

GROWING *the* FUTURE

STRATEGIC FRAMEWORK 2014



College of
Agricultural & Life Sciences
UNIVERSITY OF WISCONSIN-MADISON
Celebrating 125 Years



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COLLEGE OF AGRICULTURAL AND LIFE SCIENCES ■ UNIVERSITY OF WISCONSIN–MADISON

OUR 125TH YEAR finds us at a time of great opportunity. The University of Wisconsin–Madison College of Agricultural and Life Sciences is an esteemed leader in addressing many of the grand challenges facing our world today. Providing food for all, developing sustainable energy sources and coping with changes in climate are examples of the pressing global concerns that are central to our purview.

While facing challenges, we also see opportunities. Recent decades have yielded widespread and enormous scientific advances, including the genomics revolution and an explosion of information of all kinds. Basic research has increased knowledge of the mechanisms of living systems. Here at CALS, our breadth of expertise along the continuum—from fundamental knowledge to applied research to implementation—puts us in a particularly strong position to meet the grand challenges of this century.

What are our greatest strengths, and which challenges are we in the best position to address?

People and institutions around the state, nation and, indeed, the world look to CALS for knowledge and leadership. Our students, in ever-increasing numbers, come to us for an education that equips them to address the grand challenges they care about so deeply. In addition to preparing students to meet critical workforce needs in many areas, we also train them to be innovators and creative problem-solvers who can apply their abilities to new issues that will emerge in coming decades.

And so the questions fall to us: How can we, as an institution, best meet the challenges and opportunities that confront us, particularly in an era of resource constraints and changing funding models?¹ How can we continue and expand our leadership as we move further into the 21st century? What are our greatest strengths, and which challenges are we in the best position to address?

Members from all corners of the CALS community came together during the 2012–2013 academic year to address these questions, led by a committee composed of administrative leadership, faculty, staff, students and external partners. The team conducted surveys, interviews and listening/discussion sessions with representatives from industry, business, government, NGOs and other organizations as well as students and alumni. We sought input at two All College meetings devoted to strategic planning and established a website to inform both the university community and the public on progress as well as solicit comments and suggestions.

1. See Appendix 1, “Current Context for Strategic Planning: Changes in Funding, Students, Faculty and Research at CALS,” posted at www.cals.wisc.edu/stratplan.

In our first year of planning, our goal was to create a framework for building our future. Key accomplishments included:

- **CALS' MISSION, VISION AND SCOPE** for the 21st century
- **GUIDING PRINCIPLES** to inform our long-term and daily work as well as resource allocation
- **PRIORITY THEMES** for our research, teaching and outreach
- **RECOMMENDATIONS** in the following areas:
 - Education
 - Collegiate structure
 - Identifying areas for ongoing planning
- **STRATEGIES** to pursue our mission in keeping with our guiding principles, priorities and recommendations
- **NEXT STEPS** for further strategic plan development and implementation

The publication we present today, unanimously endorsed by the CALS Academic Planning Council, lays the groundwork for moving forward. It is meant to serve as a frequently consulted, living document that clarifies our direction and illuminates the path by which CALS, as our new tagline states, intends to grow the future.

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MISSION, VISION AND GUIDING PRINCIPLES

■ **Mission:** To advance and share knowledge, discover solutions and promote opportunities in food and agriculture, bioenergy, health, the environment and human well-being.

■ **Vision:** To lead in science, innovation and collaboration that improves life and sustains the natural world.

■ **Guiding Principles:** Innovative and relevant research is the basis of CALS activities and provides the foundation for excellence in our teaching and outreach. We strive to:

1 Invest in research, teaching and outreach activities in scholarly domains in which the college has acknowledged strengths or demonstrable potential;

2 Create opportunities and respond to 21st-century challenges by drawing on our strategic advantages in basic and applied sciences;

3 Reciprocate the trust placed in us by our stakeholders, in Wisconsin and around the world, through a commitment to excellence and relevance in all activities;

4 Honor and engage the ideas, enthusiasm and commitment of our students through excellence in teaching and learning experiences;

5 Foster diversity and equity through a climate of respect and inclusion;

6 Seek new sources of revenue with which to maintain and improve the quality of our programs, faculty, staff and facilities;

7 Encourage and reward innovation and activities that leverage synergies across units within CALS or the UW–Madison campus; and

8 Communicate CALS' mission and value with internal and external partners to foster mutual understanding and support.

Photo by Jeff Miller/University Communications

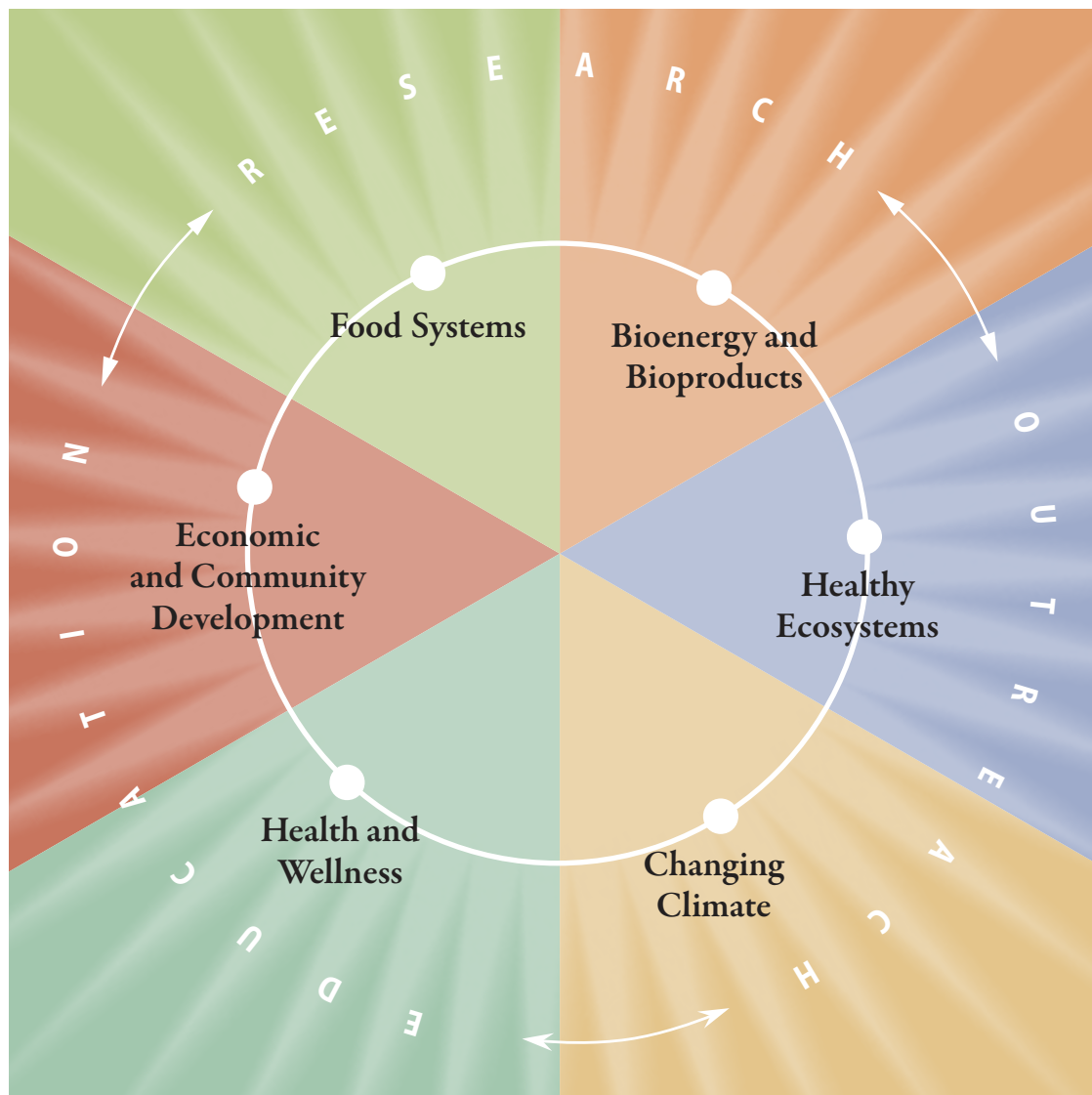


A nutritional science class draws a full house in the Agricultural Hall lecture hall, the University of Wisconsin–Madison's biggest classroom. More and more students are attracted by CALS' offerings and hands-on style of teaching. Undergraduate enrollment has increased by nearly 40 percent over the past 10 years.

PRIORITY THEMES

The priority themes address grand challenges among 21st-century societal issues where CALS has the potential to make significant impact and to lead in the creation and dissemination of new knowledge. The themes are intended to be cross-cutting in several ways. The complex issues they entail require interdisciplinary expertise; they require advances in fundamental knowledge and basic sciences, including the continued development of new tools; and they impact all our mission areas, including education and outreach, in addition to research. Mention of specific CALS activities is meant not to be comprehensive, but to provide examples of our current relevant work.

- Food Systems
 - Bioenergy and Bioproducts
 - Healthy Ecosystems
- Changing Climate
 - Health and Wellness
 - Economic and Community Development



■ FOOD SYSTEMS

A “food system” includes activities from production to consumption, from farm to table, at local to global scales. The 20th century saw great increases in food production and reduction of hunger. Developing effective food systems—ones that ensure a safe, secure, sustainable, affordable, accessible and nutritious food supply for all—to feed 9 billion people by 2050 will require continued innovation and dissemination of knowledge. Work in CALS addresses challenges across the spectrum of issues in production, distribution and consumption, including in such emerging areas as urban food systems.

Photo by Wolfgang Hoffmann BS'75 MS'79



CALS and UW–Extension have long worked with the state and private sector to ensure that Wisconsin’s dairy, meat and other food industries remain strong. A planned expansion and modernization of campus dairy and meat research and production facilities will help sharpen the state’s cutting edge in these signature fields.

Soil science professor Stephen Ventura (photo below, far left) is leading a USDA-funded study on how changes to local and regional food systems can promote healthy eating in urban communities. His partners include the Milwaukee-based nonprofit Growing Power (CEO Will Allen, far right), the University of Wisconsin–Milwaukee, and a number of other universities and community-based food organizations.

