



Top Tier Research, Scholarship and Creative Activities
2015 – 2016 Updates

SUMMARY

Strategic Areas 1-1: Centers & Institutes

(Bo Bernhard, **Tim Porter**, Alfredo Fernandez Gonzalez, Academic Health Center Rep, Brian Hedlund, Connie Mobley, Billy Bai, Jillian Inouye, John Mercer, Kwang Kim)

- The group has prepared a comprehensive reported based on peer analysis, visits to other campus (ASU and Houston), and internal discussions. **See attached summary report.**
- Recommendations include:
 1. As a component of the UNLV top-tier strategic plan, we propose the creation of a new class of “University Research and Innovation” Centers or Institutes that report directly to the office of the Vice President for Research and Economic Development.
 2. These new University Research and Innovation Centers or Institutes will be multi-college and multi-disciplinary, and will have “charters” that outline specific objectives and deliverables that align with long-term University objectives.
 3. New University Research and Innovation Centers or Institutes will be chartered for a specific period of time, and supported with appropriate and sufficient startup funds during the initial charter.
 4. University Research and Innovation Centers or Institutes will be reviewed periodically by the office of the Vice President for Research and Economic Development for timely execution of objectives, goals and deliverables.
 5. We recommend a parallel effort to incentivize and support other levels of Centers or Institutes that will operate under the existing NSHE definitions of Centers or Institutes and function within current reporting structures. These levels of Centers or Institutes will also align with University, College or Departmental strategic goals.
 6. Comprehensive business (long-term sustainability) plans should be developed as part of center/institute establishments.
 7. Space and other university directed resources should be considered as part of base support for the centers/institutes.



TOP TIER RSC WORKING GROUP REPORT

Submitted By:

| | |
|-----------------------------|------------|
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| Name | Department |
| Centers and Institutes | 1-1 |
| Name/Topic of Working Group | Goal # |

Working Group Members:

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2015-2016 Accomplishments:

1. Data gathering from peer top-tier institutions.
2. In-person meetings with Arizona State and University of Houston.
3. Recommendations for University-level Institutes.

Recommendations:

Summary Recommendation

1. As a component of the UNLV top-tier strategic plan, we propose the creation of a new class of "University Research and Innovation" Centers or Institutes that report directly to the office of the Vice President for Research and Economic Development.

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Guidelines and Principles

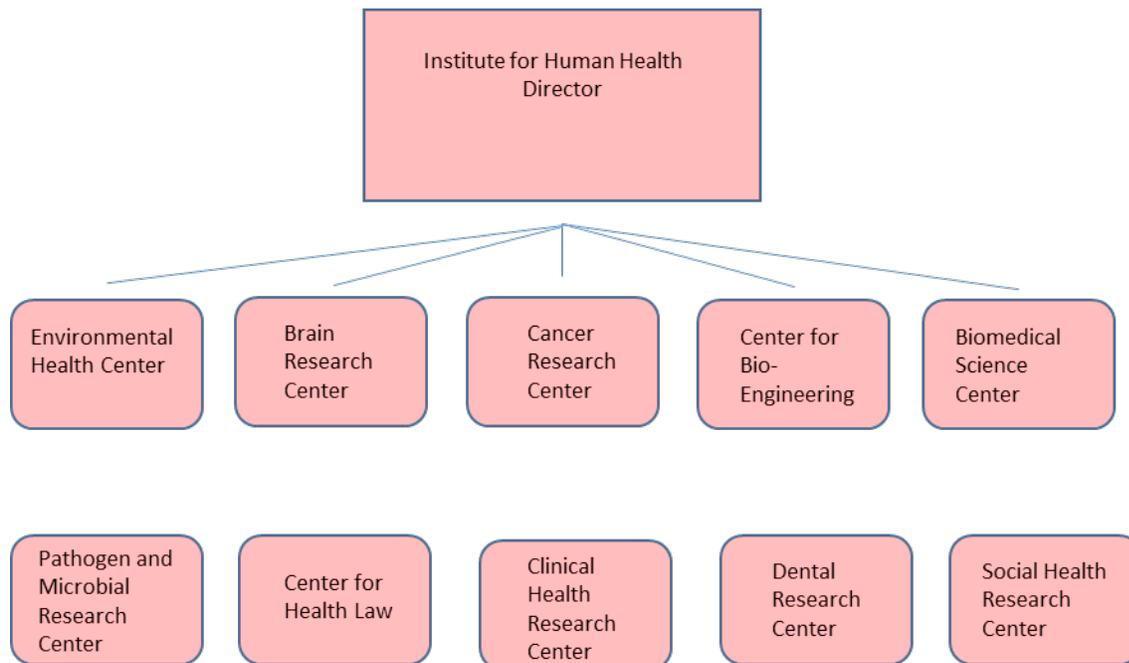
1. University-level Institutes will address issues of major significance to state, national and international priorities and needs.
2. University Institutes must significantly and directly impact the long-term University strategic goal of attaining top-tier status. For University-level Institutes, this must include the highest priority top-tier goals for the University.
3. University-level Institutes must be interdisciplinary and multi-college. Institute faculty academic appointments will generally remain within individual colleges, however, faculty will also be officially affiliated with the Institute.
4. UNLV will explore incentives for existing academic units to support hiring of Institute faculty.
5. To be considered for University-Level, an Institute must submit a viable business plan for development and growth. Institute proposals should demonstrate a strong financial impact, potentially including a self-sustaining model of operation.
6. University-level Institutes will report to the Office of the Vice President for Research and Economic Development.

