College of
Agricultural & Life Sciences
UNIVERSITY OF WISCONSIN–MADISON

CALS Organizational Redesign Committee

Initial Design Proposals for Consideration

August 29, 2017

Purpose
To share the Organizational Redesign Committee's work to date and gather constructive feedback on preferred models of organization and resource allocation.

Introduction
CALS is a global leader in agriculture, life sciences, food, and the environment. The success of our college hinges upon our recognized excellence in research, a base from which we affect Wisconsin and the world through sharing new knowledge and innovations in teaching, extension, outreach, and engagement with students, partners, and communities. Though we have been challenged as a campus and college over the last decade, we retain world-renowned faculty, committed staff, exceptional students and a strong reputation among our peer universities and many stakeholders.

The college holds a unique position in science and among land-grant colleges nationally. We bring together basic, applied and transformational research that spans agriculture, life and human sciences and food and the environment. In this, we create new knowledge and innovate in ways that lead in science and benefit people and society. Our research is the basis for exceptional and diverse teaching, extension and outreach that transform lives and communities.

Despite our recognized strengths and vibrant intellectual communities, we face real challenges. In some cases, these reflect the broader context such as deductions in GPR support for higher education, increased scrutiny of core campus culture and policy (e.g., tenure and faculty governance), additional regulatory and administrative compliance and uncertainty in the future of federal research funding. Other challenges come as a result of a changing campus and higher education environment. For example, UW-Madison's adoption of a responsibility-centered budget model driven by research and teaching metrics will force programmatic shifts. Also, our campus and peer-institutions have increased efforts to cultivate revenue through competitive federal funding and from non-traditional sources such as summer teaching, professional certificates and programs, and philanthropy. Retaining excellence in this new operating environment would alone justify an in-depth appraisal of our business model and collegiate structure. However, CALS-centric factors and trends point to eroding strength and the need to critically assess future direction and operations.

- CALS has lost faculty while the campus as a whole has gained. Since 2000, the total number of CALS faculty decreased from 292.4 to 265.9 (-9%), having peaked during this period at 303.9 in 2003.[1] The total number of faculty on campus increased from 2,070.4 to 2,174.8 (+5%). This description excludes the recent departure of 11 faculty in LA and URPL to L&S.
- Our student numbers during that period have risen sharply from 3,148 to 4,676 (+49%)[2] Moreover, teaching activity has increased: Credits follow instructor (CFI)

[1] APIR Department Planning Profile spreadsheet, historic data for Total Faculty Roster (FTE total of all tenure/tenure-track faculty commitments within department), Fall 2000-2016
[2] APIR Department Planning Profile spreadsheet historic data for sum of Total Undergraduate Majors Headcount-Campus and Total Graduate Majors Headcount-Campus (Head count of all undergraduate/graduate students having declared a major within department – includes all students, regardless of school or college affiliation), Fall 2000-2016

has gone from nearly 65,000 in 2012 to over 66,000 in 2016 (+2%).[3] CFI peaked in 2015 at 69,157.

- Research expenditures in 2000, federal and non-federal totaled $45.24 million. In 2016 to the total was $64.25 million.[4] However, accounting for inflation would translate into relatively level spending.
- The college operates under a legacy budget model that provides few-to-no rewards for innovation, nor does it provide a predictable model to redirect resources to growing areas or programs.
- Our partnership with Cooperative Extension (31.8 FTE across 14 departments[5]) will change as Extension reorganizes and prioritizes its mission foci for the future.
- Most CALS departments and programs believe their units are understaffed and lacking in the resources to meet current needs, much less invest in new initiatives that might grow revenues. There is frustration in how vacant faculty lines are prioritized and allocated.

This situation led all but one of the department chairs in CALS to endorse a letter to the dean requesting change to ensure the future of the college. The chairs asked the dean to initiate "*a comprehensive review of this historical portfolio and seek implementation of a redistribution of college resources in a manner that will restore programmatic excellence in core, strategic areas of strength, productivity, and impact.*" The letter cites the CALS Strategic Framework's discussion of collegiate restructuring, which focused on optimal unit metrics, and asks the dean to, "*appoint and charge a CALS restructuring committee and provide them with milestones by which their work would be completed and adopted by the college section.*" In response and in building on the 2013 CALS Strategic Framework, the dean charged the Organizational Redesign Committee ("Redesign Committee") to develop alternative models for the college's future. Specifically, the committee was asked to

- Evaluate local and global trends, UW-Madison metrics, and peer institutions that demonstrate factors affecting the college's vitality now and into the future;
- Analyze key functions to invest in because of comparative advantage and/or strength;
- Prioritize what needs to be divested, cut and rearranged in the future to meet the desired state;
- Based on these findings, propose one or more structures, composed of robust departments and programs of appropriate critical mass, for CALS;
- Determine benefits and implications (including revenue generation and cost implications) of the recommended changes;
- Outline a blueprint for implementing the recommended changes, including mechanisms for resource allocation that support and incentivize strategic focus to maximize the strength of the college and its component units.

Three key deliverables from the Redesign Committee will include:

- Conceptual design of a restructured college including the following elements:

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[3] APIR information on Credits Follow Instructor available at https://apir.wisc.edu/instruction-credits.htm; no data for before 2012 posted.

[4] APIR Department Planning Profile spreadsheet, historic data for Extramural Awards Federal and Non-federal (Extramural Awards - Federal. Federal awards from August through July of each year on all activities; includes funds 144, 145, 146, 147, and 148; Non-federal includes funds 133, 134, 135, 161, and 162)

[5] Table 1, this document

    - A summary of CALS strengths and comparative advantages that should be maintained, grown and leveraged. Provide rationales for these priorities.
    - A summary of CALS activities or components that could be placed at low priority or dropped. Provide rationales.
    - A proposed structure (or a short list of options) for CALS that builds on CALS strengths and comparative advantages and that meets the design criteria.
    - An analysis of benefits and implications (including cost) of proposed changes.
- Guidelines for resource allocation that will enable departmental planning and decision-making, and incentivize the maintenance of robust, resilient departments over time.
- Propose a blueprint for implementation of a new structure. Processes to be considered may include decision-making, incentives, and sequencing of changes.

Committee Process and Work

The Redesign Committee began its work in December 2017 with a group composed of two co-chairs and representatives from across CALS academic and administrative areas.[6] Since then the committee has spent its time exploring five major avenues: 1) Analyzing current and future disciplinary trends that can drive a compelling vision for the future; 2) Collecting, analyzing and compiling standardized departmental data to help discern particular areas of strengths and weaknesses; 3) Conducting research of peer institutions that have recently reorganized to learn lessons and collect best practices; 4) Establishing and testing alternative organizational "prototype" models to narrow the possible types of viable options; and 5) Developing and negotiating with the Dean's Office for a shared resource allocation model that can support design options. From these areas of work came the deliverables presented in this document. Once the proposed design models are discussed and vetted, it is the intention of the committee to begin work on its last deliverable, the implementation blueprint for the proposed restructuring of the college.

Design principles

Key to the committee's work was the emergence of evaluative design principles. These principles formed the basis for assessing both resource allocation models and options for collegiate structures. These principles were informed by the CALS Strategic Framework (notably the mission, vision, and guiding principles), the committee's deliberations, feedback from CALS administration, chairs, and governance committees, and their natural evolution through testing them against potential future CALS designs. The design principles include:

1. Respect the importance and implications of shared governance to any new CALS structure. Faculty Policies and Procedures (FPP) Chapter 5 outlines the central role of departments to our community. Notably, section 5.02 deals specifically with department restructuring, while 5.14 addresses changing a faculty member's department home and 5.20 addresses department-like bodies. Achieving any future structure will require adherence to FPP (and not just those sections noted here).
2. Advance vibrant units that pursue excellence in research, teaching, extension, and outreach that address future knowledge and problem-solving needs. We cannot

[6] Brian Fox, Biochemistry; Paul Fricke, Dairy Science; Irwin Goldman, Horticulture; Kelley Harris-Johnson, Biology; Sarah Marcotte, CALS Research Division; Denise Ney, Nutritional Sciences; Susan Paskewitz, Entomology; Francisco Pelegri, Genetics; Mark Rickenbach, Forest and Wildlife Ecology; Troy Runge, Biological Systems Engineering; Leann Tigges, Community and Environmental Sociology; Terri Wipperfurth, Agricultural and Applied Economics

ignore our existing strengths, yet it is easy to get stuck in a rearview window assessment of strengths and weaknesses. To ensure that our college structure is forward-looking, CALS will incentivize and foster a collaborative environment that responds to future changes.