Photo by Sevie Kenyon BS'80 MS'06



The Plant Breeding and Plant Genetics program at CALS, run jointly by the departments of agronomy and horticulture, is one of the strongest plant breeding programs in the nation, helping farmers (and eaters) everywhere by developing the best plant varieties for a wide range of growing conditions. In the photo above, horticulture professor Irwin Goldman selectively breeds beet plants in his campus greenhouse.

Photo by Michael Kienitz



■ BIOENERGY AND BIOPRODUCTS

Energy and products derived from living systems have the potential to reduce global dependence on fossil fuels while enhancing ecological resilience and economic vitality. Realizing this potential requires fundamental scientific breakthroughs, technical and social innovation, and thoughtful application and monitoring so that the new fuels and bioproducts are effective and affordable. CALS activities include converting biomass to fuels and chemicals; generating energy from manure and other wastes while also meeting needs for disposal and management of nutrients; and supporting decision-making based on understanding the social, economic and environmental impacts of energy systems.



Photo (top) by Beth Skogen

Photo (bottom) by Matt Wisniewski/GLBRC



CALS researchers are testing a wide range of plants at the Arlington Agricultural Research Station for their potential as feedstock for biofuels.

The founding of the Great Lakes Bioenergy Research Center (GLBRC) at CALS with an initial \$125 million from the U.S. Department of Energy in 2007 kicked off CALS as a global leader in biofuels research. In 2013 the DOE renewed its commitment with another \$25 million per year for five years. CALS bacteriology professor Tim Donohue leads the effort, which is now based at the new Wisconsin Energy Institute.

CALS biological systems engineering professor Troy Runge (center) analyzes manure separation techniques in his lab at the Wisconsin Energy Institute.

CALS researchers are working to convert dairy farm manure into a number of useful bioproducts. In a \$7 million federal grant project with Maple Leaf Dairy near Manitowoc, they are separating manure into components that serve as the basis for products as varied as biogas, fertilizer, chemicals, bio-plastics, animal bedding and mulch. Their goal is to improve manure separation technologies until their benefits can be realized on a broad commercial scale.

■ HEALTHY ECOSYSTEMS

Our landscapes provide many services, from food, fiber and fuel to clean water and air, from flood management and wildlife habitat to recreation and aesthetics. Competing demands on natural resources, made more intense by growing populations, make it a challenge to manage landscapes in ways that balance these services. Combining understanding of how these ecosystems respond to land management with inventive technologies and approaches helps foster innovative policies and economic opportunities. CALS efforts include designing and managing landscapes in ways that help provide clean water and air, mitigate climate change and promote biodiversity while building communities and offering economic gain.

Photos by Wolfgang Hoffmann BS'75 MS'79



How can we protect bees and other pollinators that are so crucial to our food supply? CALS researchers in entomology, community and environmental sociology, and bacteriology are working to keep bees healthy through identifying which hive environments, landscapes, public policies and other conditions allow them to flourish.



Our state's leading vegetable bin needs water—but some irrigation practices and other forces may be putting pressure on the region's lakes and streams. With the Central Sands Water Initiative, CALS researchers and their partners across campus are helping farmers, businesses, residents, environmental advocates and other groups find common ground on water use in central Wisconsin.

■ CHANGING CLIMATE

Impacts of increasingly erratic weather patterns and the general warming of the climate are expected to affect families, businesses, communities and ecosystems in complex ways and with unclear outcomes. Flooding, drought and unseasonable temperatures affect agricultural production, wildlife migration patterns and species distribution. In wild places and managed ecosystems alike, climate change introduces stressors and allows pests and pathogens to invade new territories, affecting plants, animals and humans. We seek to advance understanding of the causes of climate change and its many impacts as well as develop strategies—from new breeds and on-farm innovations to insect and pathogen control strategies—that are sufficiently robust to adapt to and potentially mitigate extreme weather conditions.



Photo (top) by Wolfgang Hoffmann BS'75 MS'79

Photo (bottom) by Sevie Kenyon BS'80 MS'06



Cows at the Arlington Agricultural Research Station dairy barn.

In a \$9.9 million, multistate research project funded by the USDA, CALS/UW–Extension soil science professor Matt Ruark and CALS genetics and agronomy professor Molly Jahn are leading efforts to identify dairy production practices that minimize the emission of greenhouse gasses and are more resilient to the effects of changes in climate.

Janesville farmer Kirk Leach BS'78 showing irrigated versus unirrigated corn during the 2012 drought.

CALS and UW–Extension researchers work with farmers all over the state to adapt to the effects of climate changes—work that includes developing crop varieties that are resistant to drought or to pests brought on by changing weather. CALS agronomy professor Chris Kucharik serves as co-chair of the agricultural working group with the Wisconsin Initiative on Climate Change Impacts (WICCI), a partnership between UW–Madison, the Wisconsin Department of Natural Resources and an array of other public and private institutions.

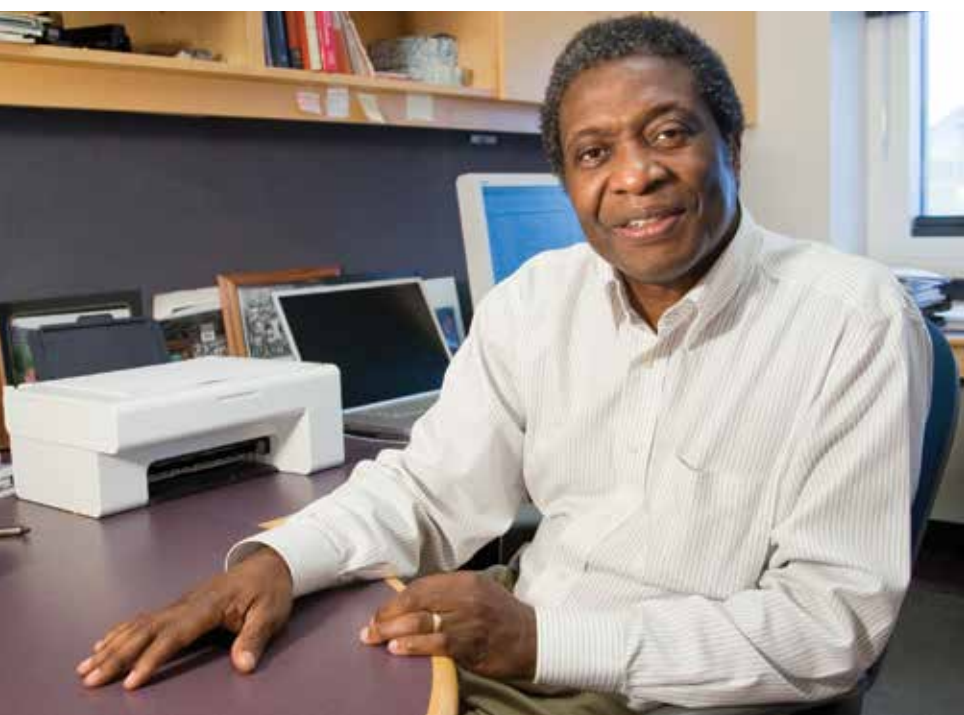
■ HEALTH AND WELLNESS

Through basic and applied research, CALS contributes to the promotion of health and the reduction of disease in humans, animals and plants. The obesity epidemic, which exacerbates many common diseases, has created an urgent need to better understand its causes and prevention. CALS brings diverse strengths to this endeavor, including expertise in metabolomics, functional foods and nutraceuticals. Moreover, CALS' efforts include improving animal health and well-being, which contribute not only to a safe and healthy food supply but also can directly impact human health via animal-vector diseases.

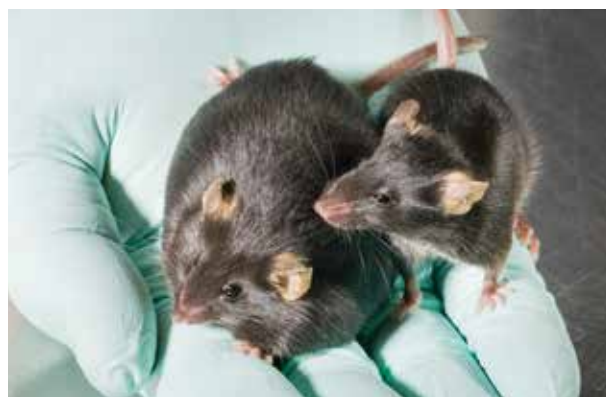


Photos by Wolfgang Hoffmann BS'75 MS'79

CALS biochemistry professor emeritus Hector DeLuca has conducted decades of research defining how the body's organs use vitamin D. His findings include the development of vitamin D-based compounds to address such ailments as osteoporosis and bone diseases associated with kidney failure—work that has resulted in some 1,500 patents earning more than \$500 million in royalties, according to the Wisconsin Alumni Research Foundation (WARF), the university's tech transfer office. WARF was conceived of by DeLuca's mentor, Harry Steenbock, last century to ensure that proceeds from university-based patents—starting with his own work increasing vitamin D content in foods, thus eliminating rickets—are invested in further university research.



Same diet, different sizes: James Ntambi, a CALS professor of nutritional sciences and biochemistry, worked with mice to identify how foods interact with a particular gene to determine how the body stores fat from food—work that is critical to understanding and addressing obesity.



■ ECONOMIC AND COMMUNITY DEVELOPMENT

In Wisconsin and around the world, local economies are increasingly influenced by global markets. This brings both challenges and opportunities that affect people, businesses, communities and the environment. Building healthy local economies and prosperous, stable communities requires understanding their internal dynamics and the nature of their interactions with national and global systems. That understanding is the foundation for good policy advice at community, state, national and international levels. CALS activities help inform decision-making by producers, entrepreneurs, consumers and policy makers to enhance the well-being of families and businesses; provide information to help communities cope with change and advance social and economic development; and spur social and economic innovations that benefit individuals and communities.



Photos by Wolfgang Hoffmann BS'75 MS'79

CALS/UW–Extension agronomy professor Joe Lauer (in photo, right) analyzed two decades of data with agricultural economists Jean-Paul Chavas and Guanming Shi to determine the benefits of genetically modified (GM) corn for farmers. The major benefit of GM corn, they concluded, doesn't come from increasing yields in average or good years, but from reducing losses during bad ones—important information for Wisconsin's agricultural economy.



