

CALS Dean's Research Advisory Committee (DRAC) Spring 2012 General Summary and Recommendations

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The DRAC was first organized in the spring of 2012 with the goal of providing recommendations to **facilitate the ability of CALS to reach the UA's goal of doubling research and sponsored project activities by the year 2020**. The committee is comprised of faculty from a broad range of areas of CALS. This committee has identified 5 major topics in which CALS should focus to improve the ability to grow the research enterprise. These topics are outlined below and contain recommendations.

1. Communication on CALS research activities is in great need of expansion.

- **Outreach** should be a crucial means for building support for research mission / potential donor support: Build from the ideas of the Insect festival / family weekend; coordinated outreach through agriculture centers across the state. (e.g. UC Davis' Picnic Day)
- **Marketing and branding** need to be priorities for sharing our work and building support and capacity (Make Tucson Blue! The next step after being green is being blue: build on our clean air brand)

Recommendation 1: Develop a comprehensive branding and communication strategy for CALS that operationalizes comprehensive recommendations for promoting research, extension, and instruction. Strategies could include:

- a) Hold multiple communication events throughout the year and on a regular basis. These can include meet your neighbor (building-wide), TED talks, evening symposia (following the CoS model), online materials, brown bag lunches, etc. CALS members need to know each other. Create a high-profile meeting series around CALS activities with a clear expectation of wide attendance. [It is essential that administrators attend, push and encourage faculty and staff attendance.]
- b) Hire an individual to spend a nominal amount of time each week to collect and redistribute stories, activities, pictures, blogs, conferences, publications and other outputs of the college and our constituents and redistribute electronically. Maintain a constant presence on facebook, twitter, the CALS web site, UA News, and local, regional, and national publications.
- c) Develop a "Multidisciplinary Monday" program. Develop a series of meetings and social gatherings around big-picture research, education, and outreach activities. Explore different formats to see what works best. Include all segments of the land grant mission, potential industry partners, and students.

2. Defining and measuring productivity and resource generation for research

- Clearly we mean doubling extramurally funded research – but what else do we mean (more papers? More PhDs? More MSs? More undergraduates?)?
- Recognition that this would vary by unit / field: # of MS/PhDs; publications; extramural funds; IDC; faculty awards; % co-investigator / co-PI grant submissions; etc.
- Strategy: encourage unit-level discussions of strategies to double research productivity – both in funding and to identify other key metrics

Recommendation 2: Identify potential common themes across the college for quantification of productivity. Implement methods, set realistic goals, evaluate progress on a regular basis and adjust when necessary.

Recommendation 3: Survey CALS faculty and staff as to what they perceive to be barriers to increased productivity in research and sponsored projects. Pay attention to those results and implement new procedures as necessary.

Recommendation 4: Evaluate and assess the balance of fundamental and applied research across the college. Use these discussions as part of an approach to strengthen the connection between research and extension programs. Determine how we can best utilize our extension programs to improve research and for research to improve extension. Note that many large grant programs require such integration. Are we currently well positioned?

Recommendation 5: Through a process of stakeholder interaction, develop specific long-term goals for supporting and shaping the future of rural Arizona. Hold a series of mini-summits with stakeholders (Ag100 + other less formal groups); implement suggested actions.

Recommendation 6: Support academically relevant ROI studies to assess selected CALS program impact(s). Engage AREC faculty and if necessary Eller to study and make recommendations.

3. Identifying CALS Research infrastructure needs

Grants systems:

- Clear consensus that we need a better sponsored programs culture in the college (we need facilitation rather than regulation).
 - Remaining questions: Do we need the college-level system that we have at all? If we need it, should it focus on pre-award, post-award, or both?
- Also clear consensus that we have challenges at the university level - regulation and delay (rather than facilitation)
- Learning from other models: Example of the approach taken by Engineering is promising. We should lean/explore how our peer institutions run the grant enterprise (e.g. Texas A&M Research Foundation, others)
- Develop better business function coordination across units

Physical infrastructure

- College space and facilities are highly variable with some being state of the art and others in need of refurbishing and update of equipment, building, and systems. Consider how space is allocated and whether greater sharing of space would be productive. We need to seek funds to refurbish existing space.

Human capital

- Many CALS programs are having difficulty attracting the best and brightest new graduate students, especially U.S. citizens. A strategy needs to be developed in how to invest funds to recruit students in a manner that will be competitive with peers across the U.S. Some competing programs across the U.S. are able to guarantee 5 years of support for each graduate student, while many CALS programs struggle to guarantee 1 year for more than a handful of students.

Other systems:

- Clear consensus that we could improve our reporting systems – APROL; AES / CHRIS; reporting time and time approval – we could improve / streamline / eliminate them for the user – but also make the information useful and accessible for planning and analysis

Issues:

- Rate of return of indirect costs acquired from grants to the college is a major problem at the level of the VP for Research. Is IDC being used campus-wide to cover the indirect cost of completing the projects which earned the IDC?

