of “Open”

From “The Era of Open Innovation” by Prof Henry W. Chesbrough:
[MIT Sloan Management Review, Spring 2003]

Contrasting Principles of Closed and Open Innovation

<table>
<thead>
<tr>
<th>Closed Innovation Principles</th>
<th>Open Innovation Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>The smart people in our field work for us.</td>
<td>Not all of the smart people work for us* so we must find and tap into the knowledge and expertise of bright individuals outside our company.</td>
</tr>
<tr>
<td>To profit from R&amp;D, we must discover, develop and ship it ourselves.</td>
<td>External R&amp;D can create significant value; internal R&amp;D is needed to claim some portion of that value.</td>
</tr>
<tr>
<td>If we discover it ourselves, we will get it to market first.</td>
<td>We don’t have to originate the research in order to profit from it.</td>
</tr>
<tr>
<td>If we are the first to commercialize an innovation, we will win.</td>
<td>Building a better business model is better than getting to market first.</td>
</tr>
<tr>
<td>If we create the most and best ideas in the industry, we will win.</td>
<td>If we make the best use of internal and external ideas, we will win.</td>
</tr>
<tr>
<td>We should control our intellectual property (IP) so that our competitors don’t profit from our ideas.</td>
<td>We should profit from others’ use of our IP, and we should buy others’ IP whenever it advances our own business model.</td>
</tr>
</tbody>
</table>
University Program Components

- Recruiting
- Licensing
- Corporate Citizenship
- Research
- Professional Connections
Key Success Factor – Internal Champions

- Leverage K-C scientists for active involvement, which may include:
  - Ensuring K-C participation in key review and consortia meetings
  - Encouraging active K-C / university collaborations
  - Leveraging in-house R&D
  - Sending K-C scientists to work in university labs, plus joint publications
  - Harvesting / integrating results at project completion

Motivates, exposes our R&D to new ideas
Collaborative Research Initiatives

Improving university-industry research collaborations

Overview

IBM has a strong tradition of research collaboration with our colleagues in academia. The goal of IBM’s Collaborative Research Initiatives is to expedite these collaborations by diminishing barriers and reducing complexities caused by the implications of intellectual property ownership.

Making collaboration easier

Intellectual property trends indicate a need for different approaches and practices in information technology (IT) research collaboration between universities and industry.

To address these trends, IBM and the Ewing Marion Kauffman Foundation sponsored a University and Industry Innovation Summit that was attended by leaders from IT companies, universities and government agencies, who continue to work together.
The University - IT Industry Collaborative Research Spectrum — since that ‘one size fit’ flatters no one, a portfolio of solutions must be continually navigated.

- Philanthropy:
  - Awards
  - Gifts
  - Grants

- Open:
  - Fee Free
  - Community Prepared
  - Publicly Shared

- Free Participant Use:
  - Access to non-participants
  - Informed Disclosure
  - Publicly Shared

- Joint Ownership:
  - Jointly owned IP and patents

- Sponsored Private Research:
  - Directed research
  - Private research

For any partnership to succeed, there must be equal value to the other partner. Effort in the earliest phases should go to understanding what benefits a potential partner is pursuing.

- Access to subject matter experts / Knowledge sharing
- Gains access to novel technologies development
- Enhances product pipeline
- Shortens market / product discovery time
- Enhanced R&D economies of scale

http://www.pharmexec.com/pharmexec/article/articleDetail.jsp?id=197777
Creating Proposals

From Pugh, *Powerful Proposals*

1. Don’t just answer questions – tell a story.
   
   *Build trust and confidence, create a positive impression and sets stage for your proposal*

2. Give your advocates enough to sell your position
   
   *Define problem, benefits and make decision easy*

3. Should not require re-working or re-packaging
   
   *Impress with your ability to communicate*

In competitive situation, early phase of evaluation is more to eliminate poor proposals than to select ideal proposal
1. Why us?
   Key positive differentiators, consistent w/overall impression of ideas, competence, goals

2. Why not them?
   Know competitive strengths, weaknesses and intelligently make evaluators aware of them (with integrity)

3. So what?
   Funders want benefits. What does this do for them?

4. How so?
   Define process for getting results, describe competence – ensure buy-in at the beginning of relationship

From Pugh, *Powerful Proposals*
Building Your Value Proposition

1. Existing and new unique IP
2. Expertise of faculty
3. Facilities at USC - *UPC, HSC, Catalina, DC*
4. Access to patients, markets, suppliers, regulatory agencies, global
5. Multi-party partnerships
6. Leverage existing resources at USC
7. Training – Existing / New employees
8. Recruitment - USC graduates
9. Name recognition of USC brand
10. ‘Trojan Nation’ - Network of alums, parents, friends of USC
LA is Global

Gross Product of Countries (GDP) and Metro Areas (GMP)

United States - 11734.3
Japan - 4587.3
LA Area - $582 B GMP - Tied with Russian GDP
More than Saudi Arabia, Ireland, Hong Kong combined

US (total) - 11734.3
Japan - 4587.3
Benefits to Industry

- World Class Researchers – Engineering, Education, Business, Pharmacy, Medicine, Dental, Communications and More
- Intellectual Property – Wide Portfolio
- Facilities / Equipment – Grants & USC have Supported Base Costs of Equipment
- Global Reach – USC has Global Reputation
- Students (Future Employees) / Training
How to Work with Industry

• Develop Network of Contacts / Communication
• Identify Opportunity (*What is Unique? What is USC’s Expertise? What is the Potential Market?*)
• Involve USC Intellectual Property Team
• Build Industrial Liaison Team (Department, School, Provost Office, Stevens)
• Leverage USC Strengths (*Address Weaknesses*)
• Develop Proposal ………….. and Execute
Thanks