

**CA&ES  
Undergraduate  
Advising  
Review  
Workgroup  
Report  
June, 2013**

**UARW Team:**

**Diane Ullman**

\*\*\*\*\*

**Elizabeth Clark-Anibaba**

\*\*\*\*\*

**Sue Ebeler**

\*\*\*\*\*

**Galyna Erdman**

\*\*\*\*\*

**Marcel Holyoak**

\*\*\*\*\*

**Russ Hovey**

\*\*\*\*\*

**Kim Mahoney**

\*\*\*\*\*

**Sara Reed**

\*\*\*\*\*

**Si Jing Yeap**

		Pages
	Table of Contents	1
	UARW Report Recommendations Final Narrative	2 – 22
<b>Appendixes</b>		
<b>A</b>	2013-14 Provost Budget Update Student Success Only	23 – 24
<b>B</b>	1. CAD Proposal to the Provost 4-1-13	25 - 26
	2. CA&ES Executive Summary for Provost Resource Allocations to Advising	27 – 31
<b>C</b>	Charge Letter: (Undergraduate Advising Review Workgroup)	32
<b>D</b>	Blue Ribbon Committee Survey	33 – 38
<b>E</b>	CA&ES Curriculum Planning Committee - Final Report	39 – 112
<b>F</b>	CA&ES Undergraduate Program Review Committee, Letter to the CA&ES Executive Committee, 2012-13	113 – 115
<b>G</b>	1. Mixed Competencies Approach in Action ( <i>Wilcox – UC Berkeley</i> )	116
	2. Core Competencies – Psychosocial and Cognitive Structural ( <i>Wilcox – UC Berkeley</i> )	117
<b>H</b>	Summary of SWOT Analysis	118 – 128
<b>I</b>	Guidelines for Faculty Master Advisor	129 – 130
<b>J</b>	Staff Major Advisor Position Description – Suggested Division of Duties	131 – 133
<b>K</b>	Animal Science Faculty Advising Evaluation	134

# Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013

## Executive Summary

The Undergraduate Advising Review Workgroup (UARW) was charged by Interim Dean Mary Delany to examine undergraduate advising needs in CA&ES and to make recommendations to the college and via Council of Associate Deans, to the Provost for resource allocations needed to support undergraduate advising. The committee identified seven broad problems/issues needing immediate attention and formulated a series of recommendations for campus and college level investments aimed at student success.

The problems we identified are as follows:

- 1. Low priority given to undergraduate student advising on campus.** The consequences are poor engagement of faculty in advising, chronic understaffing of academic counselors and peer advisors, limited training and professional development opportunities for advisors and poor integration of existing advising units.
- 2. Too few advisors to meet the needs of current student enrollments.** When % advising in position descriptions is used, many majors have high student/staff advisor ratios. In CA&ES student/advisor ratios range from 148:1 to 1,640:1 in the majors and 2084:1 in the Dean's office.
- 3. Advising system.** The advising system across campus and in CA&ES is fragmented and lacks clear communication, training, professional development and integration channels for students, staff, administration and faculty.
- 4. Roles, engagement, opportunities, incentives and assessment of advisors of all kinds are poorly developed.** Faculty in most majors are not well connected to advising and frequently not accessible to students. Master Advisor roles are poorly defined and rewarded, and no training on best practices or agreement on most significant duties exists. Staff Advisors do not have access to training or professional development activities and many do not have an educational background preparing them for a career in advising. Staff advisors experience job classification inequities (classifications in the \_\_\_Asst series and the SAO series), and lack clear incentives and career paths. Advising is not included in faculty merit and promotion reviews or staff personnel evaluation processes, nor are there readily available metrics to help do this.
- 5. Staff Advisors are engaged in diverse teaching support and administrative duties beyond actual advising.** This exacerbates the small amount of time available to serve as advisors.
- 6. Advising across campus is in a reactive state rather than embracing a proactive system.** The latter would provide guidance to students and achieves a strong academic experience.
- 7. Advising does not meet student needs in a way that is linked to their academic development, level of competency and stage of their academic career.**
- 8. On-line tools are not yet fully available that empower students to track their own progress and that assist advisors of all kinds in providing the most informed advice.**

## Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013

In response to these problems we recommend actions at the campus and the college level.

At the campus level we recommend the following investments and actions:

**1. Give priority to undergraduate student advising on campus.** Invest in staff and peer advisors through increased FTE, training, professional development opportunities, incentives, and create strategies for greater engagement and reward of faculty master advisors.

**2. Invest in more advisors.** We propose that advising resources should meet the national benchmark of 350:1 (student/advisor) for staff advising in the majors and undeclared students (handled in the Dean's Office) and 725:1 for Dean's Office advising.

**a. Increase the Number of Staff Advisors in the Majors. At current enrollments, investment of 8 new staff advising FTE (2 SAO IIs, 6 SAO Is) are needed.** We propose a partnership between the Provost and college and request 4 advising FTE from the Provost and use of department-based RAC formula allocations (cells C1 and C2) to invest in the additional 4 advising FTE needed. Peer advisors are an important part of the advising continuum and investments are needed in this arena, although student/advisor ratios do not apply well to determining how many peers are needed. The reason for this is that peers require additional supervision, such that too many more peer advisors may become a burden to the staff advisors. The 2.25 peer advising FTE we are requesting for the majors and 1.75 peer advising FTE we are requesting for the Dean's Office from the Provost are based on the number of actual peers we can successfully integrate into our advising structures. *NOTE:* Because peer advisors work 10-12 hours/week, 1 peer advising FTE = 4 peer advisors.

**b. Academic Counselors in the Dean's Office.** We propose a higher student/advisor ratio (725:1) for Academic Counselors in the Dean's Office because we are seeing students for additional advising that includes general advising, final degree certification, petitions, and we are the sole unit given authority by the Academic Senate to uphold policy surrounding students in academic difficulty. We are also the sole source of advising for undeclared/exploratory students. For undeclared students, we recommend using a ratio of 350:1 as we have in the majors. *The Provost already announced investment in an international student advisor for the CA&ES Dean's Office.* Based on the estimated ratios and this additional counselor, **we estimate the need for 5.3 advising FTE in the Dean's Office at the SAO III level and 1.75 peer advising FTE.**

**c. Investment for the 2020 Initiative.** We strongly recommend that the Provost plan for additional resources to meet this level of excellence as our campus enrollments grow by 5,000 under the 2020 Initiative. If the 350:1 and 725:1 student/advisor ratio remains the desired standard, in CA&ES, at 20% of total enrollment or 1,000 additional students, this will require an additional investment of an additional 2.9 staff advising FTE and 2 peer advising FTE in the majors, and 1.4 staff advising FTE and 2 peer advising FTE in the Dean's Office. This said, the committee advocates for review of advising needs annually once the 2020 growth begins. If the investments proposed herein create improvements for students such that retention is higher and there are fewer students in academic difficulty, needs may shift from

## **Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013**

the Dean's Office to the majors. Other factors may also shift the needs in various ways, including the proportion of the new student enrollment comprised of international students who may need greater advising attention.

**3. Additional investments from the Provost to better coordinate advising.** These include funding of an Advising Coordinator in the Office of the Vice Provost for Undergraduate Education (VPUE), creation of an annual conference to support professional development, and support for continuing education and training for staff advisors. We acknowledge that these are funded via a proposal from the Council for Associate Deans (CAD). Additional training and coordination should also be in the realm of the VPUE Advising Coordinator, e.g. training for faculty master advisors, as well as better coordination and connection of advising units across the campus. **Additional investment in centralized, campus-level training, similar to that already done for RHAT peer advisors is needed for all peer advisors. This will require resources for Housing as they have responsibility for running these courses and we recommend they continue.**

**4. Define advising roles, incentives and develop metrics for advising success.** We expect the VPUE Advising Coordinator will help colleges and departments better define roles, engagement, opportunities, incentives and assessment for advisors of all kinds. We expect this person will help develop student learning outcomes for advising and metrics needed for assessment of student learning outcomes and quality of all levels of advising.

**a. Faculty Master Advisors.** We request the Office of the Provost to work with the Academic Senate to define roles for Faculty Master Advisors and develop better incentives through prestigious campus awards and promotion and tenure processes to reward faculty advising.

**b. Staff Advisors.** We expect the VPUE Advising Coordinator to develop the roles, training and professional development opportunities for staff advisors.

**5. Address position classifications inequities for staff advisors.** We request the Office of the Provost to work with Human Resources to address the job classification inequities for staff advisors. We recommend that all staff advising positions be in the SAO series, with a minimum of 65% advising (face-to-face advising, individually or in groups, by phone, e-mail or Skype). The remaining 35% should be devoted to teaching support, support for the faculty master advisor, curriculum planning, etc. Administrative tasks, such as scheduling classrooms, ordering textbooks, event planning and implementation should be transferred to administrative support positions. In the Dean's Office, the remaining tasks can include special projects and programs for students, consultation with Academic Senate committees, CAD, RODO, interaction with the registrar, etc. We expect this change to dramatically increase accessibility and quality of advising. The outcome and impact of this should be greater student satisfaction, retention, and other elements of student success (GPA).

**6. We request that the Provost invest in a proactive advising curriculum.** We do not think resources are available to require mandatory advising, even annually for each student, nor do we think a mandatory advising approach will necessarily empower students in determining their own

## **Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013**

course to academic success. We propose a curriculum that starts with a first year, mandatory seminar, *Positioning Yourself for Success at UC Davis*, for freshman; and, a first year mandatory seminar, similar to that developed by former Vice Chancellor Fred Wood, *Navigating the Research University*, for transfer students. Our budget request includes the Academic Coordinator, SAO I and TA support we estimate to be needed to do this.

**7. Advising Curricula.** We recommend that a continuing advising curriculum be designed for students as they advance in their academic development. This should engage them with faculty and staff advisors, the resources within the Internship and Career Center, the Student Academic Success Center, undergraduate research opportunities and Study Abroad and expand their understanding of career paths and preparation for graduate and professional school. We expect the VPUE Advising Coordinator to help in this effort and advise that the Provost should plan for increasing investments in campus level support of the ICC, SASC, the Undergraduate Research Center, etc.

**8. Support for on-line advising services.** We strongly advocate continued and expanding support of on-line advising services for students and for advisors. The expected outcome and impact of this work will be greater empowerment for students in their choice of majors, graduation plans, and course selections. They will be better able to follow their own progress and can come to advising appointment prepared with higher level questions for advising. For advisors, these on-line resources represent a sea change in efficiency and accuracy of advising. The quality of advising will be dramatically increased. We look hopefully to a future when this system may also be used as an early warning system so that advisors can seek out students needing help before they are subject to disqualification or are failing in their majors. These on-line resources should be regularly maintained, assessed and improved in consultation with the Associate Dean and advisors in the Dean's Office and faculty master advisors and staff advisors in the departments.

The following budget has been submitted to the Provost via CAD and solely represents costs needed to address additional advising FTE in CA&ES and implementation of a tiered proactive advising curriculum that includes a mandatory first year seminar. Other needed actions outlined above will require additional resources to other units on campus and engagement of the Academic Senate and Human Resources.

## Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013

Department	Salary	Benefits rate	Total Benefits	Salary + Benefits	FTE	Total Salary
SAO I	\$ 50,551.00	0.479	\$ 24,213.93	\$ 74,764.93	3	\$ 224,294.79
SOA II	\$ 55,709.00	0.479	\$ 26,684.61	\$ 82,393.61	1	\$ 82,393.61
Peers	\$ 12,000.00	0.013	\$ 156.00	\$ 12,156.00	2.25	\$ 27,351.00
					<b>Subtotal</b>	<b>\$ 334,039.40</b>
<b>Dean's Office</b>						
SOA III	\$ 61,354.00	0.479	\$ 29,388.57	\$ 90,742.57	5	\$ 453,712.83
Peers	\$ 12,000.00	0.013	\$ 156.00	\$ 12,156.00	1.75	\$ 21,273.00
					<b>Subtotal</b>	<b>\$ 474,985.83</b>
<b>First Year Seminar</b>						
Graduate Student Associate-In	\$ 35,310.00	0.013	\$ 459.03	\$ 35,769.03	6.25	\$ 223,556.44
Academic Coordinator	\$ 63,000.00	0.331	\$ 20,853.00	\$ 83,853.00	1	\$ 83,853.00
SAO I	\$ 50,551.00	0.479	\$ 24,213.93	\$ 74,764.93	1	\$ 74,764.93
					<b>Subtotal</b>	<b>\$ 382,174.37</b>
					<b>Grand Total</b>	<b>\$ 1,191,199.59</b>

### At the College Level We Recommend the Following Investments and Actions:

**1. Assessment of Progress.** We recommend use of training, expectations and metrics provided by the campus to assess the quality and efficiency of CA&ES advising systems (see above, item 4).

**2. Resource Allocation, Reporting and Increased Accessibility and Visibility of Advising.** We recommend that Interim Dean Delany establish an implementation committee to work with her leadership team, department chairs, cluster CAOs, faculty master advisors and staff advisors to design and implement a resource allocation and reporting structure that directs advising allocations to advising, provides a greater connection between advising in the departments and the Dean's Office, incentives for strong advising, and greater accountability for quality. This committee should address a college-wide solution for poor accessibility, visibility and fragmentation of advising, as well the proposed partnership with the Provost to support 4 staff advising FTE in the majors with RAC allocations. Possible solutions are in our report and others may become evident in this consultative process. **The latter issue is high priority in order for the college to reach its potential for excellence in advising.**

**3. Training and Professional Development.** The Associate Dean for Undergraduate Academic programs should work with the VPUE Advising Coordinator and CAD to create training strategies, including handbooks and workshops. All staff advisors and faculty master advisors should be strongly encouraged to attend the Annual Conference, funded by the Provost.

**4. On-line Advising Services.** Interim Dean Delany should continue to advocate for campus efforts to extend the Student Advising Portal to all staff and faculty advisors and the Associate Dean should ensure training on its use.

# Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013

## Report

### I. Background

**Committee Charge.** The College of Agricultural and Environmental Sciences (CA&ES) *ad hoc* Undergraduate Advising Review Workgroup (UARW) was established in April 2013 by Interim Dean Mary Delany in response to Provost Hexter's budget update and initiative for investing in student success (Appendix A, Provost's Budget Update Letter). Undergraduate advising was among the investments called for by the Provost, along with a request that ideas for investment in advising be coordinated via Interim Vice Provost for Undergraduate Education, Carolyn de la Pena. During this time, Council for Associate Deans (CAD) coordinated a proposal for investments in advising (Appendix B1, CAD Proposal to the Provost, 4-1-13). Among their requests was permanent allocation of \$1.2 million for undergraduate advising to be distributed among the colleges to meet their most severe needs. Before making a decision on this aspect of the CAD proposal, the Provost asked that all the colleges collaborate to coordinate a proposal for investment in advising through CAD.<sup>1</sup> With all these activities as a backdrop, Interim Dean Delany charged the UARW to review undergraduate advising in CA&ES and formulate recommendations to maintain and extend excellence in this arena (Appendix C, Committee Charge Letter). Members of the UARW included: faculty (Susan Ebeler, Marcel Holyoak, Russ Hovey), departmental staff advisors (Elizabeth Clark-Anibaba, advising Managerial Economics, Galyna Erdman, advising Community and Regional Development, Human Development, Sustainable Agriculture and Food Systems), a Dean's Office Academic Counselor (Kim Mahoney), a cluster CAO (Sara Reed), a peer advisor (Si Jing Yeap), and Associate Dean for Undergraduate Academic Programs (Diane Ullman).

**Context for Committee Efforts.** A convergence of factors have stimulated campus interest in undergraduate advising, which has not been comprehensively addressed for decades. **First**, preparation for the UC Davis Accrediting Commission for Schools (ACS), Western Association for Schools and Colleges (WASC) review revealed gaps and weaknesses in undergraduate advising at multiple levels ([http://wasc.ucdavis.edu/local\\_resources/docs/wasc2013/UC\\_Davis\\_2013\\_InstReacReport.pdf](http://wasc.ucdavis.edu/local_resources/docs/wasc2013/UC_Davis_2013_InstReacReport.pdf)). **Second**, Chancellor Katehi's 2020 Initiative, will be designed to bring 5,000 additional undergraduate students to the campus. Although, the split between California residents, national and international students has not been announced, it is clear that the percentage of national and international students enrolled will grow significantly ([http://chancellor.ucdavis.edu/initiatives/2020\\_Initiative/index.html](http://chancellor.ucdavis.edu/initiatives/2020_Initiative/index.html)). Early efforts to increase national and international enrollment quickly revealed challenges for student success in these groups and made deficiencies in student advising evident. **Third**, as part of the UC Davis effort to increase student success and national ranking, Interim Vice Chancellor for Student Affairs, Adela de la Torre convened a Blue Ribbon Committee (BRC), with over 100 members across campus to understand and provide recommendations to augment the undergraduate student experience at UC Davis (Appendix D, Blue Ribbon Committee Survey, Final Report not yet available). The BRC also spent considerable time considering undergraduate student advising. Notably, student services were also drastically cut during the budget challenges of 2008-2012.

---

<sup>1</sup> The CA&ES portion of that proposal, to be submitted June 30, 2013, can be found in Appendix B2.

## **Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013**

**Fourth**, the CA&ES *ad hoc* Curriculum Planning Committee (Final Report, Appendix E) and CA&ES Undergraduate Program Review Committee (UPRC; 2012-2013) (Appendix F, UPRC, letter to Executive Committee) made specific recommendations regarding the need for review and enhancement of undergraduate advising. Our committee pursued its charge in the context set by these factors, with a goal of formulating recommendations, some of which the committee envisions to be included in the CAD proposal to the Provost for implementation at a campus level and others that would address advising issues specifically within CA&ES.

### **II. Review and Recommendation Processes**

*Underlying Processes.* The committee began its work with the following activities:

1. Reviewing information underlying the context for the committee efforts described above. This included, materials from the BRC review, the report of the CA&ES *ad hoc* Curriculum Planning Committee, UPRC recommendations from 2012-2013, NACADA<sup>2</sup> reports and recommendations, and results of the UCUES<sup>3</sup> survey.
2. Benchmarking to provide a comparison with advising structure at other large public universities, review of relevant literature, and models used by other universities, such as a tiered competency model developed by Elizabeth Wilcox (UC Berkeley; Appendix G).
3. Review of the advising structure within CA&ES, including numbers of faculty, staff and peer advisors, analysis of staff advisor position descriptions and duties, student to advisor ratios, and RAC formula allocations (cells C1+C2).
3. Development of Advising Principles. The committee completed a survey to analyze advising principles. We agreed that any advising structure and strategy we would recommend should be based on commonly held principles aimed at excellence and promoting student success. These principles are discussed below.
4. The committee conducted a Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis of advising within CA&ES. The table below and Appendix H (in detail) summarize what we learned from the SWOT analysis. The SWOT analysis was used to determine whether our committee recommendations addressed weaknesses and threats while taking advantage of strengths and opportunities.

### **III. Problems and Issues To Be Remedied**

The reports available to the committee, our discussions and SWOT analysis (summarized below) identified a range of problems, many of which have been identified by the BRC and others. The underlying problem is that undergraduate student advising has not been a priority on campus for decades. The consequence is engagement of a minority of faculty, chronic understaffing of

---

<sup>2</sup> NACADA is the Global Community for Academic Advising, <http://www.nacada.ksu.edu/>

<sup>3</sup> UCUES is the University of California Undergraduate Experience Survey, all 10 campuses participate and the results are based on very large survey responses.



## Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013

academic counselors and peer advisors, extremely limited training and professional development opportunities and limited communication between existing units that conduct advising. **Many majors on campus have extremely high ratios of students to staff and peer advisors. In CA&ES student/advisor ratios range from 148:1 to 1,640:1 in the departments and 2084:1 in the Dean's office,** leaving all parties deeply challenged to meet student needs. **The advising system across campus and CA&ES is fragmented and lacks clear communication channels.** Resources available to students and where to find them are frequently unclear. **Roles, engagement, opportunities, incentives and assessment of advisors of all kinds are poorly developed:** Faculty in most majors are not well connected to advising and frequently are not accessible to students. The roles of Master Advisors are poorly defined and rewarded, and no training on best practices or agreement on most significant duties exists. Staff Advisors do not have access to training or professional development activities and many do not have an educational background preparing them for a career in advising. Staff advisors experience a wide range of job classification inequities (classifications range from \_\_\_Asst II to SAO III), lack clear incentives and don't have clear career paths. A deeper campus-level problem is that quality of advising is not included either in faculty merit and promotion reviews or staff personnel evaluation processes, nor are there readily available metrics that do this. **Staff Advisors are typically engaged in a wide range of teaching support and administrative duties beyond actual advising, and this exacerbates the small amount of time available to serve as advisors.** The net effect is that advising is largely reactive, students have long wait times to be seen (up to 10 days in some majors and 12 days in the Dean's Office during peak times), appointment times are often very short (15-30 minutes) and lack the depth the student is seeking. Many students never see an advisor unless they are in academic difficulty. **Advising needs to transition from a reactive state to a proactive system that provides guidance to students and helps them achieve a strong academic experience.** Part of the problem here is that advising is not mandatory and students are frequently unaware of what they need. **Advising has not been geared to meet student needs in a way that is linked to their development and the stage of their academic career.** Students don't have guidelines to help them choose when and where to see advisors, there is no mandatory advising and no proactive advising "curriculum" or pathway.

### Summary of SWOT Analysis

#### Strengths

- Dedicated, motivated staff.
- Dedicated faculty, in some departments a strong faculty commitment to advising
- Good communication between department staff advisors and Dean's Office advising unit
- High quality advising based on knowledge of policy, coursework, campus services and career paths, by faculty, staff and peers in the best-run majors
- Strong, enthusiastic peer advisors, particularly those receiving centralized training through RHAT<sup>4</sup>.
- Improved resources, e.g. on-line degree certification, Career Discovery Group Program
- Enthusiastic, strong alumni

<sup>4</sup> RHAT is Residence Hall Advising Team. Housing offers the required one quarter course for all peers serving RHAT. CA&ES has piloted a centralized peer model in which the Dean's Office administers peers who are trained as part of RHAT and deployed to the departments.

## Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013

### Weaknesses

- Faculty in many departments are disjunct and poorly engaged in advising
- Classification inequities and lack of incentives and clear career paths for staff advisors
- No guide-lines or incentives for faculty advisors, not rewarded in merit/promotion
- Lack of training/professional development for staff and peer advisors (dept. & college).
- High student/advisor ratios & disparity across majors. Overworked, stressed staff advisors are deeply challenged to serve their advisees.
- Lack of resources due to budget cuts and clustering, as well as lack of appropriate tools.
- Resources and information for students are unclear, thus students are frequently confused
- Advising at UC Davis is fragmented and dysfunctional. Too decentralized without clear accountability.
- Lack of consistent and on-going professional training for faculty, staff and peer advisors.
- No mandatory advising. This is a weakness because many students do not know where to get advising and have no incentive to seek advising unless they are subject to disqualification. Our advising is skewed towards students in academic difficulty, rather than enhancing the student experience.

### Opportunities

- Develop expectations, principles, resources (e.g. handbooks, procedures), and philosophies integrated across campus units
- Develop and use tools and resources in the college and campus, including full participation in the Student On-line Services and Student Advising Portal.
- Create professional development, best practices and incentives to galvanize advising and ensure happier more highly trained advisors at all levels.
- Improve organization, structure, proactive focus and oversight of advising.
- Improve quality with student centric advising that engages students in taking responsibility for their progress.
- Monitor, track students and improve outcomes. Track students as they pursue their careers to improve knowledge about correlation between majors and careers.
- Advertise majors and recruit more high quality students.

### Threats

- Staff overload with current student-advisor ratios, likely to worsen with campus growth.
- Lack guidance on advising practices, policy, philosophy. Lack of incentives for staff, for faculty in merit/promotion
- On-line systems need to take confidentiality issues into account.
- Risk of budget cuts/reduced resources, no clear priorities or commitment to training and professionalism.
- Advisor classifications are burdened with too many administrative tasks, tension between faculty and staff advisor concerns.
- Student dissatisfaction and under-performance

## IV. Recommendations

The committee designed their recommendations with the following principles in mind:

**Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013**

1. Students should have timely, easy access to high quality advising. We expect advising quality to be measured using learning/advising outcomes and metrics addressed later in this document.

2. Student needs are best met when an integrated, highly connected network of advising is available. We agreed that this network should include faculty, departmental staff advisors, Dean’s Office academic counselors, and peer advisors. Guidelines and best practices for the transactional<sup>5</sup> and translational<sup>6</sup> advising done by each of these entities are needed. We view the roles of each of these types of advisors as follows:

<b>Faculty Advisors</b>	<b>Staff Advisors in Majors</b>	<b>Academic Counselors: Dean’s Office</b>	<b>Peer Advisors</b>
Advice on how to pursue activities that enhance specific disciplinary interests. Some examples may include guidance towards classes that address particular skills and topics, undergraduate research opportunities, internships, study abroad choices, career planning, preparation for graduate or professional schools.	Advice on graduation plans, course selection, petitions for various actions, solutions to problems that arise (physical, psychological, structural), and campus resources. Discussion of major choices, how to evaluate changes of major, who to see about various career goals and research. Provide knowledge of policy and requirements, degree certification in the major, etc.	Advice on how to meet general requirements, general education requirements, actions relative to academic difficulty and policy surrounding subject to disqualification, dismissal, plans for actions to return to success, readmission, which petitions to use for various actions, orientation, student activities, retention and outreach. Connection with campus resources. Management of distressed and distressing students.	Advice on requirements, selection of classes, petitions and the location of student services and resources on campus. Should be prepared to engage the student with a staff or faculty advisor and to recognize when that is needed.

3. Advising should be *proactive* and aimed at the needs of students across the entire spectrum of performance, rather than *reactive* and aimed primarily at students in academic difficulty. We expect this to increase the efficiency of our advising, increase the retention and success of students, and enhance the overall student experience. To shift to more proactive advising we recommend advising that is linked to their needs at different stages of academic development. There is a considerable literature on student development theory favoring tiered developmental and competency based advising (see Appendix G, model by Elizabeth Wilcox). The committee

<sup>5</sup>Nuts and bolts—courses, graduation plans, petitions

<sup>6</sup>Career path discussions, preparation for graduate and professional school, professional networking

## **Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013**

envision a proactive advising “curriculum” tailored to meet the greater needs of first year students (freshman and first year transfers) with a seminar focused on the tools to succeed at UC Davis, transitioning then to the needs of more advanced, self-sufficient students, such as guidance for undergraduate research, internships, and ultimately advice on career placement, graduate and professional school. Over time we would like to see this curriculum expand and diversify to include different kinds of advising for students with different levels of competency.

4. Advising should be personalized and holistic, addressing the needs of the whole person, while empowering student responsibility and encouraging partnership with advisors. We expect this to build stronger students who will ultimately be better citizens, graduates and alumni.

5. Advising structures should be designed and use resource allocations to provide consistency across departments and programs, and a structure should be created that allows advisors to consistently spend the bulk of their time advising students, regardless of departmental, program or other local differences.

This report is a call to action at department, college and campus levels. Different colleges have different advising structures and needs. Nonetheless there are some problems that are campus-wide problems and where all colleges and students will profit from a campus level solution. These include the inconsistent and diverse job classifications of staff advisors, lack of a cohesive system of evaluation for advisors, lack of a clear advising structure that matches student competency and academic development, and lack of training and professional development for peers, staff advisors and faculty advisors. CA&ES has 29 very diverse majors and advising is dispersed between major programs and the Dean’s office. Thus, the college has its own set of problems that require specific college level actions.

In order to solve the problems identified by the committee, we suggest change is needed in four major categories: (1) Provision of resources and tools that can improve the ability of students to help themselves (e.g. continued improvement and development of the Student Advising Portal), enhanced staff training, guidelines and communication among advising units (assisted by the VPUE Advising Coordinator). (2) Organization and advising resources (provision of staff, peers) and engagement of faculty, delineation of roles (including job classification improvements), and setting clear expectations. Evaluating and incorporating into professional development accountability for all types of advisors. (3) Developing metrics of success and effectiveness that can track whether advising is working effectively across campus. (4) Adoption of a tiered advising scheme that recognizes the different competency and knowledge of students at different levels of progress through their degree (similar to that described by Elizabeth Wilcox, Appendix G).