3. Promote the identity of disciplines, while recognizing that disciplines and the college as a whole evolves. Our excellence as a college and campus is grounded in our intellectual and disciplinary depth. Diluting our disciplinary strength can make us less adaptable when research directions change. We want faculty and scientist who evolve with the disciplines. Departments should be similarly adaptable and forward-looking.
4. Increase budgetary authority and accountability at the unit[7] level to foster flexible, locally-relevant, and responsible decision-making. A chief complaint of chairs and departments is the inability to adequately plan and address critical needs. Retaining some portion of faculty vacancies, for example, would allow units greater discretion. However, with such autonomy would come a greater expectation to manage retentions and budget reductions locally with decreased reliance on the college. Resources at the college level could facilitate new initiatives (e.g., cluster hires) and fix inequities beyond the capacity of an individual unit.
5. Align teaching and student support with student needs and interest. Our goal should be to best prepare students for a future less dependent on disciplinary expertise and more reliant on a strong thinking, research, and application mindset. CALS is well-positioned to guide student learning and development through teaching, advising, and mentoring. However, we are expected to train students effectively and use our resources wisely to maximize impact and public benefit. Small class sizes, small majors, and individual experiences for students are important, but they must be balanced with other activities and programs that grow the college's teaching portfolio.
6. Be mindful of those who support and benefit from the college's activities. The college has a diverse funding base that depends on federal, state, private, and philanthropic support for short (e.g., grants) and long-term (e.g., buildings) investments. Our ability to grow depends on our ability to cultivate and compete for resources. At the same time, the college and its faculty have a responsibility to serve a diverse public, some of whom lack the social, political, and financial capital to easily be heard.
7. Retain our special partnership with Cooperative Extension to benefit Wisconsin. Our partnership has improved practices and fostered innovation. As CALS and Cooperative Extension change and evolve, we must be adaptive to leverage our relationship and continue to serve the state and benefit clients, learners, and communities.
8. Maintain a home and a future in CALS for those in CALS. The diverse nature of the college can create strains and competing interests. However, our breadth of intellectual endeavors is a signature strength. CALS should emerge from restructuring as an exciting, collaborative, and rewarding home for current and future faculty, staff, and students.
9. Match administrative and leadership needs to any new resource allocation and structural model. Compared to similar colleges, CALS is administratively lean, as is the campus. However, changes in how resources are allocated or units are

[7] Depending on future collegiate structure, unit might be a department or a "division" comprised of departments.

structured may necessitate new administrative, leadership, and/or governance arrangements. Such changes must be designed to foster success in the future.

Three organizational designs for consideration

Through this process and using these principles, the Redesign Committee developed three models of organizational design. The Redesign Committee did not recommend the expansion or reduction of specific units within the college, though we recognize that such changes will be critical for the college's future. Rather, the committee focused on evaluating and proposing organizational models by which the college faculty and staff would play the primary role in the future shape and size of each academic unit through new structures of college departments that are endowed with more autonomy in faculty hiring. In other words, the models proposed here create a process where on-the-ground governance decisions about the future disposition of specific academic disciplines will be made at the department or unit level. This is the locus likely to have the best intelligence about the future of academic disciplines and where the most pressing needs can be addressed to fulfill a department or unit's strategic plans.

1. The ***Mergers Model*** explores a limited number of mergers between departments. The model provides a voluntary way to create critical mass for departments with similar expertise from current departments with fewer than 15 faculty FTEs (all sources), less than 100 undergraduate majors, and less than 25 graduate majors. Opportunities for synergistic teaching and research interactions in merged departments was viewed as another favorable outcome. Critical mass provides more faculty to share in the essential operations of a department, potentially increases the numbers of undergraduate and graduate students taught, and may assist in recruitment of new faculty, the preparation of multi-investigator grants, and the consolidation and invigoration of curricula. The merger model embraces campus departmental governance (FP&P Chapter 5), while the college provides administrative support needed to assure the transition to larger, synergistic departments. Various incentives to merge would need to be provided, and could be negotiated on a case-by-case basis. Once a merger is "complete," no special or additional administrative or governance arrangements are necessary. Impediments to the merger model include loss of departmental identity after merger, asymmetry in teaching and research contributions of the potential partners in the merger, changes in stakeholder recognition, and possibility that small departments will be created or remain after logical partnerships have been established. See table 2.

2. The ***Theme-based Divisional Model*** places departments according to areas of thematic expertise into broader groupings. This model promotes more freedom and flexibility in that departments and centers are retained but placed in thematic divisions, such as plant science, environmental science or basic science. Departments and centers may join together with divisional partners to replace and rehire new faculty and to retain existing faculty, or they may operate individually to pursue these goals. Salary savings from faculty vacancies would be made available to departments and centers to achieve these objectives. Department and center chairs would represent their units on a divisional council which would regularly consult about partnerships in hiring, retention, administrative efficiencies, and academic majors. Importantly, the divisional model energizes local decision-making and establishes a conduit for local governance processes to chart the future of the college based on the deep expertise of faculty and staff. The divisional model removes the Academic Planning Council from its role as *de facto* decision maker in faculty hiring, returning autonomy in faculty hiring to the

departments and divisions. Further, the divisional model removes the college's administration from full responsibility for faculty retentions, placing the burden for this important activity primarily with the department and division. See table 3.

3. The ***Research-based Divisional Model*** places departments under the umbrellas of broad research foci. This model consolidates the diverse academic disciplines of the current departments into four divisions based upon common research areas anticipated to address the most critical and important scientific challenges of the 21st century. The groupings align with CALS Strategic Priorities by establishing a tangible framework to support and promote more integrated research, teaching, extension, and outreach activities. The four divisions of Food Systems, Sustainable Ecosystems, BioSciences, and Social Sciences will continue to support academic disciplines, while improving coordination and shared resources that serve as the foundation for divisional priorities. Divisions are empowered to organize in a way that best meets the needs and priorities of their units, for example through consolidating administrative overlap and advising, shared instrumentation facilities, consolidating majors and, potentially, the merger of departments. A Division Steering Committee will guide the shared and synergistic activities of the division, with a faculty member serving as a "Divisional Coordinator," facilitating the implementation of the Steering Committee's vision. Each division will have a degree of budgetary autonomy for shared operations and administration across the departments and will help evaluate the priorities for faculty hiring retention in the divisions units. The principal advantage of this model is establishing interdisciplinary connections among faculty, departments, centers, and the campus at large, which will foster ground-breaking scientific innovation in the decades to come. See table 4.

Each of these design variations are described in sub-team reports beginning on page 12. The reports provide a brief review of problems addressed, relative advantages, incentives, budget implications, stakeholder perceptions, student impacts, and supporting metrics. (These reports were independently developed and vary somewhat in their focus and level of detail.)

Resource allocation proposal

The models proposed by the Redesign Committee are predicated on (1) a return to departments of at least 50% of the CALS 101 portion of salary savings from faculty vacancies and (2) the authority to initiate faculty recruitment using these dollars. The Dean's Office has agreed that such a return of 101 funding is acceptable.

The details of how a department would obtain a Position Vacancy Listing (PVL) to begin recruitment for a new faculty member have not yet been established, but the Redesign Committee recommends removing the Academic Planning Council (APC) from the role as arbiter of such decisions. Therefore, the models contained here are based on the idea that a unit receiving returned Fund 101 faculty salary dollars will be able to immediately recruit for a new position, provided they can assemble the necessary funds or partner with the college to provide the necessary funds. It will of course be necessary for the dean to sign off on any recruitment, but the models proposed here assume that faculty recruitments within the scope of the department or unit's strategic plan will be approved.

Table 1: Data on CALS Current Departments.
Standardized data from the University of Wisconsin Academic Planning and Institutional Research Department Planning Profiles**.** Data are five-year averages (2012-2016).
These data are often used to make comparisons of departments and programs on campus, and also have underlying implications for resource allocation. The Redesign Committee use these data for comparison purposes throughout this document, while acknowledging these data do not fully represent the contribution of departments to all aspects of the college mission.

Department	Total Faculty Roster	Faculty on 101	Faculty on 104/143	Academic Staff on 101 Funds	University Staff on 101	CFI (standard deviation)	Undergraduate Majors	Graduate Majors	Extramural Awards (standard deviation)
AAE	21.3	13.9	3.3	2.1	2.3	5,214 (407)	125.2	59.8	1,839,914 (722,640)
Agron	16.7	9.2	3.4	7.5	2.5*	1,454 (102)	37	10.8	3,447,309 (754,975)
An Sci	16.6	15	1	9.5	11.6	3,520 (360)	186.8	31.6	1,334,127 (302,964)
Bact**	17.9	14.2	0	10.8	8.1	8,069 (348)	999	111.4	5,670,022 (2,217,381)
Biochem	31.1	22.1	0	8	18.2	8,073 (487)	401.8	112	22,758,720 (4,226,560)
BSE	14.7	8.8	2.2	1.7	3.6	2,565 (284)	147.2	39.8	2,022,540 (550,809)
C&ES	11.1	5.3	2.4	2.4	2.3	2,503 (469)	65.6	2.2****	736,696 (438,338)
Dairy Sci	11.6	8.5	3.5	7.3	21.5*	1,286 (197)	75.4	34.2	2,083,449 (819,936)
Ento	12.5	7.9	2.3	1.5	0	2,417 (124)	10	28.6	1,727,027 (436,174)
F&WE	18.1	15	2.2	2.1	0	4,499 (290)	142.6	55	5,151,382 (819,029)
Food Sci	10.2	8	1.8	6.9	15.5*	2,788 (173)	141.8	43.8	1,066,580 (780,337)
Genetics	16.6	10.7	0	5.8	2.7	3,125 (198)	297.8	60.8	3,955,032 (1,254,759)
Hort	11.3	7.2	2.5	5.6	2.3	1,590 (60)	40.4	11.6	5,980,249 (2,456,345)
LSC	7.4	4.1	0.8	4.5	2.7	3,618 (455)	166.4	30.4	348,123 (171,775)
Nutri Sci	10.7	9.8	0.7	3.6	4	9,102 (1,067)	299	24.4	3,743,469 (359,745)
Plant Path	13.4	7.9	2.8	5.4	4*	2,157 (287)	20.4	29	2,929,161 (793,209)
Soils***	16	10.5	2.9	3.8	4.1	2,113 (394)	84.4	21.4	3,899,325 (978,906)
Total	257.2	178.1	31.8	88.5	105.4	64,093	3240.8	704.6	68,693,125

Total faculty roster is not necessarily the sum of 101 and 104/143 faculty as it can include faculty on other funds (e.g. USDA faculty) and cluster hires.
Extramural Awards includes federal and non-federal.
*Due to "budget authority" on the 101 side, FTE is inflated. Units with budget authority are required to generate revenue on fund 136 to offset the fund 101 expenses.
** Includes all Microbiology and CALS Biology majors, and staffing for the Biology Major.
***Includes all Soils majors and CALS Environmental Science majors.
****Joint PhD with L&S Sociology.