Space Considerations

1. UNLV must be able to accommodate new or growing University Institutes for 5-6 years, in advance of new construction on campus. Individual College hiring will also need additional laboratory space on or near campus.
2. Identify campus “swing space” where less productive laboratories may be consolidated. Perform needed renovations or upgrades to bring lab swing space online.

3. Establish and fund campus laboratory space renovation “pipeline” – A prioritized, serial stream of new or existing, vacant spaces that may be upgraded into top-tier laboratory spaces. Perform major infrastructure upgrades (water, hoods, electrical, gasses, HVAC, counters, etc.), possibly leaving final design details to new faculty who will occupy space.
4. Establish means for efficient, low-cost, timely campus renovation effort for 5-6 year lab renovation plan. Do we have the infrastructure to renovate 5-6 labs per year for the next 5 years?
5. Consider percentage of new indirect money streams to support new building construction

Example Structure for University-Level Institute



Note: Center names are not actual suggestions. Institute Director would design Center structure with campus and leadership input.

Faculty Appointments in Institutes

Colleges, Schools and Departments may be wary of accepting new Institute faculty. Some potential procedures and incentives may help individual units during the search or hiring process.

1. Institutes work with individual units prior to and during searches. Individual units may ultimately run searches with Institute support and feedback.
2. Negotiate IDC returns with potential host dept. in advance. For example, a 51% appointment might result in an IDC return of approximately half of normal returns.
3. Negotiate course loads prior to search.

4. Outline space considerations in advance with potential home unit.

5. Institute and home unit agree on promotion and tenure terms.

Institute Directors

During in-person site visits to University of Houston (Vice Chancellor for Research and staff) and Arizona State University (Vice President Knowledge and Enterprise Development) it was emphasized that following the successful approval of a new “University-Level” Institute, a national search for a Director will follow.

It was strongly emphasized in both interviews that the selection of the Director was the single most important variable in the ultimate success or failure of these top level institutes.

Funding Opportunities for New Institutes

New National Institutes of Health (NIH) funding initiatives in 2016.

New priority study underway. Many new initiatives.

Brain Initiative. <http://www.nih.gov/news-events/news-releases/nih-approves-high-priority-research-within-brain-initiative>

Several Cancer Initiatives. <http://www.cancer.gov/research/key-initiatives>

National Science Foundation (NSF) funding priorities and initiatives.

Materials Genome Initiative. <https://www.whitehouse.gov/mgi>

Brain Initiative. http://www.nsf.gov/news/special_reports/brain/initiative/

Food, Energy and

Water. http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505241&org=NSF&from=fund

http://www.nsf.gov/news/priority_areas/

Department of Energy (DOE) and Department of Defense (DoD) funding initiatives.

<https://research.usc.edu/files/2011/05/Guide-to-FY2016-DOE-Research-Funding.pdf>

<https://www.whitehouse.gov/sites/default/files/omb/budget/fy2013/assets/energy.pdf>

Use interdisciplinary UNLV Institutes and Centers to leverage large programmatic grant opportunities from federal agencies.

Use large programmatic, infrastructure building grants (EPSCoR and others) to create or provide initial seed funding for new interdisciplinary Institutes or Centers.

Core business sectors in local/regional economies.

Various Foundations (Keck, Gates, others).