### **Recommended Campus Level Actions:**

#### **1. Guidelines and Training**

*a. Improve Engagement and Effectiveness of Faculty Advisors:*

## Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013

- The Academic Senate should create, vet and approve specific guidelines that indicate the responsibilities of Faculty Master Advisors. In addition, guidelines for expectations related to all faculty advising should be included in the Academic Personnel Manual, such that this is addressed clearly in department, college and campus reviews. See Appendix I for suggested guidelines for Faculty Master Advisors. We also recommend the Provost create a prestigious award for faculty advising, on par with the campus teaching award.
- A handbook discussing the best roles for faculty advisors (master, track and general), best practices for advising, and campus advising resources should be created. Best roles for faculty advisors include their importance in discussing course selection, undergraduate research opportunities, internships, pathways to graduate school and professional school. Such a resource needs to recognize a tiered approach depending on the level of development and needs of different groups of students as they progress through our majors (e.g. see Appendix G, Wilcox model and “Advising Goals” section below). This action item of developing a handbook is appropriate for the VPUE Advising Coordination position. Resources for this new position have been approved by the Provost.
- Training for faculty advisors should become part of all new faculty orientations and also be provided for existing faculty advisors. Continuing education (on-line perhaps) should be implemented to help faculty advisors keep abreast of new ideas and best practices. We recommend that the VPUE Advising Coordinator take responsibility for development of this training, and that colleges would be responsible for implementation and compliance.

### *b. Staff Advisors (departmental and Dean’s Office):*

- A handbook discussing the best roles for staff advisors, best practices for advising, and campus advising resources should be created. This must be done on a campus level to ensure consistency. Each college could have its own supplement if needed. This action item is appropriate for the Advising Coordinator Position to be established in the Vice Provost for Undergraduate Education (VPUE) office.
- Professional Development: We support an Annual Conference that would focus on best practices and professionalism in advising. This action item should be one responsibility of the VPUE Advising Coordinator. This has been funded by the Provost.
- Initial and continuing training: We support development of an advising series, from beginning to advanced levels via Staff Development and Professional Services (SDPS). We recommend that the VPUE Advising Coordinator work with SDPS to develop this series. We recommend that all new advisors take one class, to be chosen by their supervisor at the appropriate level. Advisors should take a new segment of the series every other year. In addition, staff advisors should be supported in joining and attending meetings of professional societies for advising, most notably NACADA.

## Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013

### *c. Peer Advisors*

- A handbook discussing the best roles for peer advisors, best practices for advising, and campus advising resources should be created. Peers should have clear guidelines so they know when to refer students to staff and/or faculty advisors. This action item is appropriate for the VPUE Advising Coordinator.
- Currently, all peer advisors that serve the RHAT<sup>3</sup> program are required to take a course in Spring quarter that is offered by Housing with support and assistance from all college advising offices. This comprehensive course teaches best practices, requirements, policies, responses to distressed or distressing students, and issues surrounding confidentiality and privacy. All peers participating in this program receive background checks and sign confidentiality agreements. In CA&ES, students in our centralized peer model also participate in this course. We support expansion of this course to accommodate training of all peer advisors on campus. With this, we propose that all peer advisors also receive background checks and sign confidentiality agreements.

## **2. Incentives and Equity:**

### *a. Faculty Advisors*

- The Academic Senate should address incentives in the merit and promotion process that would reward faculty undergraduate advising, in particular faculty master advisors, at least on a par with graduate program and group chairs. The committee recommends that faculty advising be evaluated and evaluations included in merit and promotion dossiers. Animal Science is initiating this process and their on-line survey may serve as a model for the college (survey questions, Appendix K).
- A uniform system for compensating Faculty Master Advisors should be established. This system should take into account the size of the major, number of advisees, and duration of service in the capacity of Faculty Master Advisor. Depending upon the advisor and the department, compensation could be in the form of a stipend, release from teaching responsibilities, assignment of additional support for teaching, or some combination of these items.
- Campus awards for advising should be created and given the same level of attention and compensation as the Faculty Teaching Award or the Research Medal.

### *b. Staff Advisors*

- Standardized classifications for staff advisors. Currently, advisors are classified in both the \_\_Asst II, III and IV series, as well as in the SAO series (I-V). The percent advising in these positions vary widely, as do other advising and administrative duties. Frequently staff advisors are burdened with a wide range of administrative duties that prevent them from giving students the time and attention that are needed. We have identified responsibilities that the committee views as appropriate to advising positions and those that are best addressed by administrative positions (Appendix J, Recommended Staff Advisor Position Duties). We recommend that the Provost and Dean work with Human

## Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013

Resources to address the inequities in staff advisor classifications. The committee recommends direct student interaction and advising should be set at a minimum of 65% (Appendix J) and to reflect a student to advisor ratio of 350 students to 1 advisor, a ratio which accords with national guidelines.

- Standardization will provide equity across majors and campus with regard to advisor workload and in the services and quality of advising encountered by students.
- Prestigious campus awards for staff advising should be created. These should be established and implemented through the VPUE.
- A system for career advancement for advisors should be created with steps that accord with a career as a staff advisor.

### *c. Peer Advisors*

There is great benefit for the campus and for the students when a well-trained peer advisor continues for a second or third year, and peer advising represents a great professional development opportunity for students. We recommend creation of Peer Fellowships (perhaps modeled after Professors of the Future) that would provide special opportunities and prestige for peer advisors. Fellows would receive an annual fellowship in return to being trained and working as a Peer Advisor, helping to coordinate advising events both within colleges and programs. They would work with staff and faculty advisors to provide an integrated advising structure, and help to guide new Peer Advisors in their respective programs and in campus-wide (or college-wide) training events. A fellowship structure would help promote continued involvement and participants would receive transcript notation. We expect that this would become a prestigious position, enhancing professional and career development for students.

## 3. Advising Resources

*a. Increased accessibility to advising.* Adjust undergraduate student/staff advisor ratios in the departments to 350:1 based on advising and related activities FTE. The committee selected this ratio as a goal because NACADA recommendations of 300:1 for academic counselors (<http://www.nacada.ksu.edu/clearinghouse/advisingissues/advisorload.htm>) reflect information from a wide range of institutions and are considered a national benchmark. Contingent on adequate advising being available in the departments (meeting the 350:1 ratio), we recommend that the student/advisor ratio in the Dean's Office be adjusted to 725:1. This higher ratio is proposed in recognition that the basic advising will be done in the departments/majors and with the exception of undeclared/exploratory students, the Dean's Office does more general advising and has the authority to uphold Academic Senate policies surrounding academic performance. While we do not have data, we believe this ratio will allow the Dean's Offices to provide strong service and advising. CA&ES is currently far behind these ratios in some departments (administrative clusters) and majors (Table 1, below) and in the Dean's Office. Our recommendation is to approach the national standards for both current enrollments and projected future enrollment growth. While we consider this a priority for the campus, meeting these resource needs will need to be a collaboration between the Provost, Deans, and Departments. Increasing staffing and meeting national standards for student/advisor ratios will make advice available to students without wait times, will permit advisors to conduct more proactive advising, and participate in special activities

## Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013

that benefit students. It would allow for all students to be seen and for follow up actions to be taken.

**Table 1. Current staff advising FTE in the majors with estimated FTE needed.**

Major/Program	Current Enrollment 2012 - 2013	% Advising FTE [Current PD] (Student:Advisor Ratio) [C = B / C% + Ratio Below]	Advising FTE Needed to Attain a 350 : 1 Ratio [D = B / 350]	New Peer Advisor Model [DO Supplement and Dept. Hires] Peer Advisor FTE
Clinical Nutrition, Nutrition Science	656	0.4 [1,640]	1.9	1.5
Environmental Horticulture & Urban Forestry	37	.25 [148]	0.1	0.25
Landscape Architecture, Pre-Landscape	129	0.4 [323]	0.4	0.25
Managerial Economics, Pre - Managerial Economics	802	1.0 [802]	2.3	1
Agricultural Management & Rangeland Resources, Biotechnology, Crop Science & Management, Ecological Management & Restoration, International Agricultural Development, Plant Sciences	303	0.4 [758]	0.9	0.5
Community & Regional Development, Human Development, Sustainable Agriculture & Food Systems	692	0.45 [1,538]	2.0	1
Animal Biology, Entomology	357	0.6 [595]	1.0	0.25
Food Science, Fiber and Polymer Science, Textiles and Clothing, Viticulture and Enology	389	0.55 [707]	1.1	0.25
Environmental Toxicology	78	0.35 [223]	0.2	0.5
Agricultural & Environmental Education, Animal Science, Animal Science & Management, Avian Science	1020	1.2 [850]	2.9	1.25
Wildlife, Fish Conservation Biology	223	0.4 [558]	0.6	0.25
Atmospheric Science, Soil & Water Science, Environmental Resource Science, Environmental Science & Management [M-Z], Hydrology	218	0.5 [436]	0.6	0.25
Environmental Biology and Management, Environmental Policy Analysis and Planning, Environmental Science & Management [A-L]	370	0.4 [925]	1.1	0.25
<b>Total</b>	<b>5274</b>	<b>6.9</b>	<b>8.1</b>	<b>7.5</b>
<b>FTE Needed for 350 : 1 Ratio Advising</b>		<b>15</b>		

**NOTE:** Undeclared/exploratory students (n=561) are not included in the total enrollment here because they are addressed in the Dean's Office. Because peer advisors work 10-12 hours/week, 1 peer advisor FTE = 4 peer advisors.

***b. Increase efficiency and student responsibility in advising.*** Create on-line resources that enhance advising at all levels (faculty, staff, peers) AND that empower students to take responsibility for their progress and planning. We strongly recommend continued and increasing support for the Registrar's On-Line Student Portal AND for development of the associated Student Advising Portal under development by the L&S IT team. These efforts have already created a significantly more efficient and useful advising environment, but there is a great deal of work still to do. As these resources are rolled out to students, we expect that students will take more responsibility for tracking their own progress and will come to advising sessions with greater knowledge and preparation.

***c. Enhance the quality and professionalism in our advising, as well as improving the connectivity of advising services.*** Development of professional training, guidelines for advising roles, handbooks, best practices, communication forums, and incentives, etc. These activities can be best coordinated through the VPUE Advising Coordinator; however, we expect this recommendation to require strong collaboration at all levels across campus.



## Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013

### 4. Campus Level Accountability

*a. Expectations and Outcomes:* Develop outcomes equivalent to Student Learning Outcomes (SLOs) and assessments for advising to address whether the students are both receiving information about and being empowered in professional development. Student and advising proficiency should be evaluated in terms of knowledge of resources, expectations, responsibilities and proficiencies with respect to understanding the structure of their major, internships, study-abroad opportunities, honors thesis projects (etc), and graduate school and career opportunities. We envision Karen Dunn-Haley (Director, Office of Academic Assessment) and the VPUE Advising Coordinator collaborating with CAD in development of the SLOs and the appropriate assessments. Assessments should be automated and done annually. An on-line system for conducting these assessments should be created with assistance from the Registrar's office. We envision a system in which students must complete assessments of advising just following finals in spring quarter. Their grades will not be released (visible to students) until they do so. Such a provision might be enacted through the Student Advising Portal (or SmartSite?) and ideally individual programs should have an opportunity to add their own questions to the core set of campus-wide questions (for which summary would be automated). Assessments will also be done in the first year seminars we envision for freshman and transfers, providing tiered evaluation of our advising processes.

*b. Metrics:* The campus needs to use existing resources in the Registrar's Office and Administrative and Resource Management (ARM) to track student outcomes such that changes relative to increased advising resources can be assessed. In order to address some of these metrics, we advise that the campus supply ALL advising offices (including faculty master advisors) with a swipe card system (and associated software) that will read student ID cards and allow advisor visits to be recorded and associated with outcomes that relate to student success. This type of system will require programming of an application, the hardware is very inexpensive. Possible metrics include:

- number of students seen by faculty, staff and peer advisors in different locations
- average time spent with each student
- evaluation of advising visits by students, possibly via an on-line system to be installed in every advising office—we envision this as a feedback system for advisors, as well as a measure of impact from professional development and training efforts.
- retention of students in their major and on the campus
- number of students in academic difficulty
- change in GPAs (do students receiving advising increase their GPAs?)
- time to degree
- student satisfaction in their major
- student satisfaction with their interactions with faculty

### College-specific Recommendations for CA&ES

Each college has specific needs and may want to approach their organization in different ways. In CA&ES, we have highly diverse majors, each with widely varying requirements and needs. Currently, major-specific advising is carried forward by faculty, staff and peer advisors in the departments and sometimes the administrative clusters associated with each major. More general

## **Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013**

advising is done in the Dean's Office, such as for General Education requirements, changes of major and a wide range of actions requiring petitions. The Dean's Office advises undeclared and exploratory students and has also been delegated the authority from the Academic Senate to be involved in all advising around academic difficulty leading students to be subject to disqualification and academic probation. Faculty and staff strongly support this structure because it holds the opportunity for interactions between faculty, staff and peer advisors and greater student connectedness to their major. It is clear that students benefit from there being a clear place that students can go and times when students know they can find advisors in this place. Ideally such places should exist within each major (or collection of majors with a cluster) and have both staff and peer advisors located there. Faculty advisors should (minimally) set regular advising office hours and make these known to students. With respect to placement of advisors, some major programs may be too small to support a full-time staff advisor, so that realistically a staff advisor would only be available a part of the time. Either part time advisors for small majors or having a single full-time person covering multiple majors is desirable. The latter offers the added benefit that the advisor is not completely absent for such long periods of time and can direct students on when to come back for appointments as is needed.

In our benchmarking investigations, we learned the importance of mixed competency and developmentally tiered approaches to advising. A specific model emerged, developed by Elizabeth Wilcox, an Institutional Research Analyst with a strong advising background from UC Berkeley. Elizabeth met with UARW and presented her model and discussed many of its components with us. Many of our recommendations are based on these discussions. Her model can be reviewed in Appendix G.

### **Advising Goals:**

Ability to accomplish these goals will require investments from the Provost we have already outlined, as well as from the college and departmental levels.

#### **1. College level accountability:**

- a. We expect to use expectations and metrics provided by the campus (see above, Campus level accountability) to assess the quality and efficiency of our advising systems.
  
- b. We recommend that Interim Dean Delany establish an implementation committee that will work with her leadership team, department chairs, cluster CAOs, faculty master advisors and staff advisors to design and implement a resource allocation and reporting structure that provides a greater connection between advising in the departments and the Dean's Office, incentives for strong advising, and greater accountability for quality. Our analyses revealed that funds already allocated from the dean's office to the departments for advising (RAC formula cells C1+C2) are not always being used in their entirety to specifically address advising needs. In many cases, the greatest discrepancy in funds allocated and those used to cover advising costs are in the largest majors with the highest student/advisor ratios.