Table 2: A View of CALS Departments after Mergers

Department	Total Faculty Roster	Faculty on 101	Faculty on 104/143	Academic Staff on 101 Funds	University Staff on 101	CFI (standard deviation)	Undergraduate Majors	Graduate Majors	Extramural Awards (standard deviation)
AAE	21.3	13.9	3.3	2.1	2.3	5,214 (407)	125.2	59.8	1,839,914 (722,640)
Bact**	17.9	14.2	0	10.8	8.1	8,069 (348)	999	111.4	5,670,022 (2,217,381)
Biochem	31.1	22.1	0	8	18.2	8,073 (487)	401.8	112	22,758,720 (4,226,560)
C&ES	11.1	5.3	2.4	2.4	2.3	2,503 (469)	65.6	2.2****	736,696 (438,338)
Genetics	16.6	10.7	0	5.8	2.7	3,125 (198)	297.8	60.8	3,955,032 (1,254,759)
LSC	7.4	4.1	0.8	4.5	2.7	3,618 (455)	166.4	30.4	348,123 (171,775)
Nutri Sci	10.7	9.8	0.7	3.6	4	9,102 (1,067)	299	24.4	3,743,469 (359,745)
Merger 1	***41.4***	***24.3***	***8.7***	***18.5***	***8.8***	***5,201 (315)***	***97.8***	***51.4***	***12,356,719***
Agron	16.7	9.2	3.4	7.5	2.5*	1,454 (102)	37	10.8	3,447,309 (754,975)
Hort	11.3	7.2	2.5	5.6	2.3	1,590 (60)	40.4	11.6	5,980,249 (2,456,345)
Plant Path	13.4	7.9	2.8	5.4	4*	2,157 (287)	20.4	29	2,929,161 (793,209)
Merger 2	***28.2***	***23.5***	***4.5***	***16.8***	***33.1***	***4,806 (329)***	***262.2***	***65.8***	***3,417,576***
An Sci	16.6	15	1	9.5	11.6	3,520 (360)	186.8	31.6	1,334,127 (302,964)
Dairy Sci	11.6	8.5	3.5	7.3	21.5*	1,286 (197)	75.4	34.2	2,083,449 (819,936)
Merger 3	***40.9***	***27.3***	***6.9***	***12.4***	***23.2***	***7,466 (274)***	***373.4***	***105***	***6,988,445***
BSE	14.7	8.8	2.2	1.7	3.6	2,565 (284)	147.2	39.8	2,022,540 (550,809)
Food Sci	10.2	8	1.8	6.9	15.5*	2,788 (173)	141.8	43.8	1,066,580 (780,337)
*Soils****	16	10.5	2.9	3.8	4.1	2,113 (394)	84.4	21.4	3,899,325 (978,906)
Merger 4	***30.6***	***22.9***	***4.5***	***3.6***	***0***	***6,916 (358)***	***152.6***	***83.6***	***6,878,409***
Ento	12.5	7.9	2.3	1.5	0	2,417 (124)	10	28.6	1,727,027 (436,174)
F&WE	18.1	15	2.2	2.1	0	4,499 (290)	142.6	55	5,151,382 (819,029)
Total	257.2	178.1	31.8	88.5	105.4	64,093	3240.8	704.6	68,693,125

Total faculty roster is not necessarily the sum of 101 and 104/143 faculty as it can include faculty on other funds (e.g. USDA faculty) and cluster hires.
Extramural Awards includes federal and non-federal.
*Due to "budget authority" on the 101 side, FTE is inflated. Units with budget authority are required to generate revenue on fund 136 to offset the fund 101 expenses.
** Includes all Microbiology and CALS Biology majors, and staffing for the Biology Major.
***Includes all Soils majors and CALS Environmental Science majors.
****Joint PhD with L&S Sociology.

Table 3: A View of CALS Departments with Thematic Divisions

Department	Total Faculty Roster	Faculty on 101	Faculty on 104/143	Academic Staff on 101 Funds	University Staff on 101	CFI (standard deviation)	Undergraduate Majors	Graduate Majors	Extramural Awards (standard deviation)
Division 1	***53.1***	***40.3***	***8.5***	***25.4***	***52.2***	***10,159 (360)***	***551.2***	***149.4***	***6,506,696***
An Sci	16.6	15	1	9.5	11.6	3,520 (360)	186.8	31.6	1,334,127 (302,964)
BSE	14.7	8.8	2.2	1.7	3.6	2,565 (284)	147.2	39.8	2,022,540 (550,809)
Dairy Sci	11.6	8.5	3.5	7.3	21.5*	1,286 (197)	75.4	34.2	2,083,449 (819,936)
Food Sci	10.2	8	1.8	6.9	15.5*	2,788 (173)	141.8	43.8	1,066,580 (780,337)
Division 2	***46.6***	***33.4***	***7.4***	***7.4***	***4.1***	***9,029 (489)***	***237***	***105***	***10,777,734***
Ento	12.5	7.9	2.3	1.5	0	2,417 (124)	10	28.6	1,727,027 (436,174)
F&WE	18.1	15	2.2	2.1	0	4,499 (290)	142.6	55	5,151,382 (819,029)
*Soils***	16	10.5	2.9	3.8	4.1	2,113 (394)	84.4	21.4	3,899,325 (978,906)
Division 3	***39.8***	***23.3***	***6.5***	***9***	***7.3***	***11,335 (464)***	***357.2***	***90.2***	***2,924,733***
AAE	21.3	13.9	3.3	2.1	2.3	5,214 (407)	125.2	59.8	1,839,914 (722,640)
C&ES	11.1	5.3	2.4	2.4	2.3	2,503 (469)	65.6	2.2****	736,696 (438,338)
LSC	7.4	4.1	0.8	4.5	2.7	3,618 (455)	166.4	30.4	348,123 (171,775)
Division 4	***41.4***	***24.3***	***8.7***	***18.5***	***8.8***	***5,201 (315)***	***97.8***	***51.4***	***12,356,719***
Agron	16.7	9.2	3.4	7.5	2.5*	1,454 (102)	37	10.8	3,447,309 (754,975)
Hort	11.3	7.2	2.5	5.6	2.3	1,590 (60)	40.4	11.6	5,980,249 (2,456,345)
Plant Path	13.4	7.9	2.8	5.4	4*	2,157 (287)	20.4	29	2,929,161 (793,209)
Division 5	***45.2***	***34.7***	***0.7***	***20.2***	***14.8***	***20,296 (923)***	***1595.8***	***196.6***	***13,368,523***
*Bact***	17.9	14.2	0	10.8	8.1	8,069 (348)	999	111.4	5,670,022 (2,217,381)
Genetics	16.6	10.7	0	5.8	2.7	3,125 (198)	297.8	60.8	3,955,032 (1,254,759)
Nutri Sci	10.7	9.8	0.7	3.6	4	9,102 (1,067)	299	24.4	3,743,469 (359,745)
Division 6 (Biochem)	***31.1***	***22.1***	***0***	***8***	***18.2***	***8,073 (487)***	***401.8***	***112***	***22,758,720 (4,226,560)***
Total	257.2	178.1	31.8	88.5	105.4	64,093	3240.8	704.6	68,693,125

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***Includes all Soils majors and CALS Environmental Science majors.
****Joint PhD with L&S Sociology.