Life sciences communication professor Bret Shaw is partnering with UW–Extension and the Wisconsin Department of Natural Resources to market hunting to new demographic groups, including women and young people. The Hunters Network of Wisconsin, as the initiative is called, is needed to stem a decline in the sport, which has a \$1.4 billion impact on Wisconsin's economy and provides a crucial component to wildlife management recognized since the days of Aldo Leopold. Forest and wildlife ecology professors Tim Van Deelen and Mike Samuel, along with a host of CALS students and alumni, serve as volunteer teachers in beginning hunting classes (shown in photo) that are part of the effort.

EDUCATION

The strategic planning committee looked at CALS' teaching, training and learning with an eye toward strategic positioning for our educational mission. An education workgroup was charged with crafting recommendations and identifying specific tasks to be undertaken in the coming academic year. What follows is a summation of key points of the workgroup report.²

A key question in our analysis was, "What makes CALS CALS?" Our college's hallmarks include research-based, hands-on teaching of undergraduates; world-class graduate programs rich in research and project assistantships; and short courses, workshops and other formal and informal programs that forge ties with industry and the public. What makes CALS special is not only that we conduct these activities but that we integrate them into a coherent set of practices that blurs the separation between teaching, research and service and crosses boundaries between disciplines.

Recommendations in Three Key Areas

CONTENT (What do we teach and why?)

As scientific disciplines and techniques emerge and change, we must ensure that our educational mission extends beyond disciplinary training and envisions academic structures that move toward a problem-oriented approach. We see three learning goals as particularly pertinent: to educate creative problem solvers, to contribute to workforce development, and to prepare scientifically literate and culturally competent citizens.

DELIVERY (When, where and how do we teach?)

New modes of delivery have the potential to increase our capacity with existing audiences and extend our reach to new audiences. We urge an approach that prioritizes quality and the creative use of our finite resources. These new modes of delivery should ideally be developed in the context of other campus-wide

Photo by Jeff Miller/University Communications



Half of CALS seniors complete research projects with a faculty member outside of course or program requirements before graduation—more than at any other UW–Madison college.

Their work can make a difference. Nate Cira BS'11 (left) contributed a key component of a simple, inexpensive bacteria test that could save newborns from contracting deadly infections—work he did as an undergraduate in the lab of CALS biochemistry professor Douglas Weibel. The team received funding from the Bill & Melinda Gates Foundation to pilot the test in rural Africa.



Photo by Nicole Miller MS'06

Forestry Summer Camp takes CALS undergrads to Kemp Natural Resources Station for three weeks of on-site learning.

Research-based, hands-on teaching of undergraduates is a hallmark of education at CALS. The college will look at introducing and expanding a variety of innovative teaching models in ways that will increase capacity and enhance student learning.

or system-wide initiatives, such as UW–Madison’s Educational Innovation or UW–System’s Flexible Option degrees, and in partnership with Extension and other campus units. We urge the college to think creatively about its role in outreach to public audiences beyond Extension. We must leverage the college’s leadership and expertise in all modes of communication to a large external audience.

CAPACITY (Whom do we teach, and how much?)

As important as content and delivery are to our educational mission and future, we contend that capacity is the area with the most leverage over the other two, since in order to increase capacity (the number and type of students we teach), one essentially has to think about both content and delivery. Capacity also is the area that is most pressing on our attention, given the increase in student enrollment and decrease in faculty.

A key strategy for CALS will be to direct our instructional resources toward activities and policies that will increase our overall instructional capacity while maintaining instructional quality. Exploring opportunities to share CALS expertise with nontraditional students via nontraditional teaching methods may allow for continuing capacity growth and also bring in additional revenue. Specifically, we urge the college leadership to contemplate scenarios that decouple growth or instructional capacity within departmental majors on the one hand, and growth in credit hours provided by the college on the other.

It is conceivable, for instance, that CALS would cap enrollment for some of its majors in order to be able to continue to provide high-quality education, even within shrinking 101 budget environments. This is not incompatible with the idea of departments—regardless of size—providing large service courses in content areas relevant to students across the college and the university. In fact, capacity building in the area of service courses (a) allows the college to strategically invest in structures that will be rewarded by emerging campus-wide budget metrics; and (b) is much more adaptable to highly dynamic budgetary or staffing realities than more formalized structural growth in disciplinary majors. We should look for ways to work across boundaries to join similar class content courses while potentially conserving instructional effort. This will have a positive effect on the student population by showcasing the breadth of the entire university and hence provide a more robust experience.

Recommended Workgroups for 2013–2014

We recommend that three target areas be considered by workgroups—Educational Capacity Metrics, Use of 101-Funded Graduate Assistantships, and Short Course Offerings and Infrastructure.

1. Educational Capacity Metrics

This area concerns how we measure instructional “capacity” across the college; we cannot increase our capacity if we do not have a clear set of current measures and a realistic set of future goals.

Our rapidly growing enrollments require us to reconsider our teaching loads. As campus explores moving toward responsibility-centered management, with budgets driven by instructional contributions, we would be wise to consider what metrics accurately reflect our contributions to the teaching mission of the university. CALS has a reputation on campus for low teaching loads relative to our sister colleges. We need to take this external perception seriously.

We recommend that this working group review existing and available data and select a set of metrics that is both appropriate for the college’s diverse mission and captures the values and principles of the college.

2. Use of 101-Funded Graduate Assistantships—and whether some should be converted to teaching assistantships

We recommend that this working group review the current distribution and use of 101-funded graduate assistantships in the college and offer a plan for the future use of these assistantships.

3. Short Course Offerings and Infrastructure (not limited to FISC)—as an area of potential growth in capacity (and resources) for the college

Some short course offerings (Farm and Industry Short Course, School for Beginning Dairy and Livestock Farmers, Master Cheesemakers, etc.) are well established and recognizable, and many such efforts generate revenue for the units that run them. But the full extent of our efforts to provide focused training related to specific career goals is unclear, as is our potential future capacity. In addition, many of these programs are run independently, that is, there is little coordination of short courses across the college. Are there infrastructure services (distance education capabilities, registration and enrollment systems, billing procedures, etc.) that could support multiple programs?

We recommend that this working group review the current array of short course offerings in the college and recommend future subject offerings and/or infrastructure support that would encourage both efficient use of current resources and generation of future revenue.

2. See the full education workgroup report (Appendix 2) at www.cals.wisc.edu/stratplan.

Photo courtesy of the Department of Food Science



They flock to Babcock: Food science professor Scott Rankin (in lab coat) trains industry professionals from around the country in the art of ice cream making.

Education at CALS is enriched by close partnerships with industry. A key way for learners of all levels of expertise to experience this is through the college’s many short courses, which also can provide significant revenue for the units that run them. The college is exploring the potential for expanding short courses.

COLLEGIATE STRUCTURE

The strategic planning committee examined the structure of CALS in an effort to assess whether the college is organized in a way that best supports our long-term goals. A workgroup within the strategic planning committee was charged with identifying departments where restructuring may be desirable, making recommendations about options, and defining criteria for determining the college's structural efficiency. The group drew upon UW–Madison Faculty Policies and Procedures guidelines for definitions and processes. What follows is a summation of key points of the workgroup report.³

The goal of restructuring is to build or maintain strength and better use scarce resources by cooperating, collaborating or merging with other units with allied and/or complementary missions. While budget necessities might compel college administration to require restructuring, any unit is better served if its members are themselves able to identify the need for restructuring their unit, and are able to fashion that restructuring in a way that helps them best achieve excellence.

Types of restructuring include:

- Sharing facilities or administrative services to varying degrees (e.g., some departments share IT services; others have formed a “hub” for all administrative services)
- Sharing instructional programs (e.g., Community and Environmental Sociology and Sociology, Microbiology Doctoral Training Program) or sharing courses, cross-listing courses, co-teaching courses and teaching across departments and programs
- Sharing faculty positions (affiliate or joint appointments)
- Forming collaborative units (e.g., but not exclusively, centers) with shared vision, goals and timeline
- Combining departments (e.g., Forest Ecology and Management with Wildlife Ecology) or blending with departments in other colleges (e.g., Genetics)
- Dissolving departments and moving faculty to appropriate homes



Photo courtesy of CALS International Programs

Global Health students from a range of different majors visit a clinic during a three-week Study Abroad program in Uganda run through CALS.

Since its inception in fall 2011, the Undergraduate Certificate in Global Health has become a model of successful cross-campus collaboration. Offered by CALS in partnership with the campus' new Global Health Institute, with support from the Madison Initiative for Undergraduates, the certificate is open to students from any major. It entails a combination of global health-related coursework—which includes the integration of health with food and agriculture—and a designated field experience in the U.S. or abroad. The program resonates deeply with students—it is now one of the most sought-after certificates on campus.

Reasons to consider restructuring:

- If disciplines have evolved to a degree that new boundaries or combinations could enhance potential.
- Stakeholder needs, interests or support have changed such that new alignments might better serve them.
- Restructuring allows departments to recruit and retain excellent faculty, staff and students and to maintain a vibrant department where members can do their best research, teaching/learning, outreach and service.
- The size of the department has shrunk or is approaching critical size thresholds wherein its performance may be impaired:
 - Departments need sufficient size to provide depth and excellence in undergraduate and graduate education opportunities that will attract the best students.
 - Administrative systems require a level of expertise, training and retraining impossible for resource-limited support staff members in a small department to provide.
 - Shared governance requires sufficient faculty resources to be involved in hiring, mentoring, preparing tenure dossiers, leadership (e.g., department chair, associate chair), participation in college and university governance, etc.
 - Departments require sufficient numbers of faculty and support staff to manage undergraduate and graduate programs, graduate recruitment, fundraising, communications, planning and assessment.

Factors in consideration of restructuring:

We identified a set of broad indicators regarding when it is appropriate for a department to consider restructuring (solid squares). We also identified specific metrics (open squares) to convey the challenges and need for flexibility and nuance in applying them to specific departments.

Broad Indicators

- Inadequate department infrastructure/administrative support due to size.
- Inability to address governance, instructional, outreach or service needs.
- High allied programmatic strength exists elsewhere on campus or regionally.
- Existence of duplicative facilities or redundant activities.