Recommendation 7: Regarding CALS-level grants management, build college-level capacity to facilitate pre-award processes – manage all pre-award at college level (rather than unit) for “one stop” between the investigator and SPS. In creating such capacity emphasize the development of interactions and relationships with grants personnel from other colleges. Build central expertise for grant forms, budgets, and online submission processes.

Recommendation 8: Retain post-award management at the departmental level, but support capacity building and expertise for business office staff to collaborate and build a culture of facilitation rather than regulation.

Recommendation 9: Advocate for UA-wide improvements and accountability in SPS and ORCA

Recommendation 10: Review the process of collecting and distributing notices on new Requests for Funding (current personnel set to retire in summer 2012). Conduct a survey of faculty to assess use and relevance of the service; consider feasibility of management by student worker, or possibility of replacing function through training faculty to use online funding alert databases.

Recommendation 11: Review needs and functionality of forms and procedures related to: APROL; AES Project Reports; Hatch Project reviews; UA time reporting and approval. Revise / eliminate / combine as appropriate.

Recommendation 12: Develop methods and mechanisms for sharing time and access to equipment and facilities currently in the college.

Recommendation 13: Identify specific equipment / space needs in CALS for today’s and tomorrow’s research, build teams who do and will use these facilities, and seek federal funding (Major Research Equipment grants, and the like).

Recommendation 14: Identify potential graduate research topics of overarching themes and pursue coordinated funding (IGERT). Consistently put strong proposals into such VPR-screened programs.

Recommendation 15: Improve the pre-award process to provide a more consistent suite of services across the college. Change mind set from gatekeeper to facilitator. Reduce redundancy in processes and procedures.

Recommendation 16: Develop infrastructure for the writing and submission of large team projects. Coordination is needed with faculty across and off campus, in developing management plans, and in making proposals look professional (much beyond the single investigator grants). ASU does this as do other Colleges of Ag, national labs, and others.

Recommendation 17: Obtain stable funding for graduate students beyond the first year of study (TA/RA positions, fellowships, scholarships). Develop an endowment for graduate student support, specifically to target U.S. students in highly competitive areas.

Recommendation 18: Find a method for upper administration to recognize that the FY13 rise of graduate student ERE rates to 65% threatens our ability to compete with other institutions and will erode graduate education on this campus. Researchers will migrate to a post-doc dominated approach.

Recommendation 19: Develop creative ways to circumvent the payment of full ERE for graduate students after their comprehensive examinations (a point where they are no longer taking classes and so do not need full tuition, BUT grants will be still charged full ERE).

Recommendation 20: Consider the approaches for hiring new faculty with the goal that any new hires be able to not only develop their own program but to fill needed expertise niches within established teams. Put a priority in hiring *within* the current Venn diagram rather than adding breadth.

Recommendation 21: More clearly define faculty performance criteria (including entrepreneurship and intellectual property (IP) creation). Better define excellence, acceptable, poor performance. Broaden promotion and tenure guidelines to include IP. Add entrepreneurship and risk-taking to position

descriptions (faculty and staff).

Recommendation 22: Establish team-based Hatch Projects. No longer require Hatch projects from faculty who do not have research expectations consistent with the Hatch Act. Convert the majority of single PI Hatch projects to multiple and/or team-based Hatch projects.

Recommendation 23: Provide funds for faculty travel to participate in Hatch-multistate projects

Recommendation 24: Highlight and implement partnerships with stakeholders for two-way access to capabilities, knowledge, technology, equipment, etc.

Recommendation 25: Conduct cluster hires that are not redundant, but support existing expertise.

Recommendation 26: When permitted by the funder, consider requiring faculty to budget a portion of academic year salary coverage on large / federal grant submissions (in addition, for example, to summer salary coverage).

Recommendation 27: Institutionalize regular research PI orientation / training, to cover topics relevant to new and all faculty and PIs, including topics such as: grants.gov; grant alert databases; best practices in federal grant submission. Record sessions and post to website.

Recommendation 28: For faculty whose performance merits pay increase, explore the possibility of exchange of salary increase with reduction in state-committed FTE adjustment. For example, CALS and faculty agree to 5% salary raise in exchange for reduction in state-supported salary to .95 FTE. For faculty who regularly have extramural funding, this exchange would be fairly low-risk – and for all faculty this could incentivize extramural funding productivity. Example:

For \$100k salary, increase:	Salary potential	CALS pays
5%	105,000	99,750
7%	107,000	99,510
10%	110,000	99,000

4. Identifying potential strategic CALS investments

Leverage current / existing project / opportunities:

- National Children’s Study; iPlant
- Clinical translational science - what happened to the NIH submission from UA?; IGERTs - what's going on with UA committee?

