UC Policy on Organized Research Units

• DEFINITION. An organized research unit shall consist of an interdepartmental group of faculty members and students on a single campus … engaged in research.

• PURPOSE. ORU’s may be established … to strengthen inter-disciplinary programs of research and teaching conducted by the faculty, as well as to provide graduate and post-doctoral students with added research opportunities, facilities, and assistance.

• SCOPE. An ORU shall be interdisciplinary in scope, involving the faculty and students of two or more departments of instruction and research. … An ORU is expected to provide opportunities for the participation of students in its activities.

• FUNDING. The activities of an ORU may be funded by budgetary allocations, or from extramurally funds sought for the purpose, or both. The Regents appreciate the importance of extramurally funded research in graduate education and recognize the desirability of providing University support from State funds of at least the cost of administering research programs.

• FACULTY PARTICIPATION. Organized research units shall receive no budgeted provision for faculty positions and shall confer no professorial titles.

• REALITY: ORUs operate differently on the different UC campuses.

http://regents.universityofcalifornia.edu/governance/policies/2307.html
What is the Earth Research Institute?

ERI’s Mission statement:

Supporting research & education in the sciences of our solid, fluid, and living Earth.

ERI’s Functions:

• Administer extramural research & manage Centers
• Home department for (soft-money) Researchers
• Provide Office & limited laboratory space
• Shared computing facilities & IT support
• Foster collaborations (weekly brown bags, etc.)
• Support Students – e.g. graduate student summer fellowship or travel grants
By the Numbers…

Over the review period (2009-2014)…

- 136 Active PI’s (presently 79 lead-PI’s & co-PI’s)
- 44 Researchers on soft-money (presently 25)
- 170 Graduate Students
- 374 Undergraduate Student Participants (21 admin)
- 137 Research Staff
- 8 Admin Staff (6.19 base-budget FTE)
- 3 IT Staff (1.95 FTE State supported)
- $10.8M / y in new grants & $2.5M / y in OH production
- $730K / y Base Budget & OH return
- 12,650 asf Ellison & Girvetz; 5,400 asf Harder-CCBER
- 291 computers managed & >1 PByte of spinning disk
ERI History

- ERI was formed in July 2010 merging ICESS & ICS
  *Bleak fiscal times, both were understaffed, underfunded, etc.*

- Scientific themes led to merge
  *Committee cast new vision for ERI & wrote self-study*
  *Moved people into Ellison & field staging into Girvetz*
  *Consolidated admin & IT teams (& policies)*
  *Spent a good year working through the changes…*

- Last ICS 5-year review was in 1998 & ICESS in 1999

- Administration of CCBER (Cheadle Center for Biodiversity and Ecological Restoration) *was deeded to ERI in 2011*
ERI History

• ERI was formed in July 2010 merging ICESS & ICS
  Bleak fiscal times, both were understaffed, underfunded, etc.

• PI Survey from May 2014  (44 responses; 54%)
  Q6: Considering the merge between ICS & ICESS, the
  results have been...
  Excellent (32%), Very Satisfactory (30%), No Basis (32%)

• Last ICS 5-year review was in 1998 & ICESS in 1999

• Administration of CCBER  (Cheadle Center for Biodiversity and
  Ecological Restoration) was deeded to ERI in 2011
ERI’s Mission Statement

“Supporting research and education in the sciences of our solid, fluid, and living Earth.”
ERI’s Mission Statement

“Supporting research and education in the sciences of our solid, fluid, and living Earth.”

Q1: Is ERI meeting its mission?

80% yes, completely  20% yes, somewhat

Q2: Is ERI’s mission statement clear & accurate?

84% clear & accurate
What Is ERI Academically?
What Is ERI Academically?

• Linking Earth system science with deep time
• Two-way understanding of impacts of environment on humankind & humankind on the environment
• Use of similar tools & data sets across all clusters
What Is ERI?
How Do the PI’s Make up ERI?

Sorted by PI interests

- Human Impacts: 33%
- Earth System Science: 30%
- Environmental Data: 5%
- Natural Hazards: 17%
- Earth Evolution: 15%
Home Departments of Lead-PIs
by PI count

- Earth Science
- Economics
- NCEAS
- KITP
- Geography
- CCBER
- Bren
- Chemistry & Biochemistry
- Materials
- Physics
- Environmental Studies
- MSI
- Computer Science
- Anthropology
- Library
- EEMB
Q3: Have you experienced new interdepartmental research collaborations through ERI?

57% yes  43% no
UC Center for Environmental Implications of Nanotechnology

MISSION:
The mission of the University California Center for Environmental Implications of Nanotechnology (UC CEIN) is to use a multidisciplinary approach towards research, knowledge acquisition, education and outreach to ensure the safe implementation of nanotechnology in the environment. This will allow the U.S. and International Communities to leverage nanotechnology to the benefit of the global economy, society and the environment.