■ Low stakeholder interest in and demand for research, education and outreach.

■ The department has experienced movement of significant numbers of professors to other departments with similar disciplinary orientations.

Specific Metrics (in comparison to similar departments and/or other college units)

- Number of majors or advisees (graduate, undergraduate, non-departmental programs)
- Number of credits (graduate and undergraduate) taught
- Federal and nonfederal funding; generated indirect costs
- Alumni and industry support (e.g., unrestricted gifts)
- Scholarly output, as expected for the discipline (e.g., peer-reviewed journal articles, citation indices, national rankings)
- Number of person-contact hours resulting from extension/outreach activities

Recommendations

1. The number of state-supported faculty FTEs is an important indicator of department viability. Any department with low numbers should periodically review both the general indicators for restructuring (solid squares) and specific measures of performance (open squares).
2. CALS should encourage and reward cross- and multi-departmental initiatives by supporting cooperation between departments and the creation of interest-area groups that transcend departments. Cooperation between individuals in the college and on campus is ongoing and active. To the extent possible this should be expanded and rewarded.
3. CALS should support new structures by facilitating discussions and, to the extent feasible, providing restructuring incentives that generate operational efficiencies or enhance the college's ability to fulfill its mission within a land-grant university.
4. This workgroup and this document are focused on departments. However, many of the issues considered here are relevant to centers, institutes, and other elements of the college, and we recommend conducting a similar study of those structures.

STRATEGIES

These are the strategies by which CALS intends to pursue its mission, vision and priority themes in the coming years.

- 1 Direct instructional resources** toward activities and policies that will meet growing need and demand for specific educational programs while developing innovative methods of delivering knowledge and advancing student learning.
- 2 Create educational offerings** that respond to emerging scientific developments and opportunities as well as student needs.
- 3 Support pursuit of the basic scientific knowledge** that will enable advances in theme areas.
- 4 Provide incentives and lower barriers** for research projects addressing complex challenges, including interdisciplinary projects and those bridging basic and applied disciplines.
- 5 Support processes that enable greater collaboration** across departments, centers and programs.
- 6 Collaborate to maximize effectiveness** and efficiency of administrative services.
- 7 Partner strategically across the campus**, around the state and beyond in the pursuit of our mission, vision, themes and strategies.

NEXT STEPS

To begin, we will focus on strategies 1, 3, 5 and 6, which the strategic planning committee identified as top priorities. Workgroups and standing committees will begin implementing these strategies in the areas designated below and provide updates during the 2013–2014 academic year. Areas will be added to this list in years to come. While these strategies and operational areas are the particular focus of the dean's office, all units of CALS are encouraged—and expected—to consider how all of the above strategies may be implemented in their structures and activities.

- 1 Educational capacity metrics**, as recommended by the strategic planning committee's education workgroup. [Speaks to strategy item 1 above, abbreviated S1]
- 2 Use of 101-funded graduate assistantships**, as recommended by the strategic planning committee's education workgroup. [S1]
- 3 UW–Extension and CALS relationship**—how we can best partner to serve current and future stakeholders. [S7]
- 4 International work** and how programs may be more efficiently integrated across campus. [S1, S4, S6]
- 5 Space and facility priorities** [S1, S5]
- 6 Determine priorities** in the basic sciences and within our priority themes, and map activities accordingly. [S3, S4, S5]
- 7 Alumni programs and services** [S6]
- 8 Agricultural Research Stations**—priorities and planning. [S4, S6]
- 9 Centers and institutes** will be the focus of evaluation and planning for structural efficiencies. [S5]

APPENDIX 1

Current Context for Strategic Planning:

Changes in Funding, Students, Faculty and Research at CALS

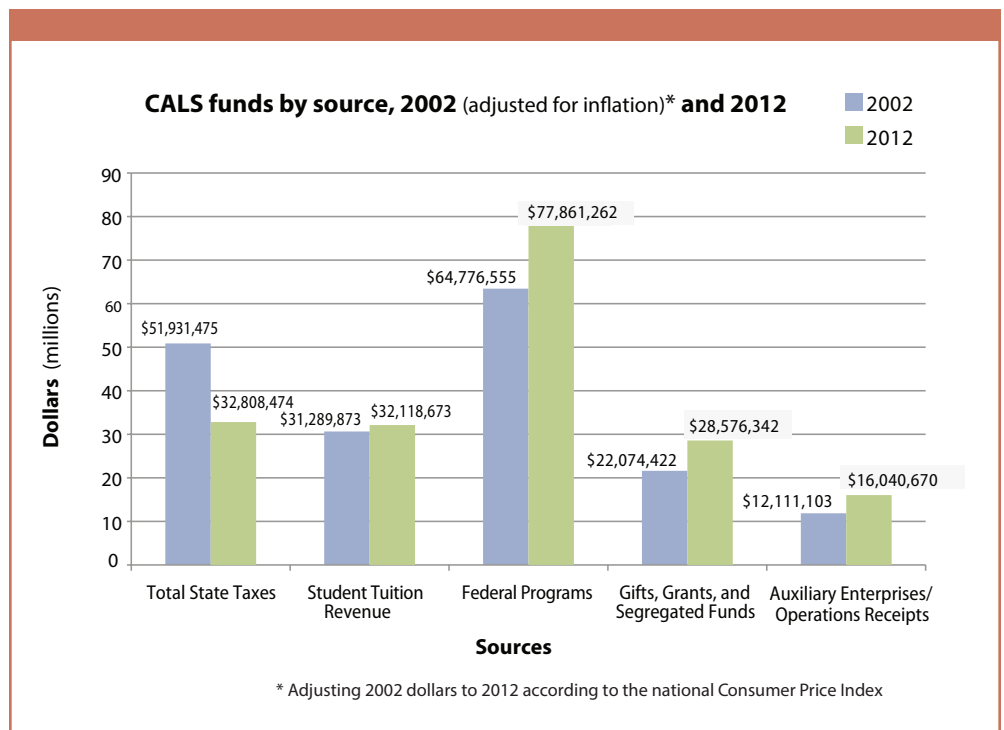
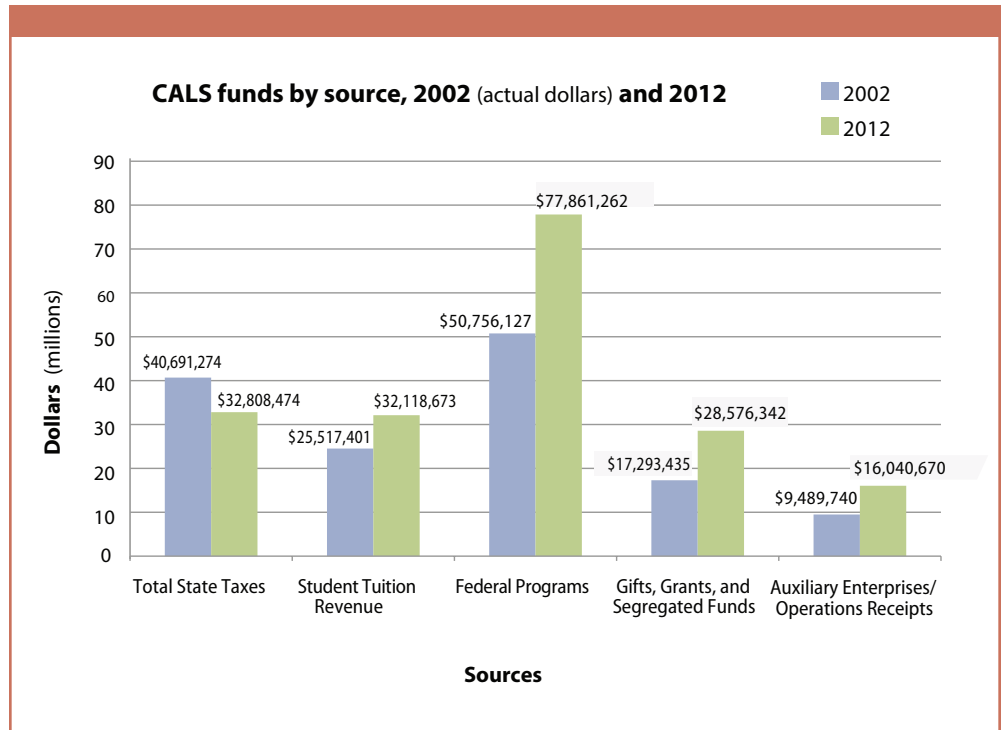
FUNDING

■ Tax revenue funding has decreased while tuition funding has gone up.

■ Federal research funding has increased over a decade and appears to have stabilized, despite ever-increasing levels of competition.

■ Private gifts and grants have increased.

■ Different funders have demands and expectations that we must address.