There are many strategies that might be used to address these issues, possibilities considered by the committee include, but are not limited to the following:

## **Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013**

- Holding the current RAC allocations from cells C1 and C2 in the Dean's Office and allocating these resources specifically to compensate advising positions (this could include compensation for faculty master advisors, hiring of staff and peer advisors, funding to attend training and participate in national professional development opportunities, e.g. NACADA meetings. Hiring, daily supervision and evaluation could be held in the departments/clusters and engage the faculty master advisor, but formal arrangements would be made to create connections and communications to the Dean's Office advising team, e.g. written expectations, regular mechanisms for feedback and to identify problem areas, a requirement for staff advisors in the major to attend monthly Dean's Office advising meetings. Several hybrid versions of this structure are possible, e.g. the Dean's Office, in collaboration with the faculty master advisor, could hire, administrate and evaluate staff advisors and deploy them to the departments according to need OR advising could be managed in a collaboration between the department chair, CAO and faculty master advisor with a reporting line between the faculty master advisor and the Dean's Office. Clearly, an implementation committee in consultation with the departments may arrive at other strategies.

### **2. Increase visibility, efficiency and quality of advising.**

We expect many of the campus-level investments we have recommended to address efficiency and quality of advising. The Dean's Office should provide leadership to departments to develop strategies to increase visibility and quality of advising. Appropriate quality metrics discussed for the campus in the previous section should be incorporated into merit and promotion and performance evaluations for faculty, peer and staff advisors, and such metrics should also be included and evaluated in undergraduate program reviews.

The committee also found that students do not always know where to find advising and advising is widely decentralized. At the same time, there is a great benefit in the connections between the staff and peer advisors, faculty master advisor, faculty in general at the department/major level. For that reason, among others, the committee did not favor a fully centralized system.

One possibility that was discussed and should be considered by an implementation committee is formation of advising centers that would bring the advising team for a major, or for multiple majors into one location, such that students knew where to go for advising and that there would be staff present during all business hours. In cases where student/advisor ratios are low, this would allow adjustments whereby a single advisor handled more than one major or multiple part-time advisors could interact to meet the needs of multiple small majors in one location. There are already successful examples of these strategies in CA&ES. One successful model is provided by Plant Science in which one advisor manages multiple majors from one location. The Animal Science Advising Center is another example that is highly rated by students. In this center, advisors manage 3 majors. Some CA&ES Administrative clusters have agreed to have one advisor manage all their majors, but have had the advisor move between locations to accommodate locations of the faculty teaching in the different majors. In these cases, the Dean's Office receives frequent complaints from students that the advisor is not accessible to them. The

## **Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013**

reporting lines and strategies for co-locating majors should be carefully considered, but an advising center strategy would make advising more visible and accessible for students.

**3. Increase accessibility to advising, to be measured by reductions in wait times, increases in drop-in advising services, increases in students seen. Achieving this goal will require that college allocations meant for advising are used for advising, as well as additional resources from the Provost.**

Through UCUES and other surveys (BRC Survey), it is clear that students would like mandatory advising on a minimum of an annual basis. Our committee agreed that this would be ideal, but also faced the resource and human challenges of having a mandatory advising system that could deliver quality advising. The tiered system we propose, offers a solution that would be a form of group advising in the first year (see item 5 below).

An important component of student success involves selection having a well-thought-out graduation plan. Students often take courses out of sequence or without important prerequisites. Thus, course schedules need attention every quarter. The committee favored using computer resources, perhaps through an addition to the student advising portal that would require students to create a plan for courses to take in the forthcoming year that would be reviewed by staff and peer advisors (or faculty master advisors if preferred by the program).

Our analysis of advising percentages (Table 1) shows the distribution of 6.9 advising staff FTE in the majors and 7.5 peer advising FTE in the majors and Dean's Office. To reach our goal of 350 students/1 staff advising FTE, we need 8.1 additional staff advisors to be deployed across the college. We are requesting 4 advising FTE from the Provost and recommend that the college use funds allocated in RAC formula C1 and C2 to fund the other 4 advising FTE needed. We value peer advisors, but think that we can only absorb 2.25 FTE without overburdening the staff advisors with supervisory duties. In the Dean's Office, we currently have a 2084:1 student/advisor ratio (2.8 advising FTE). Since the Dean's Office manages more general advising, we are comfortable with a 725:1 ratio, with the exception of undeclared/exploratory students for whom we supply primary advising. For those students (n=561), we will use the 350:1 ratio.

With these adjustments in staffing levels we expect that wait times for students will be reduced, metrics on student success and satisfaction will increase, student retention will improve and advising will become more visible and more proactive.

**4. Create stronger bonds and connectedness between faculty and staff advisors and the Dean's Office.**

The Associate Dean will work with the campus to create training strategies, including handbooks and workshops. The Annual Conference, already funded by the Provost, will be used to engage advisors across the campus and will include faculty master advisors. The Associate Dean for Undergraduate Academic Programs and the Dean's Office Advising staff will collaborate to create training opportunities for faculty master advisors and faculty advisors. Among the goals

**Report of the College of Agricultural and Environmental Sciences Undergraduate Advising Review Workgroup, Submitted June 28, 2013**

will be education on new tools, such as the Student Advising Portal. Part of making this goal possible will be campus decisions on access to these tools.

**5. Provide advising in a tiered structure using a curriculum aimed at different stages of student development. This will require investment from the Provost and full participation of the advising structures within CA&ES.** The model we have in mind is aimed at empowering students to take responsibility for their own progress in their academic career. Our concept is as follows.

<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
<p>A mandatory first year seminar modeled after <i>Position Yourself for Success at UC Davis</i> in the current Career Discovery Group Program first quarter. We see this as an efficient way to deliver mandatory first year advising to freshman. See recommendations below this table for first year transfer students. <i>Position Yourself for Success at UC Davis</i> would be offered under the Science and Society Program in CA&amp;ES. Students who take the Career Discovery Group first quarter seminar would be able to use that seminar to meet this requirement. The syllabus would be focused on campus resources, major choices, meeting faculty and staff advisors, meeting upperclassmen (peer advisors), using on-line resources to track their own progress and for decision-making (e.g. Student On-line Services, student portal, etc.), meeting faculty in specific areas. Homework assignments will include taking Time Management workshops, study skill workshops, test taking workshops. We envision this being taught by Graduate Student Associate Ins who have received mentoring and advising training. Seminars would be geared to</p>	<p>Meet with Faculty and Staff Advisors to discuss academic goals, talk with Faculty advisors and others about undergraduate research opportunities.</p> <p>Internship and Career Center (exploring internship opportunities)</p> <p>Student Academic Success Center</p> <p>Take a GE course in the major area (e.g. ENT 10, ESP 10)</p> <p>Draw from other coursework on campus.</p>	<p>Meet with Faculty and Staff Advisors to discuss academic goals, internships, study abroad opportunities</p> <p>Internship and Career Center (career fairs, writing a CV, communicating with prospective employers)</p> <p>Do internships and undergraduate research.</p> <p>Student Academic Success Center</p>	<p>Meet with Faculty and Staff Advisors to discuss academic goals, employment after graduation, professional and graduate school.</p>

**Report of the College of Agricultural and Environmental Sciences Undergraduate Advising  
Review Workgroup, Submitted June 28, 2013**

<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
majors and undeclared needs. Staff advisors and faculty master advisors would be requested to participate.			
Resources Needed: One Academic Coordinator and one SAO I, under the supervision of the Director of Science and Society to coordinate the curriculum, hire and train the teaching assistants, track progress and make sure all things are running smoothly. At current enrollments with 20 students/section, we also need 6.25 TA FTE annually.			
Additional resources needed for SASC to expand workshop offerings.			

For Transfer students, we will use an adaptation of the seminar developed by Fred Wood and Catrina Wagner, *Navigating the Research University*. Since most transfer students arrive as juniors, activities from years 3 and 4 of the above grid will also be applied.

- ***Framing investments for student success.*** We are setting aside a pool of approximately \$3-4 million for investments we must make to advance priorities, improve quality and address critical gaps even as we continue to face constraints elsewhere in our budgets. For 2013-14, I seek proposals for operating budget investments largely in schools, colleges and divisions, as described below. My final decisions will consider the program goals you articulate, the degree to which my investments leverage and advance local priorities and the ability to measure success.
  - ***Graduate student support.*** Last year, we implemented the Provost's Fellowships in the Arts, Humanities and Social Sciences program. This program will be continued this year. In addition, there are important needs to add teaching assistant positions. The TA positions provide an important training and support opportunity for our graduate students and serve as part of the foundation for our undergraduate instructional programs. I am interested in hearing from deans about strategic opportunities to add TA positions to meet both of these objectives.
  - ***Student advising.*** I appreciate the feedback I have heard from you and your associate deans about the improvements you are implementing as a result of the \$0.5 million we invested this year. Of course, I am aware of the need to invest further to ensure student success and progress towards timely graduation. I seek recommendations from you, in collaboration with Interim Vice Provost de la Peña, for additional investments that improve advising within and across colleges and divisions.
  - ***Services for international students.*** We have heard from many students and faculty about the importance of ensuring that we expand and improve services for our international students. Interim Vice Provost de la Peña is also leading an effort with Interim Vice Chancellor de la Torre, faculty and staff to identify the most immediate investment needs to ensure that our current and future international students receive the support they need to succeed at UC Davis.
  - ***Classrooms.*** We recently initiated a formal planning process to evaluate and determine classroom facility priorities. I will begin setting aside funds this year, \$0.5 million, as part of a multi-year funding plan to improve student access to classrooms. We are also continuing to identify strategies and opportunities to improve existing classrooms, leverage space, and improve facilities and scheduling where possible, to help alleviate the constraints.
  - ***Student employment.*** Our students have long provided an important part of the general administration of the campus. Unfortunately, budget challenges over the last five years have resulted in reductions of some student positions. I seek proposals to add student assistant employment opportunities in core academic and administrative support units.
  - ***Online education.*** I am working closely with Senate Chair Nachtergaele to identify opportunities to invest in infrastructure and provide incentives to faculty to

expand and enhance online education, particularly with hybrid courses. I will set aside funds that can be used to advance the initial priorities and opportunities that emerge.

- ***Support for emerging instructional needs.*** As in previous years, I will continue to provide Interim Vice Provost de la Peña with \$1.9 million for one-time allocations to colleges and divisions to ensure that students have access to courses critical to timely degree completion. In allocating these funds, consideration will be given to the needs identified, overarching instructional goals and with consideration of funds flow as part of the overall campus budget model.



**CAD Proposal to Provost Hexter  
Academic Advising  
April 1, 2013**

**Context:**

The Provost has included a series of initiatives for investing in student success as part of his budget update for the next year (see February 11, 2013 letter to Deans and Vice Chancellors). He seeks recommendations from us, in collaboration with Interim Vice Provost Carolyn de la Peña, for additional investments that improve advising within and across colleges and divisions.

The Provost's request comes during a time when the campus is broadly considering the elements that contribute to student success and what would be needed to prepare for potential growth in the context of the 2020 Initiative. For example, there is a Blue Ribbon Committee of over 100 faculty, staff and students considering the student experience at UC Davis. In addition, the Registrar has assembled 12 administrative units in an effort to create a single portal for students to use. This includes many components students require, including an advising portal.

Viewed in the context of broader campus efforts, it is clear that the Provost's investment interests in advising are aimed at addressing substantive problems faced in the advising arena across campus. After consultation with Vice Provost de la Peña, it is evident that the Provost is seeking initiatives that are well coordinated between colleges.

**Justification:**

As leaders in undergraduate education and academic advising, the Council of Associate Deans has been aware of several issues relative to advising on campus. These issues include: 1) high student to advisor ratios that make it difficult for students to access advising in a timely fashion and for the advising community to be proactive (e.g. offering mandatory advising or special advising programs); 2) a highly decentralized academic advising structure in which there is no central accountability for academic advising quality, advisors are hired in a plethora of position classifications without standardization of experience or training and students are confused about where to seek academic advising; and, 3) a lack of professional development opportunities for academic advisors that would establish and reinforce advising best practices.

**Proposed Resource Allocations:**

Resources are requested to facilitate the development of a more structured model for academic advising and a clear definition of undergraduate academic advising that distinguishes it from the many academic success (tutoring, time management, study skills) and social services offered via Student Affairs. Specific objectives of our request are as follows:

1. Create a senior position reporting to the Vice Provost for Undergraduate Education (VPUE) that would bring expertise in academic advising best practices, research on advising strategies and a background in assessment of advising outcomes. This person would be responsible for assisting with developing professional development programs (see items 2 and 3), serve as a resource for advising questions and would develop strategies to track the

outcomes of our academic advising. He/She would also play a very important role in coordinating academic advising activities with units addressing academic success under Student Affairs. Total request = \$125,000 per year.

2. Create a series of Staff Development and Professional Services (SDPS) introductory advising courses to be completed by all advisors (new and old). The senior position in item 1 would work with SDPS to develop at least two advanced courses that would be taken as advisors continue. We envision a course being required every 2 years, with continued development of new topics by SDPS with assistance of the person in item 1. Total request = \$25,000 per year.
3. Provide support for an annual professional development conference for all campus academic advisors. This would be organized by the person in item 1 with consultation with Council of Associate Deans. The conference would revolve around a new and relevant topic each year. It would be funded by the Provost to support keynote speakers, facilitators, etc. All advising staff would attend. The goal would be continued professional education of advisors and would create a forum for problem solving related to academic advising. Total request = \$20,000 per year.
4. Provide additional allocations for academic advising in college dean's offices and departments housing undergraduate majors. Additional resources are needed to enhance academic advising at the Dean's Offices and in the departments where major advising occurs in many colleges. Each college has different needs and current practices for structuring advising may need revision. The College of Biological Sciences is moving to a centralized model which may work very well for their majors. CAD members will work with their faculty and Deans to consider the best models moving forward and provide a budget estimate by July 1, 2013. Total estimated request = \$1,200,000 per year. This is an estimate and will need to be reconsidered in light of increased student populations with implementation of the 2020 Initiative.

### CA&ES Executive Summary for Provost Resource Allocations to Advising, June 28, 2013

The Undergraduate Advising Review Workgroup (UARW) was charged by Interim Dean Mary Delany to examine undergraduate advising needs in CA&ES and make recommendations via Council of Associate Deans (CAD), to the Provost for resource allocations needed to support undergraduate advising. The committee identified eight broad problems/issues needing immediate attention and formulated a series of recommendations for Provost investments aimed at student success.