Table 4: A View of CALS Departments with Research Divisions

Department	Total Faculty Roster	Faculty on 101	Faculty on 104/143	Academic Staff on 101 Funds	University Staff on 101	CFI (standard deviation)	Undergraduate Majors	Graduate Majors	Extramural Awards (standard deviation)
BioSciences Division	***76.3***	***56.8***	***0.7***	***28.2***	***33***	***28,369 (1,020)***	***1997.6***	***308.6***	***36,127,243***
*Bact***	17.9	14.2	0	10.8	8.1	8,069 (348)	999	111.4	5,670,022 (2,217,381)
Genetics	16.6	10.7	0	5.8	2.7	3,125 (198)	297.8	60.8	3,955,032 (1,254,759)
Nutri Sci	10.7	9.8	0.7	3.6	4	9,102 (1,067)	299	24.4	3,743,469 (359,745)
Biochem	31.1	22.1	0	8	18.2	8,073 (487)	401.8	112	22,758,720 (4,226,560)
Sustainable Ecosystems Division	***46.6***	***33.4***	***7.4***	***7.4***	***4.1***	***9,029 (489)***	***237***	***105***	***10,777,734***
Ento	12.5	7.9	2.3	1.5	0	2,417 (124)	10	28.6	1,727,027 (436,174)
F&WE	18.1	15	2.2	2.1	0	4,499 (290)	142.6	55	5,151,382 (819,029)
*Soils****	16	10.5	2.9	3.8	4.1	2,113 (394)	84.4	21.4	3,899,325 (978,906)
Food Systems Division	***94.5***	***64.6***	***17.2***	***43.9***	***61***	***15,360 (844)***	***649***	***200.8***	***18,863,415***
Agron	16.7	9.2	3.4	7.5	2.5*	1,454 (102)	37	10.8	3,447,309 (754,975)
An Sci	16.6	15	1	9.5	11.6	3,520 (360)	186.8	31.6	1,334,127 (302,964)
BSE	14.7	8.8	2.2	1.7	3.6	2,565 (284)	147.2	39.8	2,022,540 (550,809)
Dairy Sci	11.6	8.5	3.5	7.3	21.5*	1,286 (197)	75.4	34.2	2,083,449 (819,936)
Food Sci	10.2	8	1.8	6.9	15.5*	2,788 (173)	141.8	43.8	1,066,580 (780,337)
Hort	11.3	7.2	2.5	5.6	2.3	1,590 (60)	40.4	11.6	5,980,249 (2,456,345)
Plant Path	13.4	7.9	2.8	5.4	4*	2,157 (287)	20.4	29	2,929,161 (793,209)
Social Sciences Division	***39.8***	***23.3***	***6.5***	***9***	***7.3***	***11,335 (464)***	***357.2***	***90.2***	***2,924,733***
AAE	21.3	13.9	3.3	2.1	2.3	5,214 (407)	125.2	59.8	1,839,914 (722,640)
C&ES	11.1	5.3	2.4	2.4	2.3	2,503 (469)	65.6	2.2****	736,696 (438,338)
LSC	7.4	4.1	0.8	4.5	2.7	3,618 (455)	166.4	30.4	348,123 (171,775)
Total	257.2	178.1	31.8	88.5	105.4	64,093	3240.8	704.6	68,693,125

Total faculty roster is not necessarily the sum of 101 and 104/143 faculty as it can include faculty on other funds (e.g. USDA faculty) and cluster hires.
Extramural Awards includes federal and non-federal.
*Due to "budget authority" on the 101 side, FTE is inflated. Units with budget authority are required to generate revenue on fund 136 to offset the fund 101 expenses.
** Includes all Microbiology and CALS Biology majors, and staffing for the Biology Major.
***Includes all Soils majors and CALS Environmental Science majors.
****Joint PhD with L&S Sociology.

Mergers Model

Model Description:

This model addresses perceived problems with size of departments by merging some departments. This model assumes a new resource allocation model offered by the CALS administration and creates no new governance structures. The model includes a set of financial incentives to foster departmental and curriculum changes that would reduce the current 17 departments to a smaller number. Department mergers would be carried out according to FP&P Chapter 5 and thus be voluntary, with incentives provided by the Dean's office.

For operational purposes, the assumption of the mergers model is to create a critical mass for departments with similar expertise from current departments with fewer than 15 faculty FTEs (all sources), less than 100 undergraduate majors, and less than 25 graduate majors. (See Table 1 for a "snapshot view" of the current CALS departments on these dimensions.) Although the committee examined a number of potential merger options, the size metric could not be optimized across all departments in the college while also maintaining strong overlaps of scholarly focus in some merged departments. Thus, creation of opportunities for synergistic interactions in merged departments was considered to be another important consideration.

Under a metric-based budgetary model, every department theoretically has the opportunity to grow based on success in meeting or extending established performance metrics. The CALS Dean would retain resources to invest in units to ensure strategic goals are achieved.

The merger model embraces campus departmental governance via FP&P and expects the college to provide necessary administrative support to assure the transition to larger, synergistic departments. These new departments would have pooled financial resources to manage changes (vacancies, retentions, new initiatives and programs), and expanded opportunities for collaborative research. The new departments would become more robust intellectual communities that serve larger student bodies, and would be encouraged to create new, forward-looking academic programs.

Emerging issues addressed and problems solved:

Improvements Envisioned to CALS:
A number of improvements will be made to CALS assuming a significant number of departments merge. These include:

- Fewer and larger departments. The greater critical mass of merged departments will allow more faculty to meet teaching, service, and governance needs, and provide collective resources to better manage their programs. Additionally, it is envisioned that there will be economics of scale that can improve administrative and student services.
- Merged departments with clear synergies could help attract new faculty hires and students by producing a more comprehensive, disciplinary (i.e., depth) and multi-disciplinary (breadth) view. For example, a plant science department could create an interdisciplinary plant sciences training program, building on Plant Breeding and Plant Genetics. These synergies also could lead to multi-investigator grants.
- Merged departments will be more likely to merge majors at either the undergraduate or graduate level (or both). The newly created majors will create less

confusion for students, streamline course offerings (e.g., fewer courses and more students at lower levels allowing for the continuation of more specialized courses at the upper and graduate levels), and increase the level of service offered through advising. Merged curricula also may yield administrative efficiencies by consolidating curricular planning and governance.

- Institutional guidelines and existing processes already cover how to accomplish department mergers.
- Once a merger is "complete," no special or additional administrative or governance arrangements are necessary.
- CALS retains the ability to make strategic investments in emerging areas critical to the college as they retain control of a portion of the vacated positions' funding and any new positions obtained from Central Campus.
- Departments will have local control to invest in emerging areas in their fields as they retain control of a portion of the funding as discussed in the Introduction.

Problems addressed by this model:

- 101 funding available to the college and likely changes in the future will make it infeasible to continue to staff all activities currently provided.
- Resource allocations from other sources (e.g., tuition-based revenues, F&A return) based on typical academic metrics of teaching, research and service contributions of the college departments, centers and programs have not been evaluated in a comprehensive manner for some time.
- The number of departments in CALS relative to the number of faculty makes it difficult for the Deans office to manage and accommodate requests for financial support (retention packages, new faculty, facilities upgrade and repair, etc.).
- Many departments in CALS are "small," meaning they have either a low number of faculty or students, or research portfolio, raising the question of whether 'economies of scale' might be achieved by strategic merger of compatible units.
- The relatively large number of major fields of undergraduate study within CALS creates confusion for students and parents because the similarity across fields. This situation has lower resource efficiency (students served/university resources).
- In 2016, the department chairs expressed concerns with losses of their faculty due to pending retirements and the inability to respond to these significant losses in the absence of a regular procedure to replace these faculty and defined budgetary commitments from the college.

Potential issues to manage:

- A smaller department may lose disciplinary identity after merger with larger department.
- Despite its small size, the academic focus of a department may not yield suitable partners for merger.
- Merger of departments in name only does not address key issues of resource allocation and mechanisms to establish long-term sustainable, synergistic operations.
- It will take time for the merged department to act cohesively. This process will be more complicated if the offices/labs are in separate buildings, or if the subject areas are significantly different.
- Changes to departments and their names could endanger the loyalty of some stakeholders.
- In the absence of additional resources from central campus, provision of incentives for departments to merge will draw resources away from other CALS programs. It is

envisioned that other CALS programs will continue to grow in strategic areas outside of merging.

Administration & Governance:

This model was designed to be minimally disruptive, and so would adopt governance processes defined by FP&P. It is recognized that merging units likely will require a memorandum of understanding (MOU) to reflect discussions agreed upon going into the merger.

Incentives:

To incentivize department mergers, CALS would make available for a fixed term (e.g., 5 years) the following types of investments:

- Dollars and permission to replace no more than three upcoming faculty vacancies with new assistant professors during the five-year period for the pre-merging faculty. At least one position per department must clearly benefit the synergies of the new, merged unit. Permission to hire would also depend on satisfactory performance on teaching and research metrics. (Retirement of extension faculty or those on non-college resources would depend on separate negotiation.)
- Increase in departmental funding (amount to be negotiated with CALS) to assist in merger via support for transitional staffing, infrastructure modifications.
- Special grants to encourage collaborations between faculty in the merged departments, particularly when these did not previously exist.
- Newly merged departments may generate interest among some faculty to seek new homes within the college, either from or to the merged departments. CALS would provide logistical support to encourage this and retain all or most faculty within the college. FP&P provide guidance for individual faculty moves.

This model recognizes that not all smaller departments have suitable merger partners within the college. As such, issues for smaller units may be exasperated in a college of fewer, larger departments. The challenges for smaller units could be partially mitigated through shared administrative and student services. In addition, the college could use its resources to mitigate negative impacts. All said, careful consideration would be needed to ensure that non-merged departments remain vibrant during the transition period.