STUDENTS

Numbers are dramatically increasing

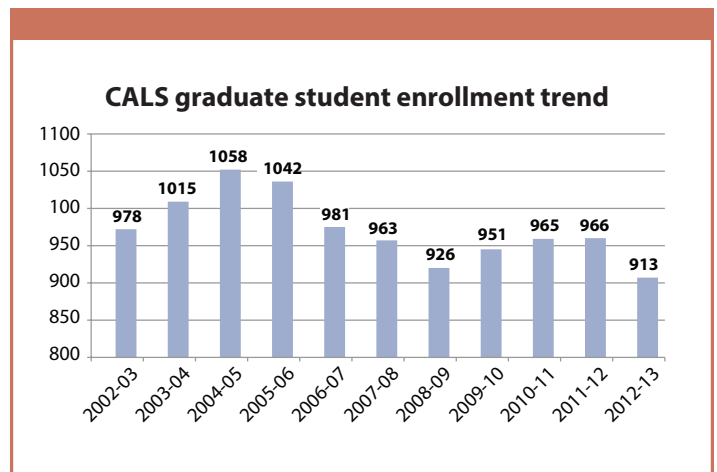
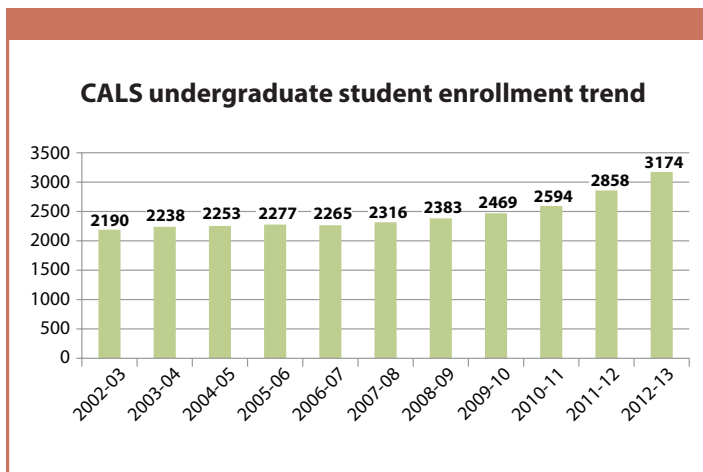
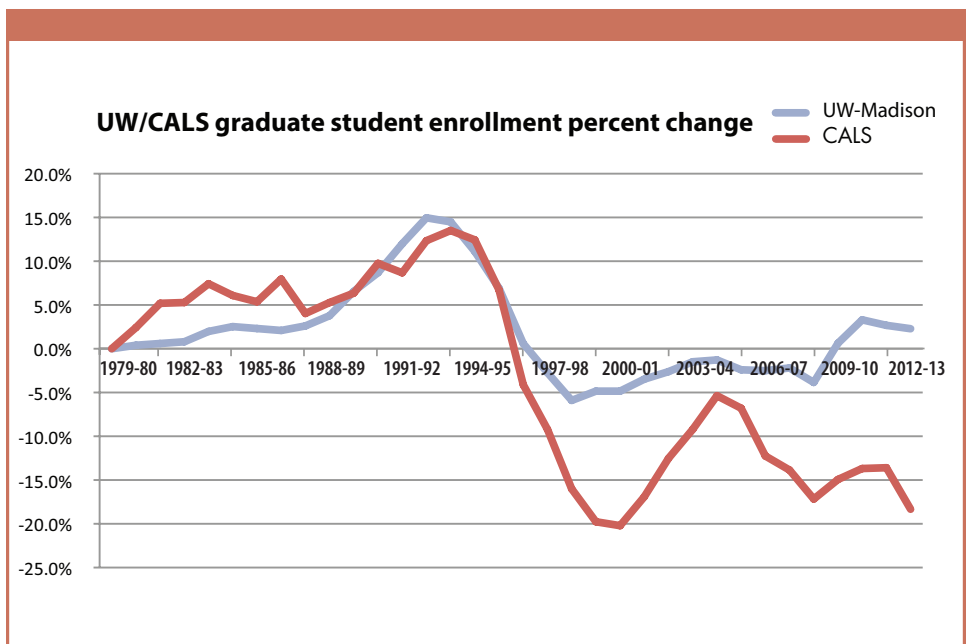
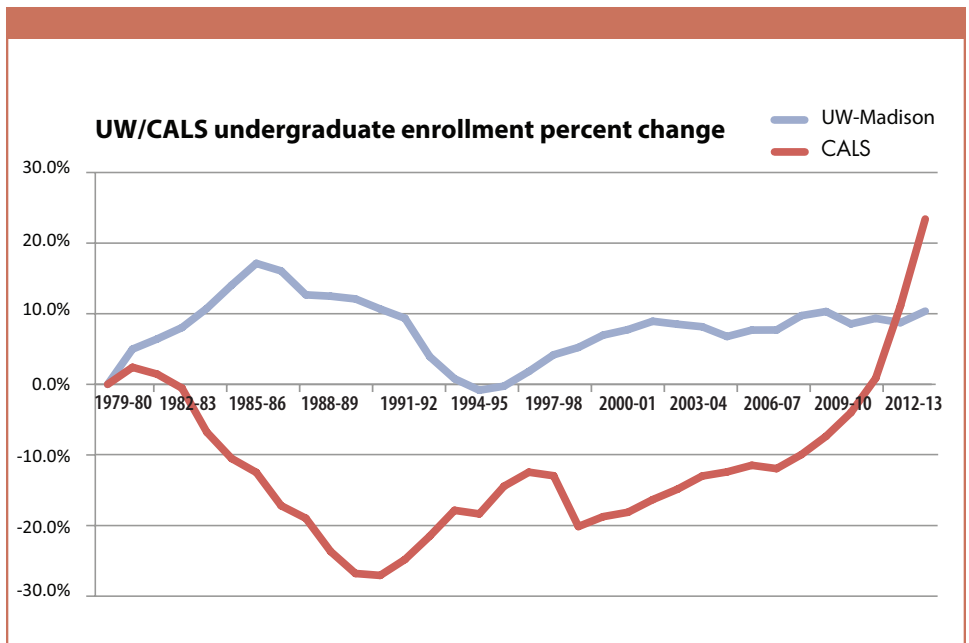
CALS had 3,059 undergraduate students enrolled in fall 2012—an increase of almost 40 percent compared with 10 years earlier. The rate of enrollment increase has accelerated in recent years, with a more than 7 percent increase from 2011 to 2012 alone. That growth happened after a period of enrollment decline through the 1980s and relative stasis through 2000.

Demographics are changing

CALS now has more female than male students enrolled as well as increasing numbers of non-state residents and minorities. In 2012, enrollment was at 60 percent women, 30 percent non-state residents and 19 percent minorities. International enrollment is at 189 undergraduates and 242 graduate students.

Graduate student enrollment has been relatively steady over the last five years, but we have seen more than a 10 percent drop over a decade.

Forty percent of CALS students demonstrate significant financial need.

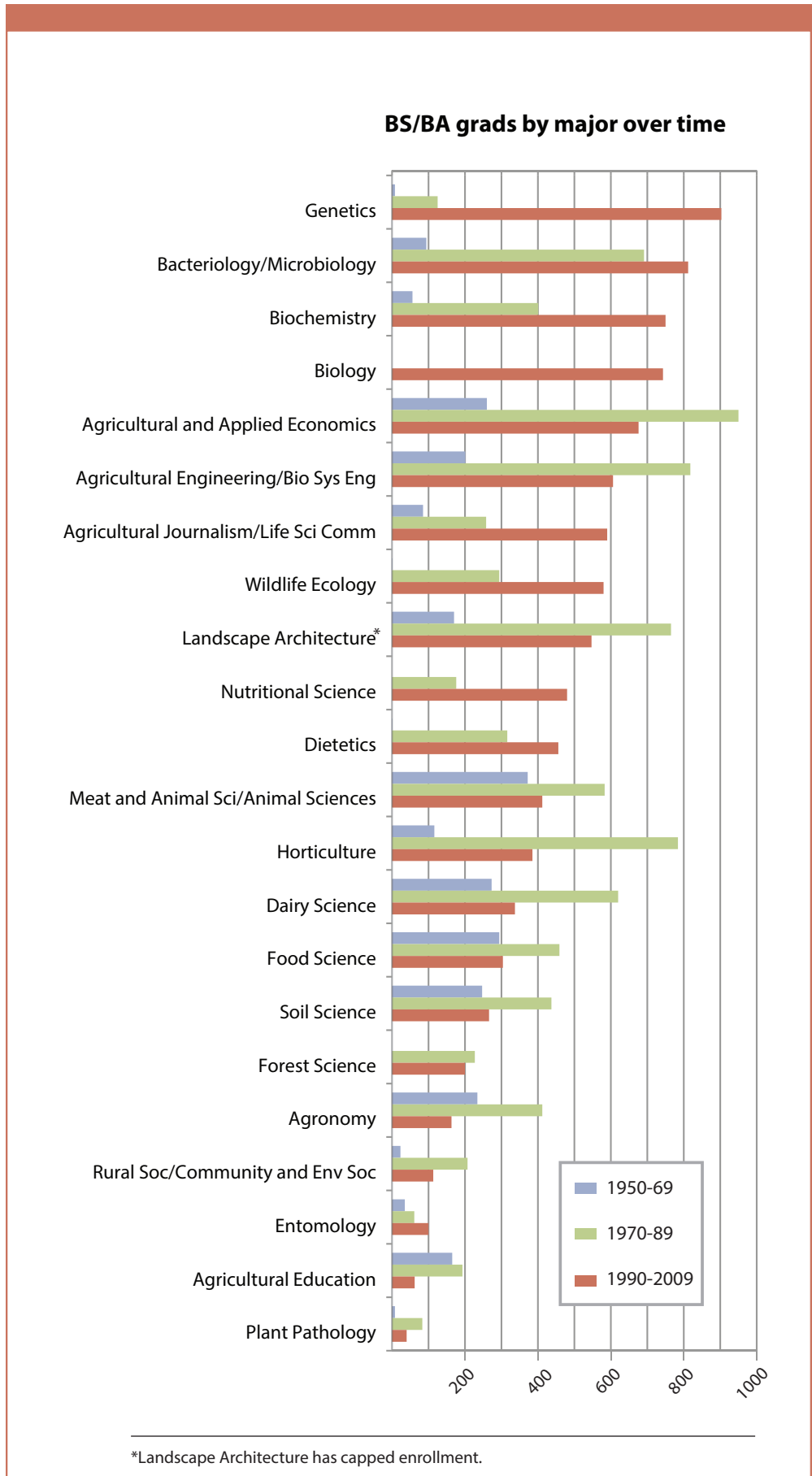


■ Preferred majors are changing

CALS has experienced significant growth in such degrees as biology, biochemistry and genetics as well as microbiology, nutritional sciences, biological systems engineering and food science, which has doubled since 2008. Biology, which became an offered major in 1999, is now the biggest major at UW–Madison. Students majoring in biology may enroll in CALS or Letters and Sciences; more than half of them are enrolled in CALS.

Based on enrollment changes in the first years of the 2010 decade, we project biochemistry, biological systems engineering, biology, community and environmental sociology, food science, life sciences communication and nutritional sciences to continue growing by the largest percentages by 2019.