#### **The problems we identified are as follows:**

- 1. Low priority given to undergraduate student advising on campus.** The consequences are poor engagement of faculty in advising, chronic understaffing of academic counselors and peer advisors, limited training and professional development opportunities for advisors and poor integration of existing advising units.
- 2. Too few advisors to meet the needs of current student enrollments.** When % advising in position descriptions is used, many majors have high student/staff advisor ratios. In CA&ES student/advisor ratios range from 148:1 to 1,640:1 in the majors and 2084:1 in the Dean's office. Wait time varies by major and location, but can be as high as 2.5 weeks.
- 3. The advising system across campus and in CA&ES is fragmented and lacks clear communication, training, professional development and integration channels for students, staff, administration and faculty.**
- 4. Roles, engagement, opportunities, incentives and assessment of advisors of all kinds are poorly developed.** Faculty in most majors are not well connected to advising and frequently not accessible to students. Master Advisor roles are poorly defined and rewarded, and no training on best practices or agreement on most significant duties exists. Staff Advisors do not have access to training or professional development activities and many do not have an educational background preparing them for a career in advising. Staff advisors experience job classification inequities (classifications in the \_\_\_Asst series and the SAO series), and lack clear incentives and career paths. Advising is not included in faculty merit and promotion reviews or staff personnel evaluation processes, nor are there readily available metrics to help do this.
- 5. Staff Advisors are engaged in diverse teaching support and administrative duties beyond actual advising.** This exacerbates the small amount of time available to serve as advisors.
- 6. Advising across campus is in a reactive state, rather than embracing a proactive system.** The latter would provide guidance to students and achieves a strong academic experience.
- 7. Advising does not meet student needs in a way that is linked to their academic development, level of competency and stage of their academic career.**
- 8. On-line tools are not yet fully available that empower students to track their own progress and that assist advisors of all kinds in providing the most informed advice.**

**In response to these problems we recommend the following actions to be led by the Provost at the campus level:**

**1. Give priority to undergraduate student advising on campus.** Invest in staff and peer advisors through increased FTE, training, professional development opportunities, incentives, and work with the Academic Senate to create strategies for greater engagement and reward of faculty master advisors.

**2. Invest in more advisors.** We propose that advising resources should meet the national benchmark of 350:1 (student/advisor) for staff advising in the majors and undeclared students (handled in the Dean's Office) and 725:1 for Dean's Office advising.

**a. Staff Advisors in the Majors. At current enrollments** investment of 8 new staff advising FTE (2 SAO IIs, 6 SAO Is) is needed. We propose a partnership between the Provost and CA&ES and request 4 advising FTE from the Provost and use of CA&ES Resource Allocation Committee (RAC) department-based formula allocations to invest in the additional 4 staff advising FTE needed. Peer advisors are an important part of the advising continuum and investments are needed in this arena, although student/advisor ratios do not apply well to determining how many peers are needed. The reason for this is that peers require so much supervision, if too many are added it may become a burden to the staff advisors. The 2.25 peer advising FTE we are requesting from the Provost are based on the number of actual peers we can successfully integrate into our advising structures. *NOTE:* Because peer advisors work 10-12 hours/week, 1 peer advising FTE = 4 peer advisors.

**b. Academic Counselors in the Dean's Office.** We propose a higher student/advisor ratio (725:1) for Academic Counselors in the Dean's Office because we are seeing students for additional advising that includes general advising, final degree certification, petitions, and we are the sole unit given authority by the Academic Senate to uphold policy surrounding students in academic difficulty. We are also the sole source of advising for undeclared/exploratory students. For undeclared students, we recommend using a ratio of 350:1 as we have in the majors. The Provost already announced investment in an international student advisor for the CA&ES Dean's Office. Based on the estimated ratios and this additional counselor, we estimate the need for 5.3 additional new staff advising FTE in the Dean's Office at the SAO III level and 1.75 peer advisor FTE.

**c. Investment for the 2020 Initiative.** We strongly recommend that the Provost plan for additional resources to meet this level of excellence as our campus enrollments grow by 5,000 under the 2020 Initiative. In CA&ES, at 20% of total enrollment or 1,000 additional students, this will require an investment of an additional 2.9 staff advising FTE and 2 peer advising FTE in the majors, and 1.4 staff advising FTE and 2 peer advising FTE in the Dean's Office. This said, the committee advocates for review of advising needs annually once the 2020 growth begins. If the investments proposed herein create improvements for students such that retention is higher and there are fewer students in academic difficulty, needs may shift from the Dean's Office to the majors. Other factors may also shift the needs in various ways, including the proportion of the new student enrollment comprised of international students who may need greater advising attention.

**3. Additional investments from the Provost to better coordinate advising.** These include funding of an Advising Coordinator in the Office of the Vice Provost for Undergraduate Education (VPUE), creation of an annual conference to support professional development, and support for continuing education and training for staff advisors. We acknowledge that these are funded via the April 2013 proposal from CAD. Additional training and coordination should also be in the realm of the VPUE Advising Coordinator, e.g. training for faculty master advisors, as well as better coordination and connection of advising units across the campus. **Additional investment in centralized, campus-level training, similar to that already done for RHAT peer advisors is needed for all peer advisors. This will require resources for Housing as they have responsibility for running these courses and we recommend they continue.**

**4. Define advising roles, incentives and develop metrics for advising success.** We expect the VPUE Advising Coordinator will help colleges and departments better define roles, engagement, opportunities, incentives and assessment for advisors of all kinds. We expect this person will help the colleges develop student learning outcomes for advising and metrics needed for assessment of student learning outcomes and quality of all levels of advising.

**a. Faculty Master Advisors.** We request the Office of the Provost to work with the Academic Senate to define roles for Faculty Master Advisors and develop better incentives through creation of prestigious campus awards and promotion and tenure processes to reward faculty advising.

**b. Staff Advisors.** We expect the VPUE Advising Coordinator to develop the roles, training and professional development opportunities for staff advisors.

**5. Address position classifications inequities for staff advisors.** We request the Office of the Provost to work with Human Resources to address the job classification inequities for staff advisors. We recommend that all staff advising positions be in the SAO series, with a minimum of 65% advising (face-to-face advising, individually or in groups). The remaining 35% should be devoted to teaching support, support for the faculty master advisor, curriculum planning, etc. In the Dean's Office the remaining 35% should be devoted to all the special programming, student activities, outreach and policy-driven activities needed. Administrative tasks, such as scheduling classrooms, ordering textbooks, event planning and implementation should be transferred to administrative support positions (\_\_\_Asst or Analyst series depending on the level of work needed). We expect this change to dramatically increase accessibility and quality of advising.

**6. We request that the Provost invest in a proactive advising curriculum.** We do not think resources are available to require mandatory advising, even annually for each student, nor do we think a mandatory advising approach will necessarily empower students in determining their own course. We propose a curriculum that starts with a first year, mandatory seminar, *Positioning Yourself for Success*, for freshman; and, a first year mandatory seminar, similar to that developed by former Vice Chancellor Fred Wood, *Navigating the Research University*, for transfer students. We expect this curriculum and graduate student training associated with it to be planned and implemented by an Academic Coordinator, with assistance of a SAO I. We propose that these activities be conducted in the CA&ES Science and Society (SAS) Program, under the supervision of the Director, currently Dave Rizzo. We know this to be a good home for a program like this because the current Career Discovery Group Program has been implemented in SAS. We envision the Academic Coordinator serving as Instructor of Record for the seminars

and for a class to train the graduate student TAs. We expect to need 6.25 TA FTE to deliver 75 sections of 20 students/section annually (approximately 1700 incoming freshman and transfer students). As enrollments grow, the number of TAs needed will also grow. We expect this growth to be institutionalized via the normal CA&ES TA allocation process; however, additional resources may be needed from the Provost if additional advising staff positions are needed.

**7. Advising Curricula.** We recommend that a continuing curriculum be designed for students as they advance in their development. This should engage them with faculty master advisors, the Internship and Career Center (ICC), the Student Academic Success Center (SASC), undergraduate research opportunities and Study Abroad and expand their understanding of career paths and preparation for graduate and professional school. We expect the VPUE Advising Coordinator to help in this effort and advise that the Provost should plan for increasing investments in campus level support of the ICC, SASC, the Undergraduate Research Center, etc. NOTE: We expect SASC and the ICC to need additional resources in order for them to fully participate and request that this part of the Provost's planning for the 2020 initiative.

**8. Support for on-line advising services.** We strongly advocate continued and expanding support of on-line advising services for students and for advisors. The expected outcome and impact of this work will be greater empowerment for students in their choice of majors, graduation plans, and course selections. They will be better able to follow their own progress and can come to advising appointment prepared with higher level questions for advising. For advisors, these on-line resources represent a sea change in efficiency and accuracy of advising. The quality of advising will be dramatically increased. We look hopefully to a future when this system may also be used as an early warning system so that advisors can seek out students needing help before they are subject to disqualification or are failing in their majors.

The following budget solely represents costs needed to address additional advising FTE in CA&ES (using ratios described in item 2) and implementation of a tiered proactive advising curriculum that includes a mandatory first year seminar. Other needed actions outlined above will require additional resources to other units on campus and engagement of the Academic Senate and Human Resources.

Department	Salary	Benefits rate	Total Benefits	Salary + Benefits	FTE	Total Salary
SAO I	\$ 50,551.00	0.479	\$ 24,213.93	\$ 74,764.93	3	\$ 224,294.79
SOA II	\$ 55,709.00	0.479	\$ 26,684.61	\$ 82,393.61	1	\$ 82,393.61
Peers	\$ 12,000.00	0.013	\$ 156.00	\$ 12,156.00	2.25	\$ 27,351.00
					<b>Subtotal</b>	<b>\$ 334,039.40</b>
<b>Dean's Office</b>						
SOA III	\$ 61,354.00	0.479	\$ 29,388.57	\$ 90,742.57	5	\$ 453,712.83
Peers	\$ 12,000.00	0.013	\$ 156.00	\$ 12,156.00	1.75	\$ 21,273.00
					<b>Subtotal</b>	<b>\$ 474,985.83</b>
<b>First Year Seminar</b>						
Graduate Student Associate-In	\$ 35,310.00	0.013	\$ 459.03	\$ 35,769.03	6.25	\$ 223,556.44
Academic Coordinator	\$ 63,000.00	0.331	\$ 20,853.00	\$ 83,853.00	1	\$ 83,853.00
SAO I	\$ 50,551.00	0.479	\$ 24,213.93	\$ 74,764.93	1	\$ 74,764.93
					<b>Subtotal</b>	<b>\$ 382,174.37</b>
					<b>Grand Total</b>	<b>\$ 1,191,199.59</b>



COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES  
DIVISION OF AGRICULTURE AND NATURAL RESOURCES  
AGRICULTURAL EXPERIMENT STATION  
COOPERATIVE EXTENSION  
OFFICE OF THE DEAN  
(530) 752-1605 (Administrative)  
(530) 752-0108 (Students)  
(530) 752-9049 (Fax)

ONE SHIELDS AVENUE  
DAVIS, CALIFORNIA 95616-8571

April 19, 2013

**DIANE ULLMAN**, Associate Dean for Undergraduate Academic Programs  
**KIM MAHONEY**, Academic Counselor, CA&ES Dean's Office  
**RUSS HOVEY**, Professor, Animal Science  
**ELIZABETH CLARK-ANIBABA**, Student Affairs Coordinator, Agricultural and Resource Economics  
**GALYDA ERDMAN**, Student Affairs Officer, Human Ecology  
**SUE EBELER**, Professor, Viticulture and Enology  
**MARCEL HOLYOAK**, Professor, Environmental Science and Policy  
**SARA REED**, CAO, BFTV Cluster  
**SI JING YEAP**, Peer Advisor

**RE: CA&ES Undergraduate Advising Review Workgroup**

Dear Colleagues:

The Provosts budget update for 2013-14 includes a series of initiatives calling for investment in student success. Among these, is an initiative for improving undergraduate student advising.

For our college, this initiative presents an opportunity for CA&ES to examine its advising community structure and efficacy and to propose strategies to reach for excellence. At the March chair's meeting, the group supported assignment of a workgroup to consider the current structure of CA&ES undergraduate advising and advise Associate Dean Ullman and Dean Delany with regard to strategies that could improve the advising we offer.

This letter is to request your participation on this workgroup.

The charge for this workgroup is to develop a proposal for the Provost to improve CA&ES undergraduate academic advising in the context of the current campus initiatives and with regard to a model incorporating the best of what we already offer. This workgroup will advise Associate Dean Ullman as she works with the Council of Associate Deans and Vice Provost de la Peña to respond to Provost Hexter's advising initiative.

The first meeting will be two hours long, followed by several one hour meetings. Carol Simmons will contact you early next week to schedule the first meeting.

If you cannot commit to participation in this workgroup, please let me know immediately.

Sincerely,

A handwritten signature in blue ink that reads "Mary E. Delany".

Mary E. Delany  
Interim Dean

DU/lf



## **Survey of Blue Ribbon Committee Members Major Themes in Responses**

### **Advising**

**Personal, consistent mentoring and advising within the context of a large public institution is a challenge.**

#### **Insufficient advising**

Entering undeclared students get little academic advising.

Students are unaware of resources.

#### **Advising need outweighs advising resources.**

high adviser-to-student ratio (especially considering growth goals)

Advisers can't spend quality time advising.

long wait time to see an adviser (weeks)

inconsistent departmental adviser-to-student ratio - 2:800 vs 7:300

#### **Advising is decentralized, disjointed, inconsistent, and confusing.**

Students are unclear where to go for advising, make an appt in the wrong office, have a long wait for the appt, only to be told that it's too late to solve the problem.

Advisers are not consistently helping undeclared students select courses that will fulfill requirements of multiple degree options.

Having different academic advisers causes difficulties.

Some majors require fairly rigid adherence to a sequence of courses and students are best served by having one departmental staff adviser.

There are inconsistencies in adherence to rules that vary by department and make signing up for the right class very confusing (e.g. high school AP credit).

#### **Other Comments**

Students need financial literacy advising.

International students have different advising needs and require more time.

Cultural issues impact some students' willingness to seek advising.

Comments on peer advisers differed by role. Staff & faculty - strong peer advising program needs more resources and greater consistency in the training across campus. Students - peer advisers not as knowledgeable.

Comment from a student – "So many [of my friends] are staying an extra year or two just to complete the courses they need for their majors. Advisers should be trained well enough to know which courses fill up quickly and encourage students to have a back-up plan in case they do not get into their courses they plan to take that quarter/year."

Another student commented on the high attrition rates within underrepresented communities.

### High student to advisor ratio

- Volume / Ratio
- Because of caseload in some colleges, advising appointments for students in SD status can happen too late
- 15 minute advising time (e.g. in engineering) is completely unrealistic – either you have to make a second appointment or the adviser runs over and everyone else is delayed
- Insufficient opportunity and time for advising appointment (15 minutes, annually) – leads to mistakes that cause students to remain for an extra year to complete graduation requirements.
- Time constraints prevent staff advisers from seeing students as “the whole student” vs. a compartmentalized issue (academic, life, financial)
- Experience of AP is terrifying – advising in Dean's Office came from multiple individuals and in 15-minute increments – period is too short to get anything accomplished.