Student Impacts:

Merger of departments would facilitate merger of student programs; with larger units having better economy of scale for advising services. Confusions arising from similar program offerings at the undergraduate level would also be reduced. Additionally, by adopting a metric-based budget model that includes student numbers, the importance of teaching can be emphasized along with other metrics structured to maintain the quality of the CALS student experience.

Supporting metrics:

Table 2 recasts the departmental data into several merger scenarios (i.e., merger 1, etc.) that address size metrics while also accounting for potential disciplinary synergies. If all proposed mergers were carried out, CALS would change from 17 departments to 11 and most “critical mass” metrics could be achieved. Further analysis of the consequences of these mergers are provided below. We emphasize that these may or may not be the right

mergers, and regardless, any changes in department structure would be carried out with full faculty participation as established in FP&P Chapter 5.

Characteristics of CALS departments after mergers:

Agronomy/Horticulture/Plant Pathology: The rationale for this merger is to provide a more comprehensive department of plant sciences. This merger would create the largest department in the college in terms of total faculty, second largest for extramural support, and third largest in terms of total 101-funded staff. However, with the merger, the number of undergraduate and graduate majors would still not achieve the desired metric. One perceived utility of the merger would be the potential to develop new academic programs that could attract both undergraduate and graduate majors into more comprehensive and cross-disciplinary programs. A balance between contributions to the teaching and extramural research activities would need to be established, as the merger decreases the dollars of extramural funding per faculty member dramatically compared with the performance of the top individual department before the merger. A critical milestone established by the merger process would be an increase in undergraduate and graduate majors over a set number of years, and could perhaps be linked to milestones on extramural funding. If this milestone was not achieved, then the number of faculty FTE would be reduced by retirement and non-retention and redistributed to other departments to provide a better balancing with college-wide standards and expectations.

Other positives: This merger leverages the new Wisconsin Crop Innovation Center and creates a clear home for applied plant research on campus that could facilitate greater collaboration with Botany and other campus-wide plant initiatives. It creates a stronger contemporary "brand" identity than Latin derivatives.

Animal/Dairy Science: The rationale for this merger is to provide a more comprehensive department where the overlaps in animal and dairy sciences lead to new synergistic opportunities. Merger would create a single department where the number of faculty was greater than 25, while the number of total 101-funded staff in the department would be the largest in the college (78, though much of this is likely related to herd management and connected to 136 revenue sources). Even after merger, the extramural funding generated would be only modest, and would on average decrease per faculty member because of substantial disparities between the two merged units. This modest level of non-federal sponsored research also highlights the role and impact of private industry stakeholders in support of college programs. In this merger, the number of undergraduate majors would be above 100, which addresses below metric performance in one department. Plans for how to create undergraduate and graduate majors that account for the perceived disciplinary commonalities of these two departments while also supporting education for the unique constituencies of the current departments would be needed. A careful consideration of the balance between contributions to the teaching and extramural research activities also would be needed. As noted in earlier reorganization efforts, these departments occupy the same building, so some aspects of the logistics of merger should be readily achievable.

Other positives: This merger provides opportunities to develop synergies for future hires and the potential to build on completion of Meat Lab facility. It allows greater coordination of curricular oversight and planning for majors that share many classes and streamlining of administrative support. An area of concern is: How does a merger retain a specific focus for dairy in Wisconsin?

BSE/Food Science/Soils: The rationale for this merger is to provide an opportunity to reassemble subsets of the faculty into cross-disciplinary groups around priority thematic

areas, which may include food systems, agriculture systems, or others. Complete merger of these three departments would create the second largest department in the college in terms of faculty, where the number of faculty was greater than 25, and the number of total 101-funded staff in the department would also be second largest (70). (We recognize that some faculty and staff may wish to switch into other departments based on their research and teaching interests, for example expertise in soil microbiome.) There is considerable disparity in the average extramural funding generated per faculty member in the three departments (3x difference), with consequent reduction in funds per faculty in the merged department. Only one department had less than 100 undergraduate majors prior to merger, and the merged department would be well above this metric. Plans for how to create one or more majors, perhaps aligned with cross-disciplinary themes would be needed. A careful consideration of the balance between contributions to the teaching and extramural research activities would be also needed. Since these departments are located in different buildings, some logistics of merger may be complicated.

Forest and Wildlife Ecology/Entomology: The rationale for this merger is to create an alignment where most, but not all, of the faculty have interest in ecology across plant, animal and insect systems. Complete merger of these two departments would create a department the number of faculty was greater than 25, but surprisingly the number of staff was only 4 (perhaps an outcome of the earlier hubbing activity?). (It was also considered that some faculty and staff may wish to switch into other departments based on alignment of their research and teaching interests.) There is relatively close match in the average extramural funding generated per faculty member generated in the two departments, so disparities associated with merger are not created. The merger would address the low count of undergraduates in Entomology. Plans for how to create a broadly defined ecology major, or some other thematic organization would be needed. These departments are already located in the same building, and have already gone through an administrative hub exercise. Implications for the existing Russell Hub that serves these departments and Plant Pathology would need to be considered.

Other positives: The merger creates a department home for applied ecology on campus, with opportunity for a new/merged graduate program, and it broadens the research foci beyond traditional natural resources. This might be a better home for the administration of the Environmental Science major.

Other departments:

A merger of Genetics and Nutrition was considered, but the rationale for this merger was loose at best. Complete merger of these two departments would create a department where the number of CALS-associated faculty was about 20 without considering Genetics faculty with appointments in the School of Medicine and Public Health. For this merger, it was also considered that some faculty and staff may wish to switch into other departments based on their research and teaching interests. There is close match in the average extramural funding generated per faculty member in the two departments, and they individually rank as the fourth and fifth largest contributors in average extramural funds per faculty, while combined they would be the fourth-ranked department. The individual departments have substantial cohorts of undergraduate majors and are currently the third and fourth ranked departments in the CALS. If merged, the new department would provide the second ranked contribution to total undergraduate majors. Substantial curricular restructuring would likely be necessary to accomplish this merger, however, and other than the movement in size of the faculty toward the size metric, few other obvious benefits were identified.

A merger of C&E, LSC and AAE was also considered but no solid intellectual rationale was identified to link the different social science disciplines represented. AAE was considered to be capable of existing as a stand-alone department with sufficient undergraduate and graduate majors and extramural funding to sustain their operations, but would become the second smallest department in the reorganized CALS, the third smallest department in average extramural funding, the third smallest department for undergraduate majors and fourth smallest department for graduate majors. For LSC and C&ES, the balance between undergraduate and graduate majors and extramural funding would require careful evaluation to understand their long-term operation as stand-alone departments in this model for college reorganization.

By holding Bacteriology and Biochemistry separate from merger operations, several consequences emerge. Bacteriology would become one of the smallest departments in the college, while still maintaining the highest proportion of undergraduate majors per faculty in the CALS by nearly 2x (reflects the influence of the biology major being housed there), and also maintaining the second position for average extramural dollars per faculty. For Biochemistry, the size of the faculty would move from the largest faculty in the college to the median size in the college, yet these faculty on average would bring 3x higher extramural funds than the next ranked department, Bacteriology. The Biochemistry faculty would also be the third ranked department for undergraduate majors after mergers behind Bacteriology and Genetics/Nutrition and the top ranked department for graduate majors, but closely matched by Bacteriology. Accounting for these ongoing contributions would be a necessary constraint to this model for college reorganization.