2016-2017 Goals (Where possible, specify who should be responsible for these next year):

Obtain feedback from VPR office and Top-Tier committees and personnel as to 2017 goals for this committee.

Notes, Comments, & Feedback:

Centers and Institutes

X. Bai, B. Bernhard, A. Gonzalez, B. Hedlund, J. Inouye, J. Mercer,
C. Mobley, T. Porter

And thank you to the following individuals for in-person meetings at their respective campuses:

Sethuraman "Panch" Panchanathan - Senior Vice President, Office of Knowledge Enterprise Development, Arizona State University

Mary Ann Ottinger (and staff) -Associate Vice Chancellor for Research, University of Houston

What role might centers and institutes play in a
University strategic plan for top-tier growth?

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Summary Recommendation

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5. University-level Institutes will report to the Office of the Vice President for Research and Economic Development.

Summary Recommendation - Space Considerations

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- Establish means for efficient, low-cost, timely campus renovation effort for 5-6 year lab renovation plan. Do we have the infrastructure to renovate 5-6 labs per year for the next 5 years?

Many Universities use Centers and Institutes as Vehicles for Expansion and Growth of Interdisciplinary Research

- University of Oregon
- Arizona State University
- University of Houston
- University of Central Florida

University of Oregon

- Student enrollment – 24,500 (20,829 undergrad, 3762 grad).
- Faculty – 1100.
- Research Expenditures – 110 – 120 million/year.
- Research Centers or Institutes – 56. <http://research.uoregon.edu/facilities/centers-institutes/other>. 21 of these are “University” level (VPR).
- 21 University-Level Centers and Institutes Percentage of UO Expenditures – over 50%. <http://research.uoregon.edu/facilities/centers-institutes>.
- University Centers and Institutes Report to VPR.
- Top 5 Centers or Institutes Account for 65% of C&I expenditures, with 14 C&I over 1 million per year in expenditures (2012).
- First major, multi-college Institute formed in 1979.
- UO has defined “University-Level” Institute or Center.

Oregon University Research and Innovation “Institute”

- Two or more Colleges, three or more departments.
- Substantial external funding (typically over \$2 million/year).
- Program autonomy, independent of Colleges or Departments.

Oregon University Research “Center”

- Interdisciplinary, but may be focused in single College.
- Report to either VPR (broad themes) or individual College (focused theme).

University of Houston

- Student enrollment – 41,000 (32,000 undergrad, 6200 grad, 3,000 other).
- Faculty – 979 ranked, 1300 unranked (lecturer, visiting, etc).
- Research Expenditures - \$100 million (2014).
- Research Centers and Institutes – 24 (see next page). Research Clusters – 6 (comprised of C&I, colleges and departments).
- Centers and Institutes percentage of UH expenditures – 50% (estimate by VC).

Houston University Centers or Institutes

- 5 University Centers or Institutes.
- Must have “significant” research funding.
- Minimum of two or more Colleges involved.

Houston College Centers or Institutes

- 19 College Centers or Institutes.
- Must have “significant” research funding.

Houston Centers or Institutes

- Up to 50 additional Centers.
- Academic in nature, less research funding.

Houston University Research Clusters

- The University of Houston's research clusters are multidisciplinary, challenge-based groups of investigators that include and draw on the strengths of existing research centers, institutes and laboratories within multiple academic departments and colleges.
- The university has adopted the concept of research clusters to take advantage of the interrelationship of research areas and capitalize on six areas in which the university and region have strategic advantages.
- Arts and Human Enrichment
- Bio-Med Sciences and Engineering
- Community Advancement and Education
- Complex Systems/Space Exploration
- Energy and Natural Resources
- Nano-Materials

Arizona State University

- Student Enrollment – 83,300 (67,500 undergrad, 15,500 grad).
- Faculty – 1832 (tenure track).
- Research Expenditures – \$450 million.
- Research Institutes – 14 (3 “Senior Admin-Level”, 11 “College” based).
- Centers – 133.

ASU Senior Administrative Institutes

- Flagship University Institutes.
- Composed of multiple Centers (Biodesign (14) and Sustainability (7)).
- Centers can “come and go” as Institute grows, shrinks, or changes.

ASU College Institutes and Centers

- May be interdisciplinary or college-centric.
- Some Institutes composed of multiple Centers.