### Complex System, Students Confused

- Clear information is not easy to find – in general catalog but many students do not go to the resource
- Need to simplify / make some of the unit requirements more standard – minimum academic progress regulation can conflict with unit count
- Messaging – effective communication of available resources for students that reaches across culture and situations
- Undeclared and international students often don't know where to seek advising
- Difficult to find clear policies / information about the advising process on line, e.g., what happens when a student goes on AP / SD – what happens, what does the student have to do to clear the designation – need centralized information portal; when do they get an email, how much time after receiving the email do they have to respond, how severe is the problem – needs to be uniform from college to college.
- Disconnect between staff impression that students have the information given several times through several venues, but students say they don't have the information
- There is a unique pathway for each student – formulaic advising is not possible
- New generation of students who need a check list of what to do – while university expectations is much more intricate and complex than for prior generation
- Students don't know the most basic information, e.g., how many units per quarter are needed to achieve minimum progress (from a peer adviser)

### Large, Decentralized System

- Lack of Clarity / too decentralized
- Maintain continuity and centralize
- Loss of connection between faculty and advisers – communication is essential
- There is a disconnect between the different advising resources – peer, departmental, dean's office for academic, and then for social and financial—what are the options? Confusing, especially for a new student
- Decentralized structure provides conflicting information
- Information about the process for each student is not shared once the advisee leaves the session – adviser never knows what happens to them
- Communication between departmental and college advisers about process, particularly for Subject to Dismissal, Academic probation, etc.
- Students may be doing not well in a specific class but overall GPA shows they are okay.

### Need for training

- Peer advisers are not that helpful; staff adviser in the department is better for objective and approachable advice. Maryellen Guzman Aguilar noted as being especially helpful in College of Bio Sci
- Both faculty and staff need to have access and training to navigate the same technology that the students are using
- Advisers are giving conflicting messages to students, and this conflicting information can lead to student dismissal because they followed the wrong advice
- Many advisers are not culturally competent and this figures into the student outcomes
- On last point: can reset the count when a student changes majors but many advisers do not know this
- Advising is not seen as a profession that requires training and expertise – seen as an administrative function – yet advisers have 15 minutes to help students make career-altering decisions – better training and prep is needed
- Faculty advisers don't always know the changes that have occurred in student resources because they have not been kept up to date on the changes to resources for students. Tend to rely on SAOs to provide that information.

### Students Reluctant or Choose Not to Get Advising or Not From Designated Office

- Students in trouble tend not to come to the master adviser
- Students not taking advantage of opportunities for advising
- Shy students – particularly culturally diverse / international students who are intimidated by Dean's offices, etc.
- Disengaged student: student who thinks they can do it all on their own. Seem to be a lot of students who just wander through the experience and don't seek advice until their fourth year.
- From Orientation leader / first-year-experience peer adviser – First tier of advising for first- year students. First-year students do not see this as a resource / tool – freshmen flock advising centers for help when they have to register for courses second quarter. Many resort to friends for advice that turns out to be bad advice.
- Social stigmas associated with CAPS advising
- Some students from other cultures have a face issue with seeking help / counseling / advising
- Culturally diverse students often seek advising in cultural studies programs vs. their major – feel more comfortable
- Faculty Perspective: Students don't come to faculty advisers
- Students who need advising the most are the least likely to go.
- Student Perspective: Students don't know what questions to ask and many don't know faculty advisers are available to them. Faculty advisers are not seen as very accessible.
- Stigma against going to advising / asking for help sometimes a barrier.
- How to get students to seek advising as part of a positive process, vs. waiting until there is a problem

### Faculty time, focused on research, lack of reward structure

- Culture of a large research institution – how does that balance advising need with the incentive for faculty to connect with first-year students—nature of large research institution somewhat goes against the undergraduate needs
- Faculty have too many students in their classes to have the time for personal interaction – overwhelmed by numbers of students – TAs relied upon to know them

### Lack of Advisor Consistency

- Counseling for mental / behavioral health -- students are reluctant to disclose mental health issues to academic advisers because they get a different adviser each time and have to start all over again with their background
- Being advised within a tract of a specific major can present student with conflicting advice about what courses are acceptable – some students take a course recommended by the major adviser to find that the tract adviser will not sign off on the course.
- Conflicting advice from major vs. Dean's Office advising.

### Advisors' Other Responsibilities

- Advising staff have other administrative responsibilities that sometimes conflict with advising demands

### Need Financial Literacy Training

- Lack of financial information in Orientation (loans, managing budget, leaving parents' home and being financially independent) made it difficult for students living away from home.

### Information Overload in Orientation

- Freshmen orientation was not useful. All crucial information was on the last of three days, when they were picking classes. It was very stressful.
- Orientation memory: taking a tour; no memory of basic information on academic requirements, AP/SD, etc.

### Institutional Size, Lack of Community

- Sense of community is missing – lack of feeling of belonging
- Institutional size – how to personalize the advising experience
- How to help students eliminate the feeling that they are on their own

### Misc Challenges

- Enabled Students (helicopter parents)
- Financial obligations for students – higher expectations because students feel the financial cost of their education
- Not having enough understanding of the larger picture for students (e.g. cost of education and impact on family)
- International students face much harsher potential consequence from AP – can't just go home for the summer and take a course at a community college and return to campus next quarter
- Not enough time in the quarter system to make changes

### Mandatory Advising

- Mandatory advising – do we have the resources for this?
- Mandatory meeting w advisor when declaring a major
- Lock registration if adviser is not seen at each quarter by freshmen
- Mandatory advising – 2<sup>nd</sup> and 4<sup>th</sup> year
- Mandatory first-year seminar course (navigating the university)
- Early degree checks

### Assigned or Consistent Advisor

- Assignment of specific adviser once that adviser has seen the student, to achieve some continuity
- Continuity of advising over time for sake of follow-through and preventive action
- Single major adviser from start to finish, develop opportunities for relationships between advisers in different levels and students

### Triage Center

- Front desk SAOs and peer advisers doing triage all day with student walk-ins to reduce the advising caseload
- Centralize advising information – one site that students can access to identify where to get the advising they need
- Develop a self-help triage kiosk
- Identify best person/office to provide specific support and communicate to campus officials so students are directed appropriately

### Drop-In Advising

- College of Bio Sci seems to have a good system for staff advising – departmental and college-wide system; drop-in hours; shortage of advisers in some colleges seems to be an issue.

### Training / Professional Development

- Cross-training for faculty and staff
- Campus-based staff training / retreat to share best practices
- Continuing education for advisers through campus-based training (SDPS advisers series)
- Integrate advising efforts and resources with SCC cultural diversity homes – e.g., a triage center; mobile advising
- Better staff training on AP/ SD processes so policies and procedures are understood
- More consistent training for advisers across campus – professional development opportunities
- Mandatory continuing education for advisers via advising meetings on campus
- Better training for all faculty about some of the information students are seeking
- Centralized training for peer academic advisers / all advisers
- Professional development funding for staff advisers to be engaged in professional and national organizations

### First-Year Seminars and/or University 101

- Different type of First-year experience, e.g., Freshman 101 course
- 2-3 first-year seminars on understanding the research university in the resident halls per quarter
- Require all students to take a "new beginnings" type course that gives students survival information and through which students connect with advisers. Freshman seminar – navigating the research university
- Student comment: was not very helpful – students were not very happy with the course
- Use student peer advisers as instructors for the seminars – they perceive the compensation as adequate
- Organize freshmen seminars more centrally, advertised so all are filled (some are impacted and others are not to capacity)
- Increased funding for first-year seminars – connecting with faculty in small, safe environment
- Mandatory first-year seminar course (navigating the university)

### Student Education / Training

- More workshops on how to navigate Student Dismissal warning
- Train students to be self-sufficient and confident
- Present some of orientation information in emails sent ahead of time (academic plans, financial information, etc.)
- Advising needs to be simplified and happen earlier – what does that look like?
- More pro-active approach to transfer students before they arrive.
- Review and potentially revise orientation to provide more concrete academic information – what do they need to take and to do to stay on track academically

### Clarify Degree Requirements & Information for Students

- Flow path to follow for freshman / transfer students
- Curricular roadmaps
- Publish a resource navigation tool that provides students with year-by-year what to expect

### Develop Early Alert System

- Better use of registrar information to catch students earlier in the process of going downhill academically
- Provide faculty advisers with list of students who are at risk of AP/SD (requires breaking down GPA so individual course performance is used to show academic vulnerability)
- Early academic warning system

### International Student Support

- More networking opportunities and information for students coming from out of the country
- Better support services for foreign students to get them through their first year on campus
- Enhance UCD's reputation worldwide by providing the highest level of support and experience for international students
- SASC foreign student support program to acclimate to our culture & improve English skills needs to be more visible/accessible

### Increase Faculty-Student Interaction, Provide More Incentive for Faculty

- Reinforce support for faculty mentoring / advising
- Incentive for faculty to participate as instructors – they are not given release time, not reviewed for merit and promotion
- Informal interaction with faculty can be very useful in socializing students to faculty advising process
- Office hours for faculty to advise students on life/career issues related to major, currently too focused on academic advising
- Revisit class size – to maximize opportunity for students and faculty to make meaningful connection

### Use Technology

- Technology-based resources such as how-to videos where students could hit “play” and receive information on what they need to do (e.g., take better notes), e.g., Dartmouth College videos
- GE Search tool and Degree Navigator – helpful in seeing what requirements one needs but does not say what classes are available to fill those requirements; they don't work for all colleges
- Electronic resources can also do a lot of triage through FAQ type processes that walk students through different processes depending on their responses to specific process questions
- On-line system where students enter desired major / minor and the computer gives them a roadmap
- More on-line resources of where students can go for support
- Use technology to predict potential problems and provide supportive advising
- More effective use of the resources we have for advising (e.g., technology to answer the easy questions, such as degree navigation – development of an effective degree audit system)
- Student portal needs to include an advising portal that has been developed with student and faculty input and testing
- Student information wiki for advising so they can be up to date on resources
- On-line assessment and review for students to know whether or not they are ready to take a specific course

### Misc Opportunities / Approaches

- Allocating advising resources to balance majors with heavy unit requirements with those with fewer units required
- Streamline information between what faculty and student affairs officer
- Review process for staff include mentoring
- Centralized non-specialist who has generalized knowledge of the school
- More networking opportunities and information for students coming from out of state
- Partner with school of ed to tap into knowledge of educational process and student needs
- Ag College & ICC partnership – cohorts of 20-30 undergrads and a graduate student mentor – career exploration, assessments, internship application completion; retention rate is very high vs. students not in this program
- Provide some kind of opportunity to meet with parents at the time they are on campus with the students
- More communication between faculty at UC Davis and community colleges, and undergrad and professional school faculty
- More funding / administrative support for student-run holistic retention programs
- Find ways to convey the reality with cause & effect so student has conceptual understanding / context for the advice
- Dean's office advising is necessary to keep student on track for graduation and how to navigate AP/SD warnings
- Is there a way for the campus to provide a culture that supports advising
- Resources for graduate students to mentor undergraduates / become points of contact

### Non Advising

- Change course caps to reduce student triage needs
- Examine the quarter system to see if the change to semester might make the process of fixing a problem easier
- Four-year finish: reduce the load requirements or relax the push to finish in four years. Preference is to reduce the load requirements (perceived as “academic bureaucracy”)
- Revisit unit load / student contact hour formulation so course units can be raised to be closer to that of other UCs – UCD is low

### Technology

- Tech-based resources / streamlined / centralized information repository
- GE Search Tool / Degree Navigator overhaul
- **Centralized advising website that triages and empowers students**
- Communication to get everyone on the same page across departments and colleges: technology-based portal
- Computerized system to support the advising process and continuity: student advising EMR (Electronic Advising Record: EAR!)

### Mandatory Advising

- Mandatory annual advising, beginning early on
- Require a signature for permission to register

### Mandatory First-Year Seminar

- First-year seminar required – would need 350 sections to keep the groups small. Electrical Engineering and Computer Science require this for their majors – 150 students in the cohort

### Triage Center

- **Centralized point for triage**
- Advising triage center – especially for students who don't have a declared major/ direction – MU located – make process more user-friendly / welcoming
- Develop a clearinghouse of information – resources on how to identify where specific advising services reside and how to access them – so information is given to non-formal advisers
- Centrally located web-based information on AP/SD and how to navigate that process

### Clarify Degree Requirements & Information for Students

- Flow path for freshman / transfer to follow

### Training for & Communication Among Advisors

- Streamline information between what academic units and Student Affairs offer
- **Internal best practices sharing among student advisers**
- More broad-based training for the informal as well as formal advisers
- Formalize regular training and meeting for all advisers at any level so conversation and networking occurs across advising levels

### Assigned or Consistent Advisor

- **Change structure so academic advisers have ongoing relationship with students**
- Assign advisers so there is continuity

### International Student Support

- **International student support – multi-lingual/culturally nuanced electronic portal**
- International Students – mandatory education on health, immigration, etc.

### Evaluate Efficiency of Resource Use

- Focus on efficiency campus-wide – right students are getting the needed advising and that students are taking the classes that will get them to graduate on time.
- Assess current resources to see if they are being utilized efficiently: The Office of the VC of Student Affairs and the Office of the VP for Undergraduate Education each manage a portion of the advising services. This recommendation is to review this split management to assess this approach for potential change to maximize centralization and efficient delivery of advising services.