Divisional Model for CALS
A Thematic Based Approach

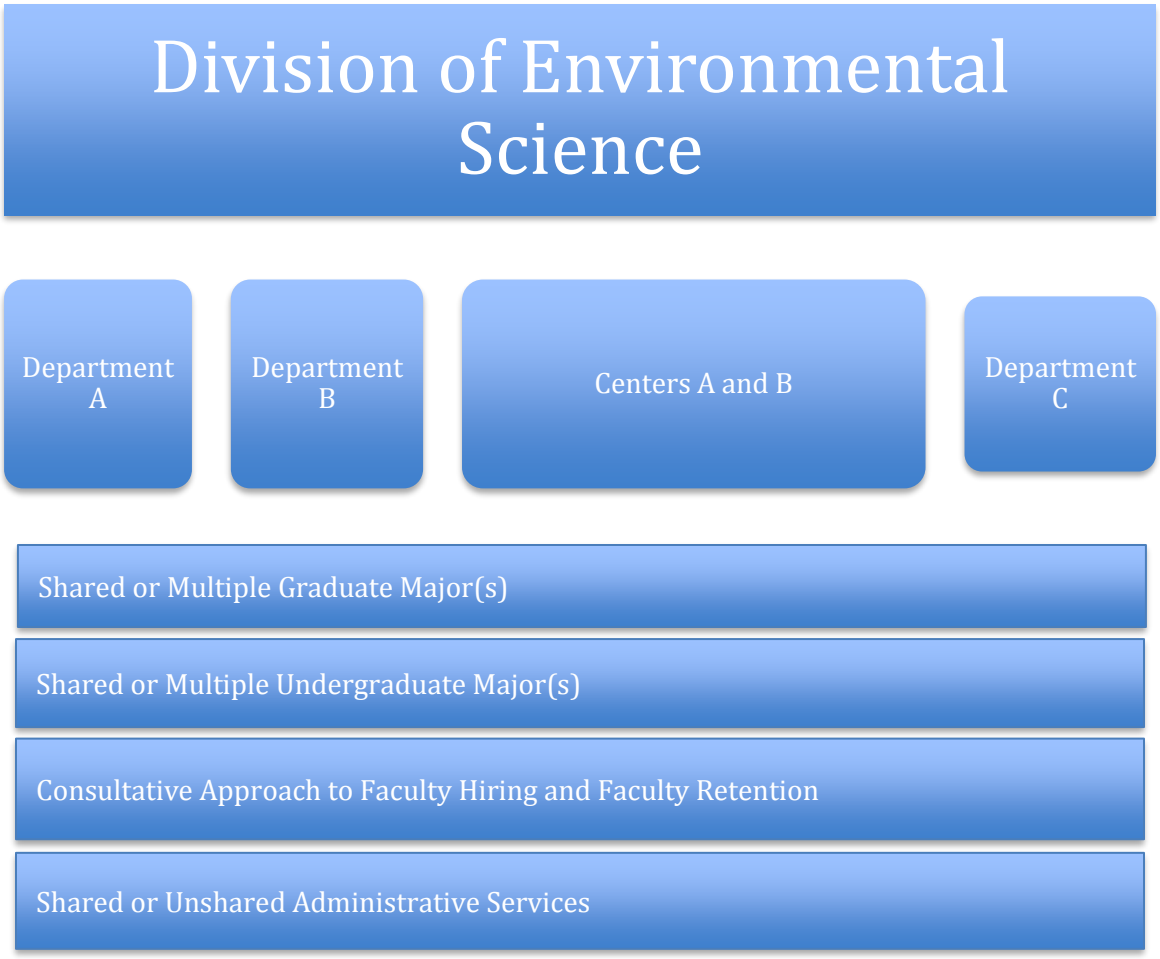
Model description:

In this divisional model, departments and centers are grouped according to their areas of expertise into a unified division, such as "plant science," "animal, dairy, and food science," or "basic sciences." The divisions could be the same as CALS uses for its APC divisions, or they could be organized differently. An obvious plant science division might be Agronomy, Plant Pathology, Horticulture, the Wisconsin Crop Innovation Center, the Integrated Pest and Crop Management Center, and the Center for Integrated Agricultural Systems. A less obvious but potentially interesting division would be Food Science, Dairy Science, Biological Systems Engineering, the Center for Dairy Research, and the Food Research Institute. An environmental sciences division might include Forest and Wildlife Ecology, Entomology, Soil Science, the Environmental Resources Center, and the Land Information and Computer Graphics Facility. It may also be important to keep some departments as "stand-alone" and not place them in a division. Examples of this latter type might be the Departments of Biochemistry and Agricultural and Applied Economics. A typical size of a division might be three departments. Standard department structures would be maintained for each department in the division, and each would have their own chair and executive committee.

Divisional models are used successfully at peer institutions, such as the University of California-Davis, where 22 departments are combined into three divisions: agricultural, environmental, and human sciences.

The most salient features of this divisional model are that it (1) creates a framework that sets in motion a locally-controlled governance-driven process for charting the future course of the college; and (2) it provides resources for departments and centers to achieve their goals.

As such, it (1) bypasses the APC process for faculty hiring and allows for departments and divisions to fund and carry out faculty hiring decisions; (2) does not rely on the college administration for all of the resources necessary to retain each faculty member with an outside offer; and (3) allows faculty and staff who have the deepest expertise in a particular field to articulate and then realize their vision with respect to future hires.



An important aspect of this divisional model is that departments and centers would keep at least 50% of the budget associated with their faculty positions. Upon a retirement or departure, departments and centers would have the autonomy to pursue a hire using these dollars on their own, or in concert with a partner or partners in their division, by pooling their resources. Contributions to faculty hires and retentions could also be made by the college's administration. Requests for contributions from the college's administration would be coordinated from within the division by the divisional council and a prioritization would be established. Faculty retention would be likewise coordinated within the division, with contributions made by both the departments and the college, following the lead of the divisional council.

The proposed structure should enable units to find divisional partners with whom they can strategize and partner. If a department or center is unable to find suitable divisional partners, they could become disadvantaged in this model. The dean's office should play a critical role in helping departments and centers to find appropriate divisional partners and to monitor the success of those divisions over time. It is recognized that divisional partners may evolve over time, perhaps coalescing in some cases and perhaps splitting in other cases.

An example might look like the following:

A department has a senior faculty member retiring, whose salary is $130,000. The department would retain $65,000 of these funds. Pooled together with $15,000 - $20,000 of 101 funds in a department budget, the department could then move to rehire a faculty member in an area of utmost importance to the department. Alternatively, the department could join with another department it its division, pool their funds from two faculty departures, and use $130,000 to hire a faculty member and a staff member, or produce a large startup package for a new hire that included staff. If three departments in the division wanted to join together, the $195,000 they retain could potentially hire two new faculty in an area of importance to the division. In any of these cases, the department or division could propose to the college to provide some funds to help with these hires.

In this way, the college would advance based on decision making that is local and consultative. A division would identify key areas for new faculty and then move to make hires as their resources permit. The college's administration could partner in these hires and retentions as they wish, providing some opportunity for achieving key priorities of the dean.

Undergraduate and graduate majors may be unified within a division where appropriate, though this is not a requirement. Where appropriate, unified committees from among the departments and centers, such as for curriculum, may be formed. Other aspects of shared administrative services may also be pursued. For some divisions, the consolidation of undergraduate and graduate majors and duplicative activities may occur naturally over time.

The department and center chairs from each department in the division would make up a divisional council whose responsibility is to coordinate key activities in the division. At a minimum, these would include discussions on faculty hiring and faculty retention. A reasonable level of interaction for this council might be quarterly meetings throughout the year. An important point is that each department and center may choose to act on its own through its own resources, or may choose to pool resources with others in the division; that decision is up to the department, the center, and the divisional council.

Emerging issues addressed and problems solved:

CALS has spent a great deal of its resources on faculty retention in recent years. This expenditure has limited the number of new faculty positions the college can offer each year. Indeed, the college has lost one-third of its faculty in the last 30 years due to declining flexible resources and the increasing cost of hiring faculty. Without substantial pay plans and raises, this trend is likely to continue. Because each department has nothing to lose in the near term by requesting a retention, the college retains many more faculty than it can probably afford to retain if it wishes to remain flexible.

A related problem is that departments and centers routinely develop strategic plans that they are unable to fulfill because obtaining faculty positions can take such a long time. If a faculty member retires or departs, it may take several years – even if a department is fortunate – to replace that disciplinary expertise in the department. This is an outcome of not having enough flexible dollars for faculty hiring to spread across the college.

In their 2016 letter to Dean VandenBosch, the CALS chairs expressed a desire to see the college restore programmatic excellence in core, strategic areas of strength, productivity, and impact. Dean VandenBosch responded by asking a committee to propose one or more

structures, composed of robust departments and programs of appropriate critical mass, for CALS.

Each department and center has critical contributions to make towards the larger goals of the college, but many of them feel constrained by their inability to hire faculty despite years of planning for particular areas of scholarship. Thus, a key issue addressed by this model is to provide for greater budgetary autonomy at the local level to allow departments to not only create strategic plans, but to implement those plans through control of their own faculty resources. A second key issue addressed by this model is the establishment of larger units, called divisions, which will become the structure through which the future directions of each area will emerge.

The college's administration currently must negotiate with 17 departments (19 at the time the organizational redesign process was first conceived). There are thus "many mouths to feed" and not enough flexible resources to feed them. As a result, it may be important to reduce the number of units with whom the college administration must negotiate. A divisional model, which aggregates departments and centers into appropriate divisions, would achieve this goal.

Divisions allow for departments and centers in allied areas to partner on hiring, retention, curriculum, and other matters, without constricting the functioning of the individual departmental or center unit. They present a larger, unified collection of expertise that can leverage wider expertise in its academic programming. Divisions also encourage partnership on a variety of academic programs, allowing for natural evolution of disciplines within a division.

What is the dean's role in a divisional model? The dean will retain a substantial portion of the faculty salary savings when a faculty member departs, leaving an opportunity for the dean to develop and fund key priorities for the college that might not be part of a division's portfolio. In addition, the dean may choose to partner with divisions on key hires and retentions that are of college-wide interest. The dean will also provide critical guidance and oversight for divisional alignments and assignments. The dean's office will be able to strategize effectively with a smaller number of divisional councils and help foster cross-divisional conversations. Finally, the dean may incentivize merged administrative services, unified graduate and undergraduate majors, and other programmatic changes within and across divisions.

Stakeholder perception:

The divisional model provides an opportunity for departments within the division to creatively partner for their future success, to combine resources that can advance the division, and to provide for a significant increase in a department's ability to follow through on its own strategic plans. In these ways, stakeholders within the departments and divisions should be engaged and enthused by the greater degree of autonomy than they experience at present. They may also find new opportunities to explore their expertise in a larger, more comprehensive unit like a division.