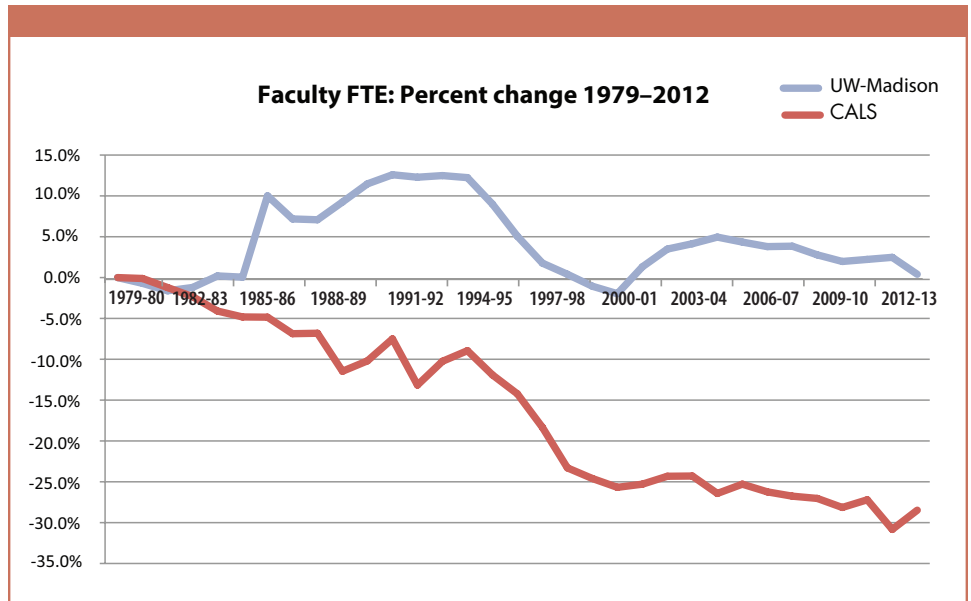
Environmental sciences, a major launched in 2011, is not reflected in this alumni population.



FACULTY

In terms of decreasing numbers of faculty, CALS is faring worse than the rest of UW–Madison.

The steep drop in the 1990s was partly a result of significant Extension cuts that affected CALS integrated faculty positions.

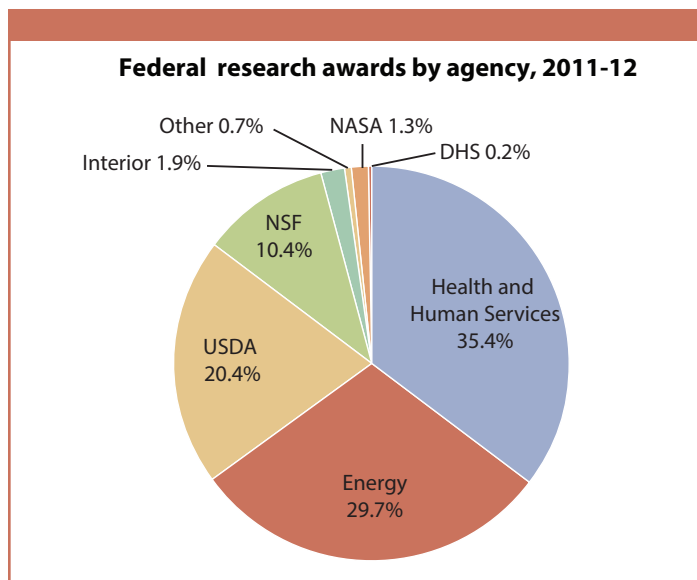
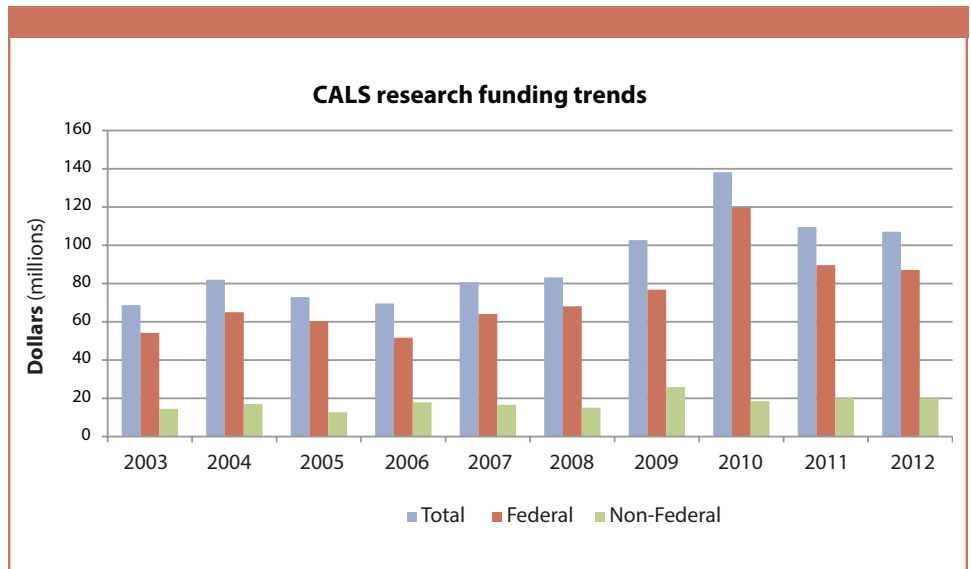


RESEARCH

Public funds are increasingly coming from federal research grants, which lack the flexibility of state funding.

The high federal funding in 2010 was due to the American Recovery and Reinvestment Act of 2009.

Non-federal research funding has been increasing in recent years.



APPENDIX 2

CALS Education Workgroup—Full Report

■ Introduction

On January 29th, 2013, Dean Kathryn VandenBosch initiated a workgroup on education as part of the CALS strategic planning process. The general charge of the workgroup is to craft “recommendations concerning teaching, training, and learning.” Specifically the workgroup was asked to identify specific tasks to be undertaken in the coming year “related to strategic positioning for our educational mission.”

The workgroup took as a starting point the mission statements of the college and the Office of Academic Affairs.

CALS Mission

To advance and share knowledge, discover solutions and promote opportunities in food and agriculture, bioenergy, health, the environment and human well-being.

CALS Office of Academic Affairs Mission

To provide each student with excellent learning opportunities that promotes personal and professional development.

The following is a summary of our considerations and recommended tasks, including suggestions for task force structure.

■ Educating a Diversity of Learners

A large part of CALS’ educational mission focuses on undergraduate students. In the conversations that the strategic planning committee’s stakeholder engagement subgroup had with undergraduates, a number of related areas emerged that students see as particular strengths of our college. First and foremost, students single out what we characterized earlier as the unique blend of research-based, hands-on teaching. This is made possible by smaller class sizes and ongoing contact with faculty, both in the classroom and as part of one-on-one research experiences. Students also appreciate the flexible curriculum and the opportunity to supplement on-campus learning with global experiences through internships and other international programs.

CALS’ prominence also relies to a significant degree on the contributions of a world-class graduate student body to our research enterprise and on the large number of highly ranked graduate programs in the college.

Our graduate programs also have significant primary and secondary impacts on our state and beyond. Primary impacts include the critical role that graduate students make to the research and—to a lesser degree—teaching mission of our college. As a result, the majority of extramural grants in CALS devote significant resources to supporting our graduate education infrastruc-

ture through research and project assistantships. These primary impacts are complemented by the important secondary impacts that our graduate students have in various arenas once they leave CALS. As faculty and educators at peer schools, such as Cornell, Colorado State or Michigan State, they train the next generation of students in the life sciences and various agricultural fields by applying their research-based knowledge for effective tech transfer and innovative products and processes.

In addition to our degree-granting educational structures, CALS has a variety of short courses, workshops, and other formal and informal educational programs with a broad scope of different topics and curricula. These include activities considered part of the college’s “instructional” functions as well as those connected to the college’s connection to UW-Extension. One of many examples is the venerable Farm and Industry Short Course (FISC) program, which for 128 years has offered a 16-week residential curriculum focused on providing applied skills in agriculture. In addition to FISC, CALS offers dozens of other short courses and workshops (often just hours or days long) for a wide array of practitioners such as food processors, agricultural producers, consultants and other information/service providers. The full range of short course and Extension learning opportunities exemplifies how our college has institutionalized the Wisconsin Idea in an educational setting. These programs translate the vibrant research culture on campus into applied skills for the Wisconsin workforce. It is critical that these educational offerings and their instructors be able to adapt quickly to current real-world problems and student/customer demand.

Through both our formal educational offerings and our more informal outreach efforts, CALS departments and centers offer a variety of continuing education opportunities that teach the science behind everyday activities to a diverse learner population. These “courses” are an important part of CALS as they demystify science by bridging research from the laboratory with applications in industry, thereby strengthening the bonds between the university and the community at large while also positively impacting the state’s economy. Despite the ability to quickly access information through the Internet, this form of knowledge-sharing continues to be an effective and efficient method to reach a variety of learners and has steadily increased over time.

What makes CALS CALS is not that we do these activities, but that we integrate them into a coherent set of practices that blurs the separation between teaching, research and service and crosses the boundaries between disciplines. At times, the breadth of our mission causes tension—should the focus of our faculty be on teaching residential or community learners? Should we aim to serve degree-seeking students or the citizens of the state? Should our limited faculty lines be directed toward areas of greatest student interest or greatest industry demand? The answer in each case is that we must balance what appear at times to be compet-

ing interests, for it is in the very combinations of the following areas that our strength lies. Indeed, tension implies that we are tied together, and this interconnectedness is key to our identity and our success.

■ Content, Delivery and Capacity

As we consider our educational mission, we begin with three key elements: Content (what do we teach and why?); Delivery (when, where, and how do we teach?); and Capacity (to whom and how much do we teach?).

Content. Intellectual adaptability and flexibility are critical skills for any graduating UW student, especially in a world where new scientific breakthroughs and the emergence of new scientific fields (genomics, nanotechnology, bioenergy, etc.) constantly change our understanding of the world and can quickly make existing knowledge obsolete. As scientific disciplines and techniques emerge, we must ensure that our educational mission extends beyond disciplinary training and envision academic structures that move toward a problem-oriented approach. We see three learning goals as particularly pertinent in this context: to educate creative problem solvers, to contribute to workforce development, and to prepare scientifically literate and culturally competent citizens. In short, as we develop the content of our curricula, we must model for our students the value of lifelong learning and growth suggested by the UP&S motto: “Come grow with us.”