University of Central Florida

- Student Enrollment – 60,821 (52,500 undergrad, 7,800 graduate).
- Total faculty – 1,961.
- Research Expenditures - \$145.6 million (2014).
- 36 Centers and Institutes.
- Top 6 Centers or Institutes - \$41.6 million in 2013.
- CREOL/FPCE (Optics)
- Institute for Simulation and Training
- Florida Solar Energy Center
- Burnett School of Biomedical Sciences
- Advanced Materials Processing and Analysis Center
- Nanoscience Technology Center
- Some Centers or Institutes have become academic units.

UCF Faculty Cluster Hiring

- “A new Faculty Cluster Initiative has been designed to leverage UCF’s existing strengths and foster the development of strong, interdisciplinary diverse teams focused on solving today’s most challenging scientific and societal problems.”
- Cyber Security and Privacy
- Energy Conversion and Propulsion
- Genomics and Bioinformatics
- Prosthetic Interfaces
- Renewable Energy Systems
- Sustainable Coastal Systems

Creation of New Institutes or Centers

- **Oregon** – “Proposals to create an Institute, Center or Facility should be submitted to office of Research, Innovation and Graduate Education (VPR) for review. Proposals for new Institutes and Centers must include a formal set of operating procedures and budget plan. Because Institute and Centers support intellectual interests of faculty that transcend a single department, college, or mission, ongoing discussion among faculty, department heads/Directors, and Deans is expected in developing the proposal to establish a new Institute or Center”. [http://research1.uoregon.edu/sites/default/files/FINAL%20APPROVED%20C%26I%20Definition%20Guidance%20-%20May%205%202014.pdf?__utma=1.1774234940.1450454708.1450454708.1450454708.1&__utmb=1.6.10.1450454708&__utmc=1&__utmz=1.1450454708.1.1.utmcsr=google|utmccn=\(organic\)|utmcmd=organic|utmctr=\(not%20provided\)&__utmv=-&__utmik=44243236](http://research1.uoregon.edu/sites/default/files/FINAL%20APPROVED%20C%26I%20Definition%20Guidance%20-%20May%205%202014.pdf?__utma=1.1774234940.1450454708.1450454708.1450454708.1&__utmb=1.6.10.1450454708&__utmc=1&__utmz=1.1450454708.1.1.utmcsr=google|utmccn=(organic)|utmcmd=organic|utmctr=(not%20provided)&__utmv=-&__utmik=44243236)
- **Houston** – “To establish a new unit, a group of faculty members should develop a proposal based upon a two to five year strategic plan. The proposal must be approved by the Department Chairs and/or Dean(s) of the department(s)/college(s) involved, and submitted to the Office of the Vice Chancellor/Vice President for Research. The VC/VP for Research will act on the proposal within three months. The VC/VP for Research may establish an ad hoc advisory committee as needed”. <http://www.uh.edu/research/about/centers-and-institutes/guidelines/>.
- **Central Florida** - “UCF has focused its technical development on key institutes and centers that align with the economic needs of the region and state. The president may establish university institutes and centers. The provost shall be responsible for assuring effective implementation of institute and center operations. A copy of an approved new university institute or center proposal containing basic descriptive, contact, and fiscal information shall be submitted to the Board of Governors Office of Academic and Student Affairs”. <http://www.research.ucf.edu/centers.html>.

- Arizona State University – “Once per year, the University Provost requires that each unit submit a list of proposed centers/institutes to be potentially launched in the following year. To that end, each fall the University Provost's Office will call for the submission of descriptions of potential new centers and institutes. The President and University Provost will review those submissions and will determine which centers will be reviewed. The University Provost's Office will notify the appropriate dean/vice-presidents that they may proceed to the center proposal development stage and begin the internal review process”. “Once the University Provost's Office notifies the dean or appropriate vice-presidential office that a proposed center/institute has received preliminary approvals, the unit may develop the full proposal which then must undergo internal review, including final review by the President and University Provost. The proposal requests for a complete description of the purpose, justification, resource streams and expenditures for the proposed new center or institute”. <http://centers.asu.edu/approval>. Note: ASU Senior Administrative Institutes have been formed by the President and Vice President in more of a “top down” process.
- UNLV – “The Council for Centers, Institutes, Museums, and Laboratories will review all the proposals for preparation of a subsequent recommendation to the Vice President for Research and Executive Vice President and Provost. The Council has the authority to recommend or disapprove proposals and may request changes and additions to any proposal”. <https://www.unlv.edu/research/centers>.
- Proposal----->Council ----->Vice President for Research----->Exec VP & Provost-----> NSHE Academic Affairs Council----->Board of Regents' Student and Academic Affairs Committee----> Action by Board of Regents.