### Misc Priorities / Recommendations

- Increasing student use of advising resources
- Standardize dept web information so students know where to find information regardless of the dept or college
- Make advising more personal and enjoyable for the student
- Increase retention of URM students – percentage of URM students on AP seems to be increasing
- Find ways to reduce the caseload for staff advisers
- Make orientation a primer for each year but especially for first year
- Develop a roadmap that is more holistic – how extracurricular activities can feed and enhance the academic experience, showing how activities and courses will play out in time to degree and quality of educational experience
- Put student photos in on-line system so professors get a student names, photos and ID numbers with their course rosters
- Office hours outside regular 8-5 schedule
- Develop student-led initiatives to disseminate information about different opportunities and resources
- Re-message advising – remove the stigma – marketing and communications strategies

**Report of the  
CA&ES *ad hoc* Curriculum Planning Committee**

Oral Presentation to CA&ES Executive Committee,  
February 2012

Final Report submitted to CA&ES Executive Committee,  
May 2012

**Committee Members**

Susan E. Ebeler, Viticulture and Enology (chair)  
Larry Harper, Human and Community Development  
Mark Matthews, Viticulture and Enology  
Kyaw Tha Paw U, Land Air and Water Resources  
Ken Shackel, Plant Sciences  
Truman Young, Plant Sciences  
Diane Ullman, CA&ES Dean's Office, ex-officio

## Executive Summary

The College of Agricultural and Environmental Sciences (CA&ES) has historically been a national and international leader in research and education in agriculture and environmental sciences. Critical issues currently face our College, however, and will continue to challenge our abilities to offer strong academic programs for undergraduates. This report provides information obtained during a review of the CA&ES curriculum from April 2011-Feb. 2012. The review included meetings with and surveys of CA&ES faculty, students, staff advisors, and College administrators. While many areas were evaluated, several common themes emerged and our report and recommendations are structured around these themes. Our overall findings and recommendations are summarized here:

- **General comments/Resource allocations.** It is critical that college-wide decisions regarding the curriculum and resource allocations be based on transparent budget models, the appropriate use of available data and statistical analyses, and sound pedagogical reasoning. Specific recommendations in this area can be found on page 37.
- **Identity of Majors.** CA&ES offers many Majors that are unique within UC, that provide training for careers that are critical to the State of California, and that can provide significant areas of growth and a distinctive identity for the Campus in the coming years. Nevertheless, there is still much that can be done to enhance the stature of these Majors and to demonstrate their value to the campus and to the public/stakeholders. Specific recommendations can be found on page 38.
- **Faculty FTE needs within Majors.** Many Majors are facing limitations in faculty FTE available to teach courses in their programs. Recommendations that can be used to begin to address these limitations can be found on page 38.
- **Size and number of Majors.** The *ad hoc* Committee recommends that we take a broad view of accommodating students in our College, regardless of their “home” Major. In this model, Majors serve several basic functions: (a) they provide a pre-packaged set of courses that provide the students with meaningful combinations of courses; (b) they tell the outside world that students with degrees of a particular name have taken an appropriate set of credentials as reflected through their courses; and (c) they provide advising resources to help students navigate these sets of courses. Resource allocations can then be defined to support these functions of a Major program; further recommendations are found on page 39.
- **Class sizes.** Student surveys and educational research indicate that smaller classes are preferred and result in better development of higher order critical thinking skills among students. Therefore, the *ad hoc* Committee sees few pedagogical reasons to encourage larger classes. However, budget limitations still require consideration of mechanisms to efficiently and effectively allocate resources to courses; recommendations in this area are provided on page 40.
- **Delivering prerequisites and access to courses.** Students report increasing difficulty in enrolling in prerequisite and core courses within the College and across the Campus. Mechanisms are urgently needed to address this problem in order to ensure that students can complete their degrees in a timely manner. Specific recommendations can be found on page 40.



- **Development of ‘soft skills’ and other curricular issues.** The *ad hoc* Committee review identified several areas for curriculum development within CA&ES that could enhance opportunities for our students. Recommendations in this area are found on page 41.
- **Program Reviews.** Undergraduate Program Reviews provide important opportunities for Majors to critically evaluate their strengths and weaknesses; however, full implementation of the recommendations from the reviews does not appear to consistently occur. Recommendations to strengthen the Program Review process can be found on page 41.

While the *ad hoc* Committee recognizes that the recommendations are diverse and implementation may require significant time and resources, real improvements in these areas can only be made through concerted efforts at both the Program/Department level and at the Administrative level. An atmosphere of collegial compromise will be required to address some of these issues. However, we feel that the effort will result in a curriculum that will effectively meet the needs of current and future students.

## Table of Contents

	<i>page</i>
I. Background and Underlying Questions.....	6
II. Current Majors in CA&ES and Historical Trends .....	8
III. Faculty Teaching Loads and Allocations.....	11
IV. Mean Class Sizes in CA&ES.....	14
V. Current Calculations for Resource Allocations to Majors and Courses .....	17
VI. Coordinating Prerequisites for Majors in CA&ES .....	19
VII. Program Reviews and Cross-College Collaborations .....	20
VIII. Summary of Faculty and Advising Staff Interviews.....	24
Economic realities.....	24
Common themes across CA&ES Majors and courses.....	24
Possible future themes or Majors lacking in the College that should exist .....	25
Redundancies in Majors and courses .....	25
Size of Majors .....	25
Size of classes .....	26
Prerequisites, inter-departmental, and cross-college Majors .....	26
Some things that we are doing well .....	27
Suggestions and areas we can improve.....	28
IX. Summary of Student Surveys and SARI/UCUES Data.....	31
Size of Major/Specialized vs. broadly themed majors.....	31
Class sizes/Laboratory, field, studio classes/On-line courses.....	31
Prerequisites/Course availability .....	31
Internships.....	31
Access to faculty and advisors .....	32
Other .....	32
SARI survey data and size of Major .....	32
X. Summary of Relevant Educational Research.....	34
How students choose Majors .....	34
Research on size of majors, class size and educational outcomes .....	34
Soft skills needed by new graduates .....	35
Engaged scholarship .....	35
Role of research institutions as innovators and early adopters of new programs...	36
XI. Recommendations.....	37
XII. Summary/Concluding Remarks .....	43
XIII. Bibliography.....	44
XIV. Appendices.....	46
1. Charge to Committee .....	47
2. The National Academies (2009) Guidelines for Review of Undergraduate Programs in Food and Agriculture.....	49
3. Brief History of Majors over Last Approximately Ten Years .....	50
4. Major Enrollments by Class Standing (2006-2011) .....	55
5. CA&ES Enrollments by Majors (2006-2011) .....	63
6. Comparison of Majors offered in Colleges of Agriculture at Selected Comparison Institutions .....	67

7.	CA&ES 2010-11 and 2011-12 Resource Allocation Formula Charts .....	68
8.	Listing of Most Recent Program Reviews Available and Surveyed for this Report .....	70
9.	Master Advisors and Staff Advisors: <i>ad hoc</i> Curriculum Planning Committee Interview Questions, Fall 2011 .....	71
10.	<i>ad hoc</i> Curriculum Planning Committee Student Survey Questions, Fall 2011 .....	73

## List of Tables

<b>Table 1.</b>	Number of Majors and total undergraduate full time equivalent students (FTES) across UCD colleges (enrollment data from 2010-11) .....	9
<b>Table 2.</b>	Number of Majors offered in Colleges of Agriculture at selected peer institutions in the US.....	9
<b>Table 3.</b>	Teaching loads in the College of Agricultural and Environmental Sciences, relative to the UC Davis Campus as a whole.....	11
<b>Table 4.</b>	UC Policy on minimum class size .....	14

## I. Background and Underlying Questions

The CA&ES *ad hoc* Curriculum Planning Committee was established in April 2011, by the CA&ES Executive Committee, as a result of discussions with and a request by the Dean's office. The *ad hoc* Committee was charged with reviewing and evaluating the curriculum and Majors in CA&ES and providing strategic recommendations to the CA&ES Executive Committee and Dean Neal Van Alfen. A copy of the charge to the Committee is included in [Appendix 1](#) of this report.

The current budget climate, as well as the fact that a significant number of CA&ES faculty are expected to retire in the next 5-10 years (in 2010, 58% of the College faculty were over age 55<sup>1</sup>), present numerous challenges for maintaining strong academic programs. However, these challenges also provide our College, and our Campus, with an opportunity to evaluate the curriculum and to identify approaches and strategies that will offer undergraduate students opportunities to learn in diverse environments, to gain the skills to be creative and productive members of an increasingly global society, and to be life-long learners in an age where technological advances and the availability of information are increasing at unprecedented rates. The need for such a review was previously identified in the 2007-2012 Academic and Strategic Plan, which recommended:

“a comprehensive review of CA&ES majors and curricula...to ensure that our academic programs are relevant and attractive. At the same time, lower-division portal curricula should be developed to help guide students into our majors, along with an outreach and marketing plan for students and stakeholders.” [From Academic and Strategic Plan 2007-2012; available on-line at <http://caes.ucdavis.edu/facstaff/aspc-1/ourcollege/academic-plan-2007/>]

More recently, the CA&ES Academic Prioritization Committee Report recommended a thorough review of the Undergraduate Programs within CA&ES (July 2009, pp 44-45; available on-line at [http://caes.ucdavis.edu/ourcollege/files/Focus\\_on\\_the\\_Future.PDF](http://caes.ucdavis.edu/ourcollege/files/Focus_on_the_Future.PDF) . Additional specific recommendations were made in this previous report and they will be further discussed throughout this *ad hoc* Committee report.

In response to the request by the CA&ES Executive Committee the *ad hoc* Curriculum Planning Committee met from April-Dec., 2011. Three over-arching questions provided a framework for our discussions and review:

1. How can we as a faculty and as a College deliver a curriculum that serves our students and is a curriculum the faculty can and want to deliver?
2. Can we create a strategic vision for the curriculum across the College (and possibly across the Campus)?
3. In times of continuing limitations in resources (*i.e.*, limited faculty FTE, TA and staff support, etc.), what mechanisms can we identify to efficiently deliver a curriculum while maintaining strong programs and Majors?

Our goals were to identify current strengths and weaknesses within our existing Majors and curricula and to identify ways to strengthen the curriculum broadly across the College.

During our review we consulted with CA&ES administrators, faculty, staff and students. Undergraduate Program Review Reports for all Majors in the College were reviewed as well as current SARI survey data from students and alumni in the College. The current RAC formula funding model as well as the Chancellor's 2020 Initiative<sup>2</sup> and the proposed Incentive-Based Funding Model<sup>3</sup> were reviewed. Finally, our review was also informed by a wide body of academic research that is aimed at understanding the factors that influence students' educational outcomes and satisfaction with their academic programs. Two recent reports also provided a framework for our discussions and recommendations:

The National Academies. 2009. *Transforming Agricultural Education for a Changing World*. National Academies Press, Washington DC. (see also [Appendix 2](#)).

Bauerle et al. 2009. *Vision and Change in Undergraduate Biology Education. A Call to Action*. C. A. Brewer and D. Smith, eds., American Association for the Advancement of Science, Washington DC.

We hope that this report, and its recommendations, will provide guidelines for strengthening the curriculum within CA&ES and for establishing CA&ES as a campus leader in engaged scholarship that addresses the needs of a wide variety of student and community stakeholders.

### **Committee Members**

Susan E. Ebeler, Viticulture and Enology (chair)  
Larry Harper, Human and Community Development  
Mark Matthews, Viticulture and Enology  
Kyaw Tha Paw U, Land Air and Water Resources  
Ken Shackel, Plant Sciences  
Truman Young, Plant Sciences  
Diane Ullman, CA&ES Dean's Office, ex-officio

**Acknowledgements:** The *ad hoc* Committee extends a special thank you to Carol Simmons in the CA&ES Deans' office for administrative support and assistance with data collection and analysis.

<sup>1</sup>N. Van Alfen, UC Davis College of Agricultural and Environmental Sciences. 2010. *The Aging of our Faculty. Demographics Crisis and the Case for Immediate Investment*.

<sup>2</sup>2020 Initiative: [http://chancellor.ucdavis.edu/initiatives/2020\\_Initiative/index.html](http://chancellor.ucdavis.edu/initiatives/2020_Initiative/index.html)

<sup>3</sup>Incentive-Based Budget Model: <http://budget.ucdavis.edu/budget-planning/documents/2011-12/Overview-incentive-based-budget-model-FINALv3.pdf>  
and <http://budget.ucdavis.edu/budget-planning/documents/2011-12/Budget%20Model%20Working%20Paper%20Undergrad%20Tuition%20V01.pdf>

## II. Current Majors in CA&ES and Historical Trends

CA&ES currently supports 27 undergraduate Majors and an Undeclared/Exploratory program, a pre-major advising program that provides students an opportunity to explore their academic interests prior to declaring a major. CA&ES also administers the Science and Society (SAS) undergraduate teaching program that serves students from all majors. CA&ES Majors are organized around three broad themes: Agricultural Sciences, Environmental Sciences, and Human Sciences, and as noted in the CA&ES Mission Statement these Majors “advance, integrate, evaluate and communicate knowledge of the sciences and technologies of natural resource utilization and conservation, agriculture, food, nutrition, human development, and related environmental, health, safety and policy concerns.” A listing and short description of all current CA&ES Majors is available at <http://caes.ucdavis.edu/StudInfo/ps/ugmajors>. Brief historical information about all current CA&ES Majors is also available in [Appendix 3](#).

Many of the Majors within CA&ES are unique within the UC system (*e.g.*, a partial list includes: Agricultural and Environmental Education, Animal Science and Management, Biotechnology, Ecological Management & Restoration, Environmental Toxicology, Food Science, International Agriculture Development, Sustainable Agriculture and Food Systems, Textiles and Clothing, Viticulture and Enology, Wildlife, Fish, and Conservation Biology) and many are considered top programs nationally and internationally, as noted by recognition from professional societies and private organizations such as *The Gourman Report* (2006). While rankings of Majors that are performed by public and private institutions are difficult to evaluate, and often are based on metrics not directly related to undergraduate education, it remains clear that Majors within CA&ES provide a diverse array of high quality educational opportunities.

The number of separate Majors within CA&ES has remained relatively constant at ~28-30 Majors over the past ~10 years. In the past five years, seven Majors have consolidated, been discontinued, or had their name changed, and this has been accompanied by the addition of new Majors (*e.g.*, Sustainable Agriculture and Food Systems). From 2006-2011, student enrollment in CA&ES increased 23%, from 4,623 to 5,682 students. As programs merge, split, and/or are renamed, it becomes difficult to track student enrollments for individual Majors, however, 5-year enrollment trends for current Majors are provided in [Appendix 4](#). Nearly all CA&ES Majors have had increasing or stable enrollments since 2006; enrollments in three Majors decreased by ~30% or more during this time (Atmospheric Science decreased from 24 to 17 students; Biotechnology decreased from 262 to 180 students; Fiber and Polymer Science decreased from 23 to 2 students) ([Appendix 5](#)).

Data on student retention was not directly available for the *ad hoc* Committee to review. However, within the College, the majority of Majors typically experience increased enrollment of upper-division students as students declare Majors late in their sophomore and early in their junior years and as students transfer in from other programs and community colleges. Summary enrollment data, by class standing, for CA&ES Majors is provided in [Appendix 4](#).