Delivery. Just as we urge innovation in the content of our teaching, we must consider innovations in the delivery of that content. New modes have the potential to increase our capacity with existing audiences and to extend our reach to new audiences. As the college engages in these explorations, we urge an approach that prioritizes quality and the creative use of our finite resources. These new modes of delivery should ideally be developed in the context of other campus-wide or system-wide initiatives, such as UW-Madison Educational Innovation or UW-System Flexible Option degrees. Partnering with Extension or other units on campus would allow CALS to share resources to develop new modes of instruction or content delivery and to develop teaching modules that could simultaneously serve different audiences in Extension, short courses and other distance learning settings. We urge the college to think creatively about its role in outreach to public audiences beyond Extension. In short, we must leverage the college’s leadership and expertise in all modes of communication to a large external audience, with a targeted goal of increasing citizen literacy to become informed consumers. In keeping with the proposed new CALS tagline “Growing the Future,” our educational efforts should be as forward-thinking as our research.

Capacity. As important as content and delivery are to our educational mission and future, our workgroup contends that capacity is the area with the most leverage over the other two, since in order to increase capacity (the number and type of students we teach), one essentially has to think about both content and delivery. If we continue to teach the same material and to teach in the same way, it is difficult to increase capacity without also increasing resources (which seems unlikely in the current climate). We have chosen to begin with capacity as our entry point not to the exclusion of all else, but as a vantage point from which we can explore conversations in other areas.

In addition, of the three, capacity is the area that is most pressing on our attention. Undergraduate and graduate enrollment in CALS has increased from roughly 3,000 students in the fall of 1998 to roughly 4,000 in the fall of 2012. As student enrollment has increased, the total number of faculty in the college decreased from 360 in 1980 to fewer than 275 today. This growth affects our capacity elsewhere. For instance, can we continue our graduate or community efforts at the same level while accommodating such expansion at the undergraduate level? While the increase in enrollment clearly shows demand for CALS programs, it also creates pressures and poses its own challenges; one of the key messages of UW’s Educational Innovation (EI) initiative has been that new revenues are likely to come from reaching out to new audiences. In order to explore EI opportunities, CALS will need to identify areas where growth is both feasible and beneficial, at the same time that we strive to serve the already growing populations coming into the college.

[Note: See related charts on numbers of faculty and students in Appendix 1.]

The workgroup on education thus recommends that a key strategy for CALS in the coming years be to direct our instructional resources toward activities and policies that will increase our overall instructional capacity while maintaining instructional quality. This could include separate strategies for capacity-building within majors and for the college overall. Exploring opportunities to share the expertise of the college with non-traditional students via non-traditional teaching methods may allow for continuing capacity growth and also bring in additional revenue. Specifically, we urge the college leadership to contemplate scenarios that decouple growth or instructional capacity within departmental majors, on the one hand, and growth in credit hours provided by the college, on the other hand. It is conceivable, for instance, that CALS would cap enrollment for some of its majors in order to be able to continue to provide high-quality education, even within shrinking 101 budget environments. This is not incompatible, however, with the idea of departments—regardless of size—providing large service courses in content areas relevant to students across the college and the university. In fact, capacity building in the area of service courses (a) allows the

college to strategically invest in structures that will be rewarded by emerging campus-wide budget metrics, and (b) is much more adaptable to highly dynamic budgetary or staffing realities than more formalized structural growth in disciplinary majors. Look for ways to work across boundaries to join similar class content courses while potentially conserving instructional effort—this will have a positive effect on the student population by showcasing the breath of the entire university and hence provide a more robust experience.

■ Recommended Workgroups For 2013-14

In order to achieve our collegiate educational mission, the workgroup on education has identified three target areas of study that we recommend be considered in depth by three working groups during the coming academic year:

1. Educational Capacity Metrics
2. Use of 101-Funded Graduate Assistantships
3. Short Course Offerings and Infrastructure

The first group will look at how we measure instructional “capacity” across the college; we cannot increase our capacity if we do not have a clear set of current measures and a realistic set of future goals. The second group will look in-depth at a key practice that affects our instructional capacity, namely the use of 101-funded research assistantships and whether some of them should be converted to teaching assistantships. The third group will focus on short courses (including but not limited to the Farm and Industry Short Course) to explore this area of potential growth in capacity (and resources) for the college. Each of these three groups is described in more detail in the draft charge documents below.

In addition, we recognize three further efforts that originated prior to the strategic planning process and that will continue in the coming year.

1. Educational Innovation Director
2. Biology Major Work Group
3. Farm & Industry Short Course Task Force Report

The workgroup on education recommends continuing the role of CALS Director of Educational Innovation (currently held by Prof. Brad Barham, AAE) in order to ensure ongoing engagement with campus conversations on how to balance pursuing opportunities for the generation of new revenue with maintaining an emphasis on our core strengths and mission. The workgroup also strongly supports the continued work of the cross-college Biology Major Work Group (chaired by Associate Deans Sarah Pfatteicher in CALS and Eric Wilcots in L&S) to ensure a smooth transition plan for the Biology Major and to support incorporation of the major into long-term planning for CALS and L&S. The FISC Task Force met in 2009-10 and submitted its findings to the college at the conclusion of that year, and the Office of Academic Affairs (in which FISC is housed) continues its work on implementing the recommendations of

that committee’s report. The search for a new FISC director, who will continue the review and development process with FISC, began in early April and is scheduled to conclude by mid-summer.

■ Recommendations for Establishing a Workgroup on Educational Capacity Metrics

Our rapidly growing enrollments require us to reconsider our teaching loads. Given our split 101-2/101-4/104 faculty appointments, our diverse audiences, and our frequent cross-college course offerings, establishing a baseline or target capacity is challenging. But as campus explores moving toward responsibility-centered management, with budgets driven by instructional contributions, we would be wise to consider what metrics accurately reflect our contributions to the teaching mission of the university. CALS has a reputation on campus for low teaching loads relative to our sister colleges. We need to take this external perception seriously.

The recommended task for this workgroup is to review existing and available data and to select a set of metrics that is both appropriate for the college’s diverse mission and that captures the values and principles of the college. Academic Planning and Institutional Research compiled an overview of some available metrics in a document prepared for the Dean’s Council. It is available at: <http://apir.wisc.edu/instruction/DeansCouncil-Packet.4.13.2011.pdf>. Note that inclusion on this list does not necessarily indicate a recommendation that these documents represent the most appropriate metrics for our purposes.

Workgroup membership should include faculty and instructional staff who can represent the breadth of our departments (basic and applied; social, biological, and physical sciences; large and small) and students who can represent the breadth of our learners. The group should also include individuals who can assemble and evaluate our teaching data from multiple perspectives. We recommend close engagement with the staff in the CALS Office of Academic Affairs, the UW-Madison Office of Academic Planning and Institutional Research, and members of the University Assessment Council.

Some key questions for this group to consider include:

- What external policies and regulations limit or shape our instructional capacity? For example, what rules associated with Hatch funding affect our instructional appointments?
- Should the college seek to increase capacity across the board (by some set number or by some percentage), or to bring the tails closer to the middle of the curve (by increasing in some areas while capping or slowing growth in other areas)?
- What metrics enable us to account for quality as well as quantity in our capacity?
- How do we measure our teaching contributions to non-credit instruction (through short courses, outreach, and Extension efforts)?

- What metrics include and recognize our full array of instructional personnel (faculty, instructional staff, teaching assistants, undergraduate assistants, peer mentors, other?)
- What metrics will allow for college-wide comparisons, and yet will also recognize the different content and culture of different disciplines (e.g., labs, field study, writing-intensive courses, etc.)?
- What metrics will encourage an increase in overall capacity while also supporting the sort of low enrollment/high impact classes (independent study, internships, e.g.) that characterize the best of experiential learning that is so important to CALS?
- How much of our effort should be aimed at expanding our numbers and resources vs. capping our numbers to stay within our existing resources vs. expanding our numbers by creatively rethinking our use of current resources?

■ Recommendations for Establishing a Workgroup on the Use of 101-Funded Graduate Assistantships in CALS

In 2009, the Academic Affairs Visioning Task Force recommended a study of the advisability of converting some department-held research assistant positions to teaching assistant positions. Changes in leadership, staffing shortages and the addition of 8 FTEs of teaching assistantships via the Madison Initiative for Undergraduates put this study on a back burner, but we believe the time has come to revisit the issues.

The recommended task for this workgroup is to review the current distribution and use of 101-funded graduate assistantships in the college and to recommend a plan for the future use of these assistantships that is appropriate for the college's diverse mission and that captures the values and principles of the college.

Workgroup membership should include faculty and staff who can represent the breadth of our departments (basic and applied; social, biological, and physical sciences; large and small) and students who can represent the breadth of our learners. The group should also include individuals who can assemble and evaluate our personnel allocations from multiple perspectives. We recommend close engagement with the staff in the CALS Office of Academic Affairs, the UW-Madison Office of Academic Planning and Institutional Research, and individuals with campus financial expertise.

Some key questions for this group to consider include:

- What is the total number of FTEs of state-funded RA and TA positions across the college and how are they distributed?
- Why was funding preferentially directed toward RAs in the past?
- How much TA-like work is done under other titles, such as practica?
- How much could our teaching capacity increase if we directed more of our current resources to teaching assistants?
- What guidelines should shape our allocation of TAs and our workload expectations for them?

■ Recommendations for Establishing a Workgroup on Short Course Offerings and Infrastructure in CALS

Some short course offerings (Farm and Industry Short Course, School for Beginning Dairy and Livestock Farmers, Master Cheesemakers, etc.) are well-established and recognizable, and many such efforts generate revenue for the units that run them. But the full extent of our efforts to provide focused training related to specific career goals is unclear, as is our potential future capacity. In addition, many of these programs are run independently, that is, there is little coordination of short courses across the college. Are there infrastructure needs (distance education capabilities, registration and enrollment systems, billing procedures, etc.) that could support multiple programs?

The recommended task for this workgroup is to review the current array of short course offerings in the college and to recommend future subject offerings and/or infrastructure support that would encourage both efficient use of current resources and generation of future revenue. The recommendations should be appropriate for the college's diverse mission and should align with the values and principles of the college.