Existing UNLV Guidelines for Centers or Institutes

- <https://www.unlv.edu/research/centers>
- Committee recommends follow-up committee to update UNLV policies on Centers and Institutes??????????????

University-Level Institute Directors

- In in-person site visits to University of Houston (Vice Chancellor for Research and staff) and Arizona State University (Vice President Knowledge and Enterprise Development) it was emphasized that following the successful approval of a new “University-Level” Institute, a national search for a Director will follow.

It was strongly emphasized in both interviews that the selection of the Director was the single most important variable in the ultimate success or failure of these top level institutes.

Incentives and Barriers to Institutes and Centers

- Colleges may view “University” Institutes (reporting to VPR) as net losses for their units. This may be in the form of loss of top faculty, loss of indirect cost returns, loss of direct control, and loss of visibility and prestige. ASU – “took 5-7 years for Colleges to become more comfortable with University-Level Institutes”.
- UNLV may consider having all academic degrees granted by academic Colleges or Schools in near future. Some exceptions may include certificates or other unique programs that might not overlap with any existing academic units.

Some Funding Opportunities for New Institutes or Centers

- New National Institutes of Health (NIH) funding initiatives in 2016.
 - New priority study underway. Many new initiatives.
 - Brain Initiative. <http://www.nih.gov/news-events/news-releases/nih-approves-high-priority-research-within-brain-initiative>
 - Several Cancer Initiatives. <http://www.cancer.gov/research/key-initiatives>
- National Science Foundation (NSF) funding priorities and initiatives.
 - Materials Genome Initiative. <https://www.whitehouse.gov/mgi>
 - Brain Initiative. http://www.nsf.gov/news/special_reports/brain/initiative/
 - Food, Energy and Water. http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505241&org=NSF&from=fund
 - http://www.nsf.gov/news/priority_areas/
- Department of Energy (DOE) and Department of Defense (DoD) funding initiatives.
 - <https://research.usc.edu/files/2011/05/Guide-to-FY2016-DOE-Research-Funding.pdf>
 - <https://www.whitehouse.gov/sites/default/files/omb/budget/fy2013/assets/energy.pdf>
- Use interdisciplinary UNLV Institutes and Centers to leverage large programmatic grant opportunities from federal agencies.
- Use large programmatic, infrastructure building grants (EPSCoR and others) to create or provide initial seed funding for new interdisciplinary Institutes or Centers.
- Core business sectors in local/regional economies.
- Various Foundations (Keck, Gates, others).

Future UNLV University-Level Institutes

Disclaimer: These Institutes were discussed and approved by the Colleges of Sciences and Engineering during the simultaneous strategic planning process undertaken by both colleges during fall semester 2015. Our committee has not viewed, discussed, or vetted any additional proposals from other units at UNLV as of this time.

- **Institute for Materials Science and Engineering.**
 - High funding area for NSF, DOE, DoD.
 - New Federal “Materials Science Genome” Initiative.
 - Existing faculty at UNLV.
- **Institute for Radiological Studies.**
 - Long history of DoE funding, NIH funding.
 - Three College (CoS, CoE, N&AH).
 - Strong local synergies.
- **Institute for Biomedical Science and Engineering.**
 - High funding area for NIH, NSF, DOE, DoD.
 - Leverage UNLV Medical School.
 - Large number of potential UNLV Colleges and Schools.

Proposals or plans for future University-Level Institutes may be expected to contain a roadmap for obtaining “startup” funds that may include sources such as the state, UNLV, grants, foundations or local business. In addition, initial space needs are expected to be addressed in any proposal.

Future UNLV College-Level Centers or Institutes

- Individual UNLV units propose/continue Centers or Institutes that generally remain under College or School administrative control.
- These Centers and Institutes may not necessarily be interdisciplinary between multiple Colleges or Schools, with indirect cost returns flowing primarily to a single UNLV unit.
- These College-Level Centers or Institutes may not generally receive large “start-up” funding packages from UNLV administration, relying instead on unit-level investment and fundraising to operate or begin operations.
- Designed to enhance visibility, funding, scholarship, creative activity, or other attributes of a single UNLV unit.
- May follow existing UNLV guidelines for Centers or Institutes.