That said, the comfort and support one finds in a department, which is a great feature of our university culture, is maintained in the divisional model.

Some faculty and staff may find the divisional model destabilizing, as it could draw attention away from departments toward a larger multi-department body. Some decision-making will likely occur outside of the department boundary, which is both the point of the divisional

model and also likely one of the challenges for some. Small departments within a division might feel less powerful than larger units; though on the positive side all departments will have equal representation in the divisional council.

Students and instructors should benefit from this model. Giving departments a chance to think creatively about merging majors or creating new majors that would serve a division should provide new opportunities for innovation in our instructional programs. Departments within a division may also choose to develop administrative hubs to more effectively serve their academic units.

External stakeholders should find the departmental units with whom they interact to remain intact. Placing departments within a division should not disenfranchise any donors or supporters as they will be able to immediately identify their main points of contact.

Incentives:

The primary incentive is to allow departments to retain faculty salary dollars when a faculty member retires or leaves. There may be incentives necessary to encourage departments to join a division or remain separate from a division.

Administration & governance:

The divisional model has a simple governance structure. No additional salary dollars are needed for this structure, and the "administrative layer" is minimal. Basically, the department chairs from each department in the division would make up a divisional council whose responsibility is to coordinate key activities in the division.

At a minimum, these activities would include discussions on faculty hiring and faculty retention. A reasonable level of interaction for this council might be quarterly meetings throughout the year. An important point is that each department may choose to act on its own through its own resources, or may choose to pool resources with others in the division; that decision is up to the department and the divisional council.

Regular department administration would continue as is, though it is possible to see how shared administrative services would foster efficiencies within a division.

Budget implications:

The primary implication is that faculty salary dollars are now shared with the department such that the department can make decisions about how to use those dollars. In addition, the department and division would work together on retentions, making decisions about how retention dollars should be spent. It would be possible for departments and divisions to request funding from CALS administration for hiring and retention, with the understanding that the administration would have far fewer dollars to use for such purposes than they do currently.

One of the potential downsides to the model is that departments will have to make very tough decisions about who to retain and how to use very limited salary dollars to make new hires and also retain their faculty. While this will undoubtedly be a challenge, it may be better for the long-term viability of the college to not retain all faculty and allow more flexible salary dollars to remain in the system.

Student impacts:

There is no required change here, unless departments within a division wish to merge their undergraduate majors or otherwise create new undergraduate majors that better serve a division. For example, discussions underway in the plant sciences could lead to the removal of several undergraduate majors in favor of a single, unified major that could be a part of that division.

Supporting metrics:

Data summaries for each department were developed by averaging the last five years of available data (see Table 1). Departments were then placed in APC divisions, with the exception of Biochemistry, which was placed in its own Division, #6. For each metric, data were summed across each of the departments within the division. Division 1 is Animal Science, Dairy Science, BSE, and Food Science. Division 2 is Entomology, Forest and Wildlife Ecology, and Soil Science. Division 3 is AAE, C&E Sociology, and Life Sciences Communication. Division 4 is Horticulture, Agronomy, and Plant Pathology. Division 5 is Bacteriology, Nutritional Science, and Genetics.

Table 3 shows the distribution of faculty and staff numbers in CALS by APC division, with the addition of Biochemistry as the sixth division. Average total faculty roster is 42.8 per division. Average faculty on 101 funding is 30.0 per division. The table also shows the undergraduate and graduate major numbers per division. Note that Division 5 contains the 884 biology majors placed in Bacteriology. Division 4 has very low undergraduate and graduate major numbers, and so a recommendation could be made to eliminate these majors in favor of combined/joint undergraduate and graduate majors for the division. The average number of undergraduate majors per division is 570.9. The average number of graduate students per division is 114.9

Divisional Model for CALS
A Research Based Approach

Model description:

Another variant of the Divisional Model, called the Research Based Approach, brings together academic disciplines (Disciplinary Units, corresponding to current Departments) under the umbrellas of a few broad research categories. This approach is based on common research missions within CALS and seeks to advance collaborations and better position the college to address emerging basic and applied research questions.

The rationale for organizing around key research areas is that the acquisition of knowledge is a primary driving principle underlying essential activities of the college, from generating new knowledge (research) to conveying that knowledge to students (teaching/academic majors) and other constituents (UW-Ex), from training (hands-on and professional training) to funding (grant support). The divisions would enhance the visibility of the set of research activities, promote collaboration across disciplines within and between divisions, and establish a tangible framework for sharing ideas and findings.

The four divisions we propose directly align with the CALS Strategic Priorities and provide the organizational momentum to achieve those priorities. The focal points of the centers encompass all essential activities for research synergism within the college:

- Food Systems
- Sustainable Ecosystems
- BioSciences[8]
- Social Sciences

We describe these briefly here and refer readers to Table 4 for proposed distribution of current departments within centers and other metrics.

> ***Food Systems*** brings together the departments of Agronomy, Animal Science, BSE, Dairy Science, Food Science, Horticulture, and Plant Pathology. Researchers in these disciplines share a concern with improving the production of food. The disciplines share a strong interest in knowledge dissemination and applied research, with about equal research funding from federal and non-federal sources, and include the largest concentration of Extension faculty.
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> ***Sustainable Ecosystems*** includes Entomology, Forest & Wildlife Ecology, and Soil Science. Researchers in these areas share a focus on the ecological aspects of the physical environment that promote healthy ecosystems and sustainable production.
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> ***BioSciences*** serves as a home for Bacteriology, Biochemistry, Genetics, and Nutritional Science, disciplines whose research is commonly supported by NIH, NSF, and other federal funding sources. In addition to these academic units, the Division is envisioned to include a newly created translational science office or focal group to

[8] Other names discussed include Biomolecular Sciences and Integrative Biosciences

promote bridging the gap between ongoing basic research and the generation of products relevant to the mission of the college and society at large.

Social Sciences brings together Agricultural & Applied Economics, Community & Environmental Sociology, and Life Sciences Communication. Their research shares a focus on the consequences of human interaction through study of social institutions such as media, politics, communities, and markets. The establishment of this Division recognizes the important influence of social forces on the ecological, physical, and biological phenomena studied throughout CALS.

Although motivated by the needs for synergy and innovation in research, the creation of research based divisions within the college will have benefits beyond enhanced research productivity. Divisions will act to: a) provide a framework for shared resources that optimize the various missions of the college, such as administrative offices, instrumentation facilities, and undergraduate-oriented activities; b) common intellectual space to promote innovation through collaborations and interdisciplinarity; c) a fluid intellectual and administrative space that allows organic changes to the underlying academic units as needed, for example academic mergers to increase efficiency; d) increase communication among departments within the division to achieve college goals in teaching, research, and outreach.

Departments within the divisions maintain strength in disciplinary expertise, while the overarching grouping promotes innovation and dynamics through out-of-the-box and interdisciplinary thinking. Departments maintain their own strength by acquiring greater budgetary independence for faculty hiring/retention (retaining 50% or more of vacated faculty lines), thus minimizing competition between disciplinary units in a division, which in turn allows disciplines to maintain needed faculty lines and prioritize funding/retention. However, the budgetary independence also promotes cooperation among departments within a division if common needs can be met by joint hiring initiatives.

Initiatives will be in place to promote:

- reorganization to maximize functionality with regards to resources, for example, establishing shared administrative services within the divisions, or the fusion of disciplinary units to improve their function
- seed grants for interdisciplinary innovation within and between divisions
- activities that promote the broader vision of the division, e.g. invited interdisciplinary speakers, conferences, workshops, retreats.

Each division has the flexibility to organize itself in a way that makes sense for its disciplinary units. Flexibility in the precise organization allows each division to maximize effectiveness through different approaches. For example, precise plans for maintaining or merging majors or student services units may differ as deemed most effective for the individual disciplines and the varying missions of different divisions.

Divisions could also provide a natural home for current CALS research centers and foster further synergism between academic and research activities within the college. In a possible scenario, the 15 CALS centers could align with proposed divisions as follows: Food Systems: *Agricultural Safety and Health, Wisconsin Crop Innovation Center, Dairy Forage, Dairy Profitability, Dairy Research, Food Research Institute, Integrated Pest and Crop Management, Center for Integrated Agricultural Systems;* Sustainable Ecosystems: *Environmental Resources Center, Land Information & Computer Graphics Facility;* Biosciences: *JF Crow Institute for the Study of Evolution, a proposed new office or focal group for Translational*

Research; Social Sciences: Applied Population Laboratory, Renk Agribusiness Institute, Center for Cooperatives, Center for Community and Economic Development.

Emerging issues addressed and problems solved:

CALS Priorities and long-term vision for the college: The focus of each division is deemed to be essential to pursue the long-term activities of the college spanning the 21st century. While individual topics of study within these four divisions will necessarily change over time, the need for the overarching topical umbrella for the division itself will remain. For example, specific primary research topics and trends within Sustainable Ecosystems may change over time, but the need to assess and promote sustainability will remain for the foreseeable future.