Workgroup membership should include faculty and staff who can represent the breadth of our departments (basic and applied; social, biological, and physical sciences; large and small) and students who can represent the breadth of our learners. The group should also include individuals who can evaluate our short course potential from multiple perspectives. We recommend close engagement with the staff in the CALS Office of Academic Affairs, UW Extension, the Division of Continuing Studies, and the CALS Director of Educational Innovation.

Some key questions for this working group to consider include:

- Is it possible (or advisable) to catalog the majority of the "short course" offerings in the college?
- Would current or future efforts benefit from some shared infrastructure (such as in program development, financial management, registration coordination, marketing, etc.)?
- What can we learn from colleagues across campus or around the country who engage in short course offerings?
- What, if any, connection should there be between short courses and our degree programs? (Credit transfers, for example?)
- Not all of our academic departments are engaged equally in offering short courses. Is there benefit to be gained from encouraging broader participation in such courses? Are there ways in which our basic science departments, for example, might offer short courses appropriate to their missions and expertise?

APPENDIX 3

CALS Structure Workgroup—Full Report

The CALS Structure Workgroup was charged with identifying departments where restructuring may be desirable, making recommendations concerning options, and defining criteria to assess whether CALS is organized in a way that best supports our long-term goals. UW-Madison Faculty Policies and Procedures defines the structure and function of departments, and provides processes for change. (The relevant parts of FP&P are paraphrased beneath this report.) In executing our charge we elaborate on these elements, in particular describing the broad range of departmental roles, functions and responsibilities and their connection to structure and the potential for restructuring.

■ Premises:

1. The goal of restructuring is to build or maintain strength and better use scarce resources by cooperating/collaborating/merging with other units with allied and/or complementary missions. Restructuring is a process that allows us to align our resources with the college's priorities and strengths and build units that are more than a collection of individuals.
2. Restructuring is done to help individuals flourish, to help flexible groups form as appropriate for common interests and as needed to address challenges, and to maintain core disciplinary expertise and pedagogy. Individual interests and expertise evolve over time, and rigid departmental structures may constrain innovation and personal growth. The cogent challenge in restructuring is balancing the stability of departments and the specific missions they serve with the flexibility that looser alignments provide.
3. College departments, teaching, and processes largely follow patterns established decades and in some cases, over a century ago (Attachment 1 provides a brief overview of relevant portions of UW Faculty Policies and Procedures that affect department function and stability). In many situations these have served well, especially in times of growth. However, in times of resource shrinkage, the dominant process that has shaped departments is attrition, and this is not strategic. It is unlikely that the number of state-funded faculty positions within the college will increase in the near future, and a continued decline is possible. Restructuring should complement the identification of and support for core strengths and strategic priorities. Our vision is that the structure of the college and its processes should be subject to a process of continuous review and change, and that no unit has achieved a perfection that permits its isolation from this process.
4. Budget necessities might require college administration to directly force restructuring. However, any unit is better served if its members are themselves able to identify the need for restructuring their unit, and are able to fashion that restructuring in a way that helps them best achieve excellence. We recognize that departments have long and proud histories and that reforms are difficult. However, the likelihood of returning to past glories is extraordinarily unlikely, and we must instead find ways to build strength in new ways.
5. Restructuring should not be premised on a belief that merging two (or more) small units will result in one stronger department. Although this may resolve issues of "critical mass," it should be done only if it also results in new complementarity and synergism. Other arrangements, including merging a small department into a larger one should also be considered.
6. Restructuring that leads to a reduction in the number of units within the college will benefit both administration (e.g., fewer units to track and oversee) and the remaining units (e.g., better access to limited administrative staff).
7. Current structures and processes leave departments in the position of competing, and not cooperating (allocation of resources, credit follows instructor, approval of faculty positions, etc.). Instead, structures and processes should be shifted to reward cooperation among departments, as well as rewarding activities that benefit the college as a whole but are not specifically attributable to a department (e.g., contributions to trans-departmental majors). In the long term, this leads to a culture where there is a focus on intellectual communities and cooperative units that allows us to better pursue integrative, interdisciplinary, and mutually beneficial activities.
8. To the extent feasible, the college should find ways to support structure initiatives, including identifying benefits of creative restructuring and rewarding initiatives that generate savings, reduce inefficiencies, provide a higher level of benefit to college stakeholders, or promote more effective research and instruction. To the extent that monetary

savings or efficiencies are realized, these should generally flow back to the generating departments to support their innovations. Other means of support include facilitating cross-departmental and cross-college discussions, working with departments on issues of space and facilities, and supporting personnel shifts. Clear and consistent benchmarks and metrics will be necessary both for departments to know what college goals are and for the college to reward excellence.

9. The committee has not delineated specifics with respect to outreach and extension, though this is also a consideration in departmental function and structure. UWEX recently adopted a policy document concerning the evaluation of individual state specialists. While this does not address their role in and contribution to college departments, it provides a clear indication of the kinds of activities valued by Extension. It will be in the best interest of the college and UWEX to extend these rubrics so they can be used in departmental level evaluation of contributions.

It is also important to recognize that Extension has its own separate mission and agenda, though a significant amount of Extension work is integrated into the college. The orientation of Extension is to invest in people and programs that will:

- address important needs of stakeholders (businesses, communities, families, etc.);
- provide clear evidence that impacts have occurred;
- use holistic approaches such as multi-disciplinary teamwork and linkages to clusters of disciplines.

In the long term, it will be helpful to compare Extension expertise with new and emerging CALS themes to determine how Extension teams, centers, and other structures fit the themes.

■ Types of Restructuring:

- Sharing some facilities or administrative services (e.g., some departments share IT services)
- Sharing all administrative services (i.e., forming a “hub”)
- Sharing instructional programs (e.g. Community and Environmental Sociology and Sociology, Microbiology Doctoral Training Program)
- Sharing courses, cross-listing courses, co-teaching courses, teaching across departments and programs
- Sharing faculty positions (affiliate, or joint appointments)

- Forming collaborative units (e.g., but not exclusively, centers) with shared vision, goals and timeline
- Blending with departments in other colleges (e.g., Genetics)
- Combining departments (e.g. Forest Ecology and Management with Wildlife Ecology)
- Dissolving department and moving faculty to appropriate homes (e.g., Continuing and Vocational Education)

■ Reasons to consider restructuring:

- If disciplines have evolved to a degree that new boundaries or combinations could enhance potential.
- Stakeholder needs, interests, or support have changed such that new alignments might better serve them.
- Restructuring allows departments to recruit and retain excellent faculty, staff and students; to maintain a vibrant department where members can do their best research, teaching/learning, outreach, and service.
- The size of the department has shrunk or is approaching critical size thresholds wherein its performance may be impaired:
 - Departments need sufficient size to provide depth and excellence in undergraduate and graduate education opportunities that will attract the best students.
 - Administrative systems require a level of expertise, training, and retraining impossible for resource-limited support staff members in a small department to provide.
 - Shared governance requires sufficient faculty resources to be involved in hiring, mentoring, preparing tenure dossiers, leadership (e.g. department chair, associate chair), participation in college and university governance, etc.
 - Departments require sufficient numbers of faculty and support staff to manage undergraduate and graduate programs, graduate recruitment, fundraising, communications, planning, assessment.

■ Factors in Consideration of Restructuring:

We have identified a set of broad indicators about when it is appropriate for a department to consider restructuring (solid squares). However, it is challenging to define universal and specific measures of scholarly activity and productivity in the evaluation of a department for several reasons. Some measures of departmental performance should be judged relative to norms in their field, though the norms will vary widely across the college. Measures such as extramural funding in a department merely tabulate the results of a collection of individuals who could be

organized in other ways, not how effectively they function as a unit. We may come to different conclusions about the measures of departmental performance if they are looked at as simple aggregate values versus aggregate values divided by its number of faculty FTEs or state support for a department. This dilemma exists for most of the readily determined metrics of departmental performance, shown below as open squares.

Broad Indicators

- Inadequate department infrastructure/administrative support due to size
- Inability to address governance, instructional, outreach, service needs
- High allied programmatic strength exists elsewhere on campus or regionally
- Duplicative facilities, redundant activities
- Low stakeholder interest and demand for research, education, outreach
- Department has experienced movement of significant numbers of professors from the department to another with similar disciplinary orientation

Specific Metrics (in comparison to similar departments and/or other college units)

- Number of majors or advisees (grad, undergrad, non-departmental programs)
- Number of credits (grad and undergrad) taught
- Federal and nonfederal funding; generated indirect costs
- Alumni and industry support (e.g., unrestricted gifts)
- Scholarly output, as expected for the discipline (e.g., peer-reviewed journal articles, citation indices, national rankings)
- Number of person-contact hours resulting from extension/outreach activities

Recommendations

1. The number of state-supported faculty FTEs is an important indicator of department viability. Any department with low numbers should periodically review both the general indicators for restructuring (solid bullets) and specific measures of performance (hollow bullets).
2. CALS should encourage and reward cross- and multi-departmental initiatives by supporting cooperation between departments and creation of interest-area groups that transcend departments. Cooperation between individuals in the college and on campus is ongoing and active. To the extent possible this should be expanded and rewarded.
3. CALS should support new structures by facilitating discussions and, to the extent feasible, providing restructuring incentives that generate operational efficiencies or enhance the college's ability to fulfill its mission within a land-grant university.
4. This workgroup and this document are focused on departments. However, many of the issues considered here are relevant to centers, institutes, and other elements of the college, and we recommend conducting a similar study of those structures.

Paraphrase of relevant portions of Faculty Policies and Procedures

Chapter 5 – Departmental Faculties

- 5.01. **Department:** A department consists of a group of faculty members... having common or closely related scholarly interests
- 5.02. **Departmental Restructuring:** Broad guidelines for restructuring... shall be developed by UAPC. Each college shall develop its own criteria.
- 5.11. **Functions:** Departmental faculty... has jurisdiction over all the interests of the department... and shall be responsible for teaching, research, and public service.
- 5.13. **Affiliations:** An affiliation allows a faculty member or a member of the academic staff to be associated with a department without governance rights or a continuing departmental commitment.
- 5.14. **Faculty Transfers Between Departments:** A faculty member may request transfer of his or her department's continuing commitment in his/her tenured appointment on professional or academic grounds.