Terrestrial  Freshwater  Marine

$48 Million Nanosafety Center
Vernon and Mary Cheadle Center for Biodiversity and Ecological Restoration

Collections Curated at CCBER
Zoological: 32K vertebrate & 15K invertebrate specimens
Botanical: >250K taxa of terrestrial & marine species
Paleontological: ~10K specimens

Natural Lands Management
Management & restoration of campus natural areas
Education through courses, seminars, and volunteer opportunities

K-12 Outreach: “Kids in Nature” (KIN)
>2400 5th graders participated since 2001
>270 UG’s participated as KIN instructors since 2008
KIN Students scored considerably better on standardized science tests (75% score advanced or proficient compared with 27% for their control group)

KIN makes a difference!

Endowment: In 2014, Dr. William and Mary Cheadle provided an endowment gift of $1.6M
ERI Facilities

Facilities
- 6th floor & 1611 Ellison (offices, seminar rooms) : ~8154 ASF
- Girvetz: (ground staging space with lab sink) ~4493 ASF
- Harder (CCBER): ~5395 ASF with identified shortfalls

Challenges
- Lack of laboratory spaces for ERI researchers
- Soft-money researchers often must partner with a ladder-rank faculty member to gain access to laboratories.
- Ladder-rank faculty managing their grants through ERI have labspace provided by their home departments.
- Several participating academic departments do not have proper spaces for many of their faculty members.
ERI Facilities

Q24: If your office is on the 6th floor of Ellison, how satisfied are you with the quality of the space?
16% Extremely, 18% Very, 66% N/A

Survey Responses:
• I would love to have all of my stuff in one set of labs instead of in 5 buildings across campus
• At present I have no experimental space with which to develop initial data sets for proposal submission
• Research space is too small
• Identify some incubator research space and equip it with some basics for use by new investigators (wet laboratories/hoods)
• Several participating academic departments do not have proper spaces for many of their faculty members.
ERI Admin

ERI provides proposal preparation & award administration, financial accounting, personnel, purchasing, travel, etc.

**ERI staff facilitate the administrative functions of grants, freeing our Participants to spend time on research as opposed to paperwork.**
ERI Admin

Q5: In thinking about your recent admin experiences with ERI, was the quality of service you received:

72.7% Excellent  27.3% Very Satisfactory

Comments:

• I feel very fortunate to be based at ERI. Staff and services are first-rate.
• ERI services are outstanding. Communication is fast and problems are solved timely.
• I used to run proposals through [redacted]. I switched and haven't switched back. 'Nuff said.
• ERI is professional and competent. Bottle it and sell it: you'd all be rich.

opposed to paperwork.
IT Support & Infrastructure

The ERI IT mission is to provide an innovative and robust computational environment that facilitates research, fosters collaboration among research groups, and assists in the technical training of students.

ERI supports (approximately):
• 117 UNIX systems (CentOS, Solaris, Ubuntu, FreeBSD, ...) including 52 virtual machines
• 120 Macs & 50 Windows PCs
• 4 Windows Servers
• 23 managed network switches
• 8 networked printers
• 2 "Fat-Node" SMP HPC systems totaling 80 cores.
• 1.06 Pb of disk storage
• 130 Websites
• >93 databases (mysql + sqlite)
• Conference Facilities - 2 projectors, HDMI displays, teleconferencing, etc.
The ERI IT mission is to provide an innovative and robust computational environment that facilitates research.

Q16 & 17: In thinking about your IT recent experiences with ERI, was the quality of service you received:

- 67.8% Excellent
- 27.1% Very Satisfactory
- 3.4% About Average
- 1.7% Somewhat Unsatisfactory (1 of 59)

Comments:

- Again, I think things have never been better. Information technology infrastructure of ERI is great and service is fantastic.
- The computing team rocks, we're very lucky to have them.
- They all respond quickly to my questions. However, the recharge system has led my students to seek solutions where these individuals could assist, but are not asked.
- I interact with the compute teams in multiple departments/units, and ERI's is by far the most responsive. Great can-do, no-BS attitude.

HDMI displays, teleconferencing, etc.
New Awards, Donations & Recharges

ICESS & ICS

ERI

Recharges
Donations
ARRA
$ New Awards
Where do the awards come from?

Of the federal, 60% NSF, 32% NASA, 8% other

Weighted by the dollar value of active awards in review period
ERI Funding Self-Assessment

- Award levels are lower than historic trend lines due to both federal & institutional issues
- Fewer / smaller federal funding opportunities
  
  Conclusion: Need alternative(s) to federal sources
  Conclusion: Must help soft-money Researchers
- There are simply fewer PI’s
  
  From 2009, we gained 19 lead-PI’s; but lost 32 and we expect at least 15 lead-PI’s to retire shortly
  
  Conclusion: Need to recruit ERI-focused faculty

  External search for new ERI Director is good, but…
Challenges going forward…

- Impacts of changes in federal funding levels
  Make ERI less “federal”

- Faculty recruitment
  Replacements are not keeping pace with retirements
  ERI should help coordinate requests across departments

- Need to protect soft-money Researchers
  Bridge funding accounts sourced from OH generated

- Increase collaborations across groups
  Help foster large, multi-group proposals (Centers, etc.)
  Implement an ERI data collaboratory

- Inadequate lab facilities for many PI’s
  Need autonomous space for ERI Researchers
  Shared space between Geog, Earth Science & Bren?

- Impact of campus system changes on workload of PI’s
  Finding balance between PI workload and ERI resources

- Other challenges you’ve identified?