The research approach maintains key elements of academic discipline unit integrity while actively promoting both increases in efficiency and innovative research. While our campus is known to have low boundaries for inter-departmental cooperation, each proposed division will actively promote such interactions to capitalize on this potential and achieve maximum synergism and excellence.

The reorganization makes CALS more efficient by:

1. Generating a smaller set of units with shared resources, such as for administration, student advising and instrumentation facilities. The shared resources may not result in immediate savings in the number of personnel dedicated to such activities, although shared resources may result in some immediate gains, for example in improving efficiencies of costs associated with such activities. More importantly, however, increases of shared resources within divisions will lead to more effective ways to function as cohesive and vibrant units, which is expected to improve the functioning of all aspects of the college. A reduction in the number of interacting divisions will also facilitate further interdisciplinary avenues through inter-center initiatives. Such an increase in effectiveness and dynamism will ultimately result in improved interactions with both funding agencies and stakeholders, ensuring the long-term strength of the college or even leading to college growth.
2. Providing an umbrella space that promotes organic faculty-led reorganization of academic units to further achieve efficiencies.
3. Providing partial budgetary independence to disciplinary units for hiring/retention may also alleviate the current trend of draining of resources through the current method of college-centered faculty retention plans. This is because budgetary independence to disciplinary units is likely to promote a faculty-based decision process of prioritization, which prevents unnecessary draining of college resources. A faculty/unit-based process of decision-making in retention package requests may also increase the visibility of the effects of such requests on unit resources, highlighting the need for strategic prioritization and possibly decreasing the number of faculty-initiated requests for such packages.

The system enhances CALS excellence by restructuring activities into a few key, long-lasting priority themes while promoting intra- and inter-center interdisciplinarity. This is expected to lead to strong out-of-the-box innovation while remaining grounded in key aspects relevant to the scientific endeavor and stakeholders. Reorganization into larger, state-of-the-art interdisciplinary units (e.g. Academic Units, majors, graduate degrees) may also result in more attractive academic programs and consequently increased student enrollment.

Shared administration, instrumentation and potentially other support will likely be a welcome initiative for most if not all departments, particularly for those smaller units with concerns for long term viability. Other aspects of the reorganization will also be aided by the umbrella provided by the center, as division-based reorganization is organic and faculty-led, driven by such shared benefits and interdisciplinary initiatives. This ability of self-organization will help implement necessary transitions in a way that maximizes concerns for currently imperiled units.

Units that are considered as imperiled yet are essential for the success in the college could also take advantage of flexibility within the division to highlight their mission, and it is expected that any organic reorganization will accommodate these needs. For example, if department X is imperiled due to a suboptimal size but has an important outreach mission, its faculty may choose to merge with a larger department into a single disciplinary unit, while at the same time the division can preserve the identity of the program's mission through other formats, for example focal groups, outreach initiatives, and/or major tracks.

Stakeholder perception:

Stakeholders may be energized by learning of a reorganization that will promote synergistic advances, and which are designed to maximize impact and are largely aligned with globally relevant priorities. Because the format allows flexibility in maintaining academic units, the evolution of a specific unit to become more interdisciplinary should not be a major concern to stakeholders. Even if a specific academic unit is integrated into a merged larger academic unit, the larger size and resources of the division, achieved through increased efficiencies, would allow the creation of a structure or focal group within the division that allows retaining the identity of the unit and potentially even improve its interaction with stakeholders.

Incentives:

Divisions will provide an umbrella to achieve organic, faculty-led mergers for increased efficiencies. Such mergers can occur at many levels, from administrative, to advising, to instrumentation, to majors and departments themselves. Incentives for such initiatives can be provided by the college as increased fraction of source funding return and/or increased flexibility to implement faculty-led initiative within the division. The college could allocate at least one "cluster hire" per year to each division. The cluster hire initiative could be proposed by the Division Steering Committee (see below), and should meet divisional needs. In addition, the college could dedicate Hatch and McIntyre-Stennis funds to competitive interdisciplinary research from within the divisions. Seed funding for interdisciplinary proposals can also act as incentive, since such funding is highly sought-after as it often allows obtaining preliminary data that allows obtaining outside funding. Incentives for the merging of departmental units within the division will be driven by advantages of streamlining unit activities and, potentially, additional FTEs, as described below.

Administration & governance:

While several governance options are possible, an appealing option is for the divisions to be led by a Division Steering Committee, in consultation with the CALS Dean's Office. This committee would consist of two members from each department, namely the department chair and a faculty member elected by the department's faculty. In addition, the Division Steering Committee would include a "Division Coordinator" (see below). As an example, a division consisting of 3 departments, would have a steering committee consisting of 7

people, 2 from each unit plus the Division Coordinator. The steering committee will meet regularly to define goals and assess the function of the division, and will meet at an agreed-upon frequency (i.e. annually or biannually) with the Deans to report and refine goals and activities. The Steering Committee will provide the deans an annual report, highlighting the status of the division's units, such as disciplinary units and research centers, as well as the division's overarching goals relevant to its shared and synergistic activities.

The Division Coordinator's role will be to oversee the vision of the Division Steering Committee for all shared and synergistic activities of the division. The Division Coordinator would be a faculty member willing to dedicate a percent (e.g. 30%) of his/her effort to such shared and synergistic activities. As a compensation for his/her efforts, the Division Coordinator will have a reduced expectation for teaching load and receive a named professorship to help continue his /her research program (e.g. $50,000 annual discretionary support for research activities). The Division Coordinator will be a self-nominated faculty elected by the faculty of the entire division with a multiple-year appointment (e.g. 3 years) to augment continuity.

Shared and synergistic activities of the division, which will be determined by the Division Steering committee and overseen by the Division Coordinator, may include:

- Functioning of shared administration and facilities
- Creation of shared and synergistic activities relevant to the college, such as interdisciplinary seminars and workshops
- Supervising administration and reports for seed funds and awards for collaborative and interdisciplinary activities
- Promoting revenue-generating activities, including summer courses
- Fostering a positive and vibrant scientific community
- Writing, in consultation with the Division Steering Committee, the division annual report to the deans

Efficiencies in governance will occur through shared components (as above) and faculty-led mergers, driven by incentives (as above).

Budget implications:

We envision a budgetary model in which resources from faculty vacancies are allocated into three broad compartments:

- Departments (50%), allocated to faculty hiring and retentions, and any discipline-specific activity
- Division's common fund (20%), used for shared and synergistic activities specific to the division, as detailed above
- CALS Dean's Office (30%), used by CALS for other college-wide activities and initiatives

In this model, sharing of resources would lead to increased efficiencies and units would have more budgetary independence, which will benefit both the departments and the college. Specifically, the division's common fund can be used to support shared resources, including administrative offices. This budgetary structure provides a natural incentive for departments to hub resources since use of shared (division's common fund) resources frees up budget for each disciplinary unit, which can be used to reinforce investment in faculty hiring and retention.

During the transition years, CALS administration will need to provide resources (i.e., HR support) to assist with consolidation of administrative positions and/or reviewing staff responsibilities in establishing centralized administrative structures across what are currently independently operating departments.

Under this budgetary model, fusion of aligned departments into fewer, larger units will be promoted by the intrinsic need of departments to streamline department-specific committee and mentoring activities: departments with insufficient numbers of faculty will likely find that fusion with one or more departments relieves those activities and allows more time for teaching and research. Shared and synergistic activities of the division are expected to enhance the visibility of topics that span various disciplines, and shared governance by the Steering Committee may result in faculty hires with research focus relevant to multiple departments. Such influences are expected to highlight common elements between departments and diminish departmental boundaries, potentially leading to department-initiated fusions. A more active approach, for example for the college to offer one or more FTEs to departments that fuse after reorganization, would further catalyze this process.

Student impacts:

Divisions will have flexibility to determine the number of major fields of undergraduate study they see is most appropriate. Because divisions will contain disciplinary units that are in many cases like-minded, it is expected that there will be efforts in many divisions to coalesce some undergraduate majors. Such coalescence will also highlight interdisciplinary aspects of the division, resulting in improved, and possibly more attractive degree programs. When needed, different tracks can be created within a major, e.g. to preserve the identity of the curriculum for a major prior to a merger.

Similarly, divisions can choose to implement joint or separate advising offices as needed. Even in cases where departments currently share apparent little common ground, sharing of intellectual and other activities within divisions, coupled to intra-division incentives (e.g. seed grants) and other activities (e.g. shared interest seminars, workshops), will likely over time lead to increased unit cohesiveness, allowing to reach currently unmet synergistic potential.

Similar to undergraduate majors, the four divisions will have autonomy to determine the structure of their graduate programs, taking into consideration academic discipline identity and potential funding sources (e.g. training grants and foundation funding).

Supporting metrics:

See Table 4. The data provided here demonstrate the combined sizes of faculty, research funding, and students in each center. Our decision about how to organize the centers has not be based very heavily on assessing “problems” with current departments on any of the metrics provided. Instead we sought an alignment of research potential and what we anticipated to be most logical interdisciplinary synergisms. The data do support the argument that resulting groupings will be more robust than individual departments.