Potential Big Ideas for Investment, Science & Technology Centers:

- Arid/semiarid lands / agriculture
- Water sustainability
- Computational and synthetic plant biology
- National Computational Biology Center
- National Phenotyping Center
- Dynamic human health systems
- Sustainable ... economies / health / environment
- Integrated medicine and human health
- Bio energy - renewable energy & bioproducts
- Center for aging
- Genotyping the state of Arizona

Potential strategies:

- Increase communication across fields / units in CALS to foster “big science” collaboration:
 - Assoc Dean for Research could convene heads of research centers / institutes
 - Theme-based, college-wide discussions / colloquia
 - Formation of umbrella organizations (e.g. Center for Insect Science at UA, Atkins Center for a Sustainable Future at Cornell)

- Team Building
- Match on grants - or IDC incentives – need to identify additional sources of matching funds and communicate to faculty.
- New merit based startup packages at 6-year reviews
- Review teaching / research FTE split: are there better allocations for individuals that would support the teaching / research goals / mission?
- Send out a request for one KEY proposal title from each faculty

Recommendation 29: Construct and facilitate teams in the 4-6 areas of greatest potential for large scale funding. Name a lead individual on each activity; provide resources for several meetings (lunch, conference calls). Eventually provide proposal support and coordination (pre-award) for submission of large grants.

Recommendation 30: Educate and mentor junior faculty on identifying appropriate targets of funding, on grant submissions, meeting with Federal funding agency program managers (e.g., provide \$1k / yr for 2 years for junior faculty to go to D.C.; bring along a senior faculty member or administrator). Monitor the ROI.

Recommendation 31: Mentor mid-career faculty. Facilitate transitions to new research areas with greater funding potential. Consider a mid-career start up package to re-invest in faculty needing some assistance (not for ones who are already on a good path). Monitor the ROI.

Recommendation 32: Establish bridge funding mechanism to temporarily maintain successful grant-funded programs that have had adverse grant funding decisions. Allow for the continued collection of data and resubmission of proposals.

Recommendation 33: Proactively identify associate and full professors that can lead multi- and interdisciplinary teams. Support teams through a variety of actions (leadership development, sponsoring interaction around a specific request for proposal, discussion among faculty and P&T committees to develop culture that values team leadership).

Recommendation 34: Institutionalize through appropriate staffing and resources a global engagement culture and approach. The international activities of CALS could increase strategically in response to growing needs and opportunities.

Recommendation 35: Institutionalize team, industry and pilot-grant programs. Better establish teams/promote competitiveness for external awards/strengthen industry partnerships through entrepreneurial activities.

Recommendation 36: Create a more strategic awards strategy for faculty and staff that can be used to honor significant accomplishments throughout careers. Identify existing CALS and UA awards and "missing" award opportunities. Nominate CALS faculty for UA-wide awards.

Recommendation 37: Establish and maintain formal mentoring and professional development programs for Assistant and Associate Professors. Collect best practices from across the college and UA; link to existing opportunities for grant writing and program leader visits.

5. Building our tech transfer, IP development, external business relations / development

Pending Action Items:

- More data / analysis of current status of CALS work / impact in this area is needed.
- We discussed the need for a couple of consistent key messages to come from all levels in CALS for the new President (and ultimately Provost), including:
 - Problems with IDC campus-wide – and how to reinvest those funds in research endeavor
 - Need for close look at campus systems (sponsored projects): The complete (positive) culture shift in IRB is an example of something to consider.

- We have data now on research, contracts and grants in CALS for the last decade – which will allow us to explore some questions over the summer. (e.g.,: We do not have data on proposal success rate - or low submission rate? Incentive would depend on this answer.)

Recommendation 38: Begin to collect and evaluate information on proposal submission rate, success rate, and tracking of near misses. Develop a lessons learned document and use this, especially for large team projects.

Recommendation 39: Coordinate interactions between faculty and the business community. Share resources and information (especially to avoid duplication). IP and \$ are important but also is building lasting relationships.

Recommendation 40: In areas where we have strong researchers and no direct extension component, consider hiring new extension personnel; in areas where we have strong extension programs but little research, consider hiring new research personnel.

Recommendation 41: Interface extension programming with outreach of research programs. Develop 1 on 1 on 1 interactions where possible (researcher, extension personnel, industry).

Recommendation 42: Develop business-friendly IP policies. Reformulate IP policy so that extensive resources are not spent negotiating unlikely or unrealizable intellectual property. (Recognizes that the “total relationship” with a business might be more valuable than IP alone). Clarify and make consistent how businesses should expect to interact with faculty to: provide gift support; provide support for fee-for-service and evaluation / demonstration activities; and sponsor research.

Recommendation 43: Develop professional development opportunities in entrepreneurship (workshops, seminars, curriculum development). Develop a faculty entrepreneurship mentoring program, with a business plan and funding.