### Comparisons across Colleges at UCD and across peer institutions

When the number of Majors and student enrollments are compared across colleges at UCD, CA&ES has the second highest enrollment and second highest number of Majors (**Table 1**). The average number of students/Major for CA&ES is similar to College of Engineering (COE) and lower than College of Biological Sciences (CBS) and College of Letters and Sciences (CLAS).

**Table 1.** Number of Majors and total undergraduate full time equivalent students (FTES) across UCD colleges (enrollment data from 2010-11).

College	Number of Majors <sup>1</sup>	Total Undergraduate FTES <sup>2</sup>	Average FTES/Major
CBS	9	2,678	298
CLAS	51 <sup>3</sup>	14,842	291
COE	15	1,472	98
CA&ES	27 <sup>3</sup>	3,117	115

<sup>1</sup>CBS Majors: [http://biosci.ucdavis.edu/departments\\_and\\_centers/majors\\_offered.html](http://biosci.ucdavis.edu/departments_and_centers/majors_offered.html); CLAS Majors: <http://advising.ucdavis.edu/majorminorlist.aspx>;

COE Majors: <http://engineering.ucdavis.edu/undergraduate/majors.html>;

CA&ES Majors: <http://caes.ucdavis.edu/StudInfo/ps/ugmajors>

<sup>2</sup>FTES data for 2010-11: [http://budget.ucdavis.edu/data-reports/documents/instruction/default-dept/idwlfte\\_a1011.pdf](http://budget.ucdavis.edu/data-reports/documents/instruction/default-dept/idwlfte_a1011.pdf)

<sup>3</sup>CLAS also has 4 Undeclared Majors in different general subject areas; CA&ES has 1 Undeclared Major.

A survey of the Majors offered in seven comparable Colleges of Agriculture in the U.S. shows that most, including UCD, offer 20-30 Majors (**Table 2**). University of Illinois and Purdue offer over 40 Majors or Concentrations; only Michigan State offers fewer than 20 Majors (and several of those are in moratorium).

**Table 2.** Number of Majors offered in Colleges of Agriculture at selected peer institutions in the US.<sup>1</sup>

Number of Majors	Institution	College
44	Purdue	Agriculture
28	UC Davis	Agricultural & Environmental Sciences
28	Texas A&M	Agriculture and Life Sciences
25	U. Florida	Agriculture and Life Sciences
24	Iowa State	Agriculture and Life Sciences
23	Cornell	Agriculture and Life Sciences
19	Michigan State	Agriculture and Natural Resources
11 (42) <sup>2</sup>	U. Illinois	Agricultural, Consumer, and Environmental Sciences

<sup>1</sup>Data for comparison institutions obtained from corresponding web sites, Feb. 2012.

<sup>2</sup>U. Illinois: 11 Majors incorporating 42 concentrations, which appear to be similar to Majors at other Universities/Colleges.

A comparison of the number of students per Major across peer institutions indicates that UCD is in the middle of comparison Colleges of Agriculture in the US, with 115 students per Major (**Table 1**). University of Illinois is at the low end of the range with ~65 students/Major and Texas A&M is at the high end at ~190 students/Major (data for peer institutions obtained from corresponding web sites).

A direct comparison of the names of the Majors offered at Texas A&M, Cornell, and UCD ([Appendix 6](#)) reveals few differences, although each College offers a small number of Majors that are unique or unusual such as 'Recreation, Park and Tourism Sciences' at Texas A&M and 'Fiber and Polymer Science' at UCD.

The above comparisons cannot reveal insights into the efficacy or efficiency of offering high or low numbers of Majors, but they do show that UCD is not out of line with the offerings of other leading Colleges of Agriculture. Thus, this analysis does not generate cause for change based on what other colleges are offering.



### III. Faculty Teaching Loads and Allocations

A critical component of assessing the ability to deliver a curriculum is the teaching load of the faculty in the College. Resources to Departments and Majors are based, in part, on student credit hours; therefore Departments and the College balance faculty teaching assignments, teaching loads, and class sizes to meet educational goals and student demand, as well as financial resources.

For the Campus as a whole, the number of Student Credit Hours (SCH) per I&R FTE has averaged 928 over the past 15 years (**Table 3**). This is a zero-sum game (*i.e.*, there are a  $\pm$  fixed number of SCH taught across campus each year). Campus-wide teaching loads only increase when the ratio of students to faculty increases. So the question for our College becomes: How does CA&ES teaching load compare to the Campus as a whole? This will be discussed further below.

**Table 3.** Teaching loads in the College of Agricultural and Environmental Sciences, relative to the UC Davis Campus as a whole.

Year	SCH/FTE				Units (/9) w/ more	% that CA&ES exceeds Campus
	Per Q CA&ES	Per Q Campus	Per yr CA&ES	Per yr Campus		
1995/96	335	310	1005	930	3	8.1
1996/97	359	316	1077	948	3	13.6
1997/98	372	315	1116	945	2	18.1
1998/99	398	316	1194	948	0	25.9
1999/2000	377	306	1131	918	0	23.2
2000/01	385	312	1155	936	1	23.4
2001/02	388	314	1164	942	0	23.6
2002/03	368	316	1104	948	2	16.5
2003/04	333	306	999	918	2	8.8
2004/05	323	291	969	873	2	11.0
2005/06	342	291	1026	873	3	17.5
2006/07	349	297	1047	891	3	17.5
2007/08	383	300	1149	900	1	27.7
2009/10	394	319	1182	957	1	23.5
2010/11	411	330	1233	990	2	24.5
<b>Mean</b>	<b>368</b>	<b>309</b>	<b>1103</b>	<b>928</b>	<b>1.7</b>	<b>18.9</b>

Source: UC Davis Budget and Institutional Analysis web site, <http://budget.ucdavis.edu/data-reports/instruction>.

#### CA&ES teaching load

Over the past 15 years, CA&ES faculty averaged 1,103 SCH per I&R FTE per year, which exceeds the Campus average by ~19%. Without CA&ES, the Campus average is just under 900 SCH/FTE. On average, only 1-2 administrative teaching units (out of nine)

average more SCH/FTE than CA&ES. (And in three out of the past 15 years, CA&ES has had the highest teaching load on campus.)

The *ad hoc* Curriculum Committee further notes that I&R FTE numbers used for CA&ES in recent years are likely inflated (and therefore SCH/FTE *underestimated*). During a previous budget reduction, faculty with mixed OR/I&R appointments were asked to shift their mix toward greater I&R to help maintain full time OR positions (*e.g.*, CE). Many did so, some to 100% I&R, on the condition that this would not result in increased expectations of teaching load. If the Campus is using the new I&R numbers, it would not account for this agreement. In short, SCH per appropriately calculated FTE in CA&ES is probably appreciably higher than 1,100.

It is expected that future new appointments in CA&ES will be for 9-month appointments with corresponding increases in I&R splits. Therefore, over time, this will result in teaching loads that become more similar to those of the rest of the campus.

### **Looming crisis?**

There appear to be two issues within the College that may produce serious teaching shortfalls in the near future and that may already be impacting undergraduate programs: (1) a large number of retirements are on the near horizon, with attendant loss of teaching faculty and/or expertise if these positions are not filled, and (2) perhaps insufficient attention to coverage of courses in the hiring process, which tends to be driven by research needs, not teaching needs.

The accelerated loss of senior faculty will cause at least short-term curricular problems to the degree that Departments cannot or do not fill these vacuums. It is likely that this commitment to filling teaching voids will depend on (a) the importance of courses to departmental Majors; (b) the desirability of teaching particular courses; and (c) whatever reward system the College puts in place to maintain these courses. A particular crisis point may be laboratory, studio, and field courses, which are credited at rates that fall well short of the actual extra commitment of faculty time and energy that they require. These courses are also increasingly under-supported by TA funding.

It is possible that curricular needs may simply lag behind research needs and in the long term, the curriculum within a Major will change and adapt in order to address new information developed by areas of current research. If this is the case, then rapid retirements may create only a temporary problem for delivering curricula. All evidence indicates that programs do adapt to developments within their disciplines, however, the driving forces and time-lines for these changes are difficult to ascertain. Nonetheless, as new CA&ES faculty hires become less commodity-focused, Majors in applied fields may struggle with staffing many of their more applied courses.

### **Other aspects of aligning faculty resources to the needs of Majors**

Rather than couch potential shortfalls in terms of ‘needs of Majors’, it might be preferable to call them ‘curricular needs’. The course requirements for a particular Major are one of the main drivers of these curricular needs, but the students themselves also

determine their course needs through a mixture of Major requirements, Major options, and electives. It is the *ad hoc* Committee's opinion that the College's (and Campus') goal should be that each student should have access to the courses they want to take (within some specified unit limits), regardless of whether the courses are requirements for the Major. Of course, lack of access to required courses for the Major has potentially greater negative consequences for the student than lack of access to elective courses.

It seems that the main way this presents a problem is when Departments limit enrollment in key courses to students in their own Majors (or give first preference to students in their own Majors), even when such course are requirements of other Majors. Increased emphasis (and funding) for Majors at the expense of SCH is likely to only exacerbate this problem. And at a deeper level, we should ask why we ever deny admission to courses that students want to take, rather than increasing offerings (*e.g.*, additional sections). Many programs appear to solve this by hiring non-tenure-track lecturers--which in many instances would appear to be a preferable option to that of denying students access to courses. However, there are also increasing limitations on the availability of classroom/laboratory space, which may restrict adding sections to courses in some cases. Clearly, campus-wide mechanisms are necessary to deal with these shortfalls and mismatches and to balance course offerings with availability of faculty instructors, lecturers, and classroom space. While enrollment management often requires a rapid response to these challenges, Academic Senate oversight of restrictions that are placed on course enrollments is needed in order to avoid adversely impacting student access to high-demand courses.

#### IV. Mean Class Sizes in CA&ES

Mean class sizes in CA&ES are 92 students enrolled per section for lower division classes and 39 students enrolled per section for upper division classes (2009-10 data). Means for the Campus are 76 students/section and 42 students/section for lower and upper division classes respectively. Comparisons across Colleges and historically since 2005-06 are reported at [http://budget.ucdavis.edu/data-reports/documents/instruction/iclsize\\_0510.pdf](http://budget.ucdavis.edu/data-reports/documents/instruction/iclsize_0510.pdf). It should be noted that information on *median* class sizes is also important to consider since averages can be skewed by very high and very low numbers; however this information is not available on-line. Within CA&ES there is a wide range of class sizes and enrollments are dependent on the class format (lecture, laboratory, field experience, studio, etc.), and CA&ES teaches the largest GE class on campus (NUT 10). Policies on minimum class size currently exist (**Table 4**).

**Table 4.** UC Policy on minimum class size.

Type of Class	Minimum Enrollment Norms
Lower Division Courses	12
Upper Division Courses	8
Graduate Courses	4

Source: [http://academicssenate.ucdavis.edu/committee\\_cci\\_policies.cfm](http://academicssenate.ucdavis.edu/committee_cci_policies.cfm)

The question of whether there is some size below which a course (or a Major) is not viable must be addressed, given the proposed incentive-based budgeting strategies for allocating tuition-derived funding on the basis of numbers in Majors and class SCH. If the University's "Vision of Excellence" (see also [http://vision.ucdavis.edu/local\\_resources/docs/vision\\_of\\_excellence.pdf](http://vision.ucdavis.edu/local_resources/docs/vision_of_excellence.pdf)) truly involves promoting student success and interdisciplinary scholarship, size is only one factor that has both positive and negative correlates with scholarship success. The value of Majors and (related) courses must also be assessed in terms of effectively preparing graduates to find careers that are financially rewarding and that contribute to society. Thus, where there is arguably good reason to maintain or develop a new Major or course in terms of a need for expertise that will benefit society, it is the *ad hoc* Committee's recommendation that small enrollments should not be a deterrent as long as they help to produce skilled/qualified graduates.

The Campus' Educational Objectives for Students indicate that students should develop the abilities to critically reflect upon the conceptual and theoretical foundations of their field of specialization and to reason analytically; students should also be able to recognize problems, identify means to address them, evaluate relevant data, and to communicate their technical knowledge effectively (see also <http://undergraduatestudies.ucdavis.edu/educational-objectives.html>). As indicated in the "Vision of Excellence" noted above, a solid education in any domain now requires the development of an appreciation of the relevance of other disciplinary fields and should both inspire and prepare students to seek to keep abreast of new knowledge. These considerations have implications for evaluating the upper bounds of class size.

While high-enrollment, largely lecture classes, with minimal TA and Reader support, can be very economical, and generate substantial funding for a Department or College, they often do so at the cost of limited learning outcomes, namely, simple acquisition and recall of basic facts, without providing students with feedback regarding areas/domains in which they need to improve. Reliance on automated assessment procedures may fail to adequately prepare students for needed skills such as the ability to evaluate and extend current models to meet new challenges. There is reason to believe that small classes are more effective in enhancing higher-order academic skills such as problem solving, written expression, and critical thinking (see also Section X).

In the absence of clear metrics for evaluating cost-benefit ratios for class size—and the degree to which such costs vary according to the nature of the learning activities, *e.g.*, field experiences, “wet labs”, and studios vs. lectures—we must be cautious in embracing any general, mandatory limits on enrollments. There is a clear need to utilize empirically verifiable metrics for determining the costs and benefits per student of enhanced opportunities for instructor-student dialog (including TA and/or Reader support) in terms of learning, beyond simple recall of basic course material. The *ad hoc* Committee is currently not aware of any such metrics however.

### **Majors vs courses: The trees *are* the forest**

A recurring theme of this Committee’s work has been the conflation of courses and Majors, and the collision of courses and Majors:

1. Two issues that motivated the creation of the *ad hoc* Committee were the dual questions, “Are some courses too small?” and “Are some Majors too small?” Both appear to be motivated by questions of economic viability. The actual costs of courses (SCH) are relatively clear in terms of FTE, but savings can only be realized if the existing faculty teach different classes in place of those that are cancelled. In addition, the “costs” of Majors do not appear to extend much beyond the costs of the resources that support them (*e.g.*, advising support).
2. The restriction of important courses to only students in a specified Major means that many students (even students whose Majors require these courses) have difficulty enrolling in the course if they are not in the ‘designated’ Major.
3. The Incentive-based budget model being suggested for allocating funds to Colleges, based on a disproportionate weighting of SCH and the number of students in a Major, means that the University could reward ‘ownership’ of Majors beyond the cost of actually administering them, perhaps allocating Colleges 65% based on SCH and 35% based on number of students in a Major (Note: this ratio is generally consistent with the current CA&ES RAC formula where each Major brings in \$100.00 and each SCH \$4.85 and assuming 36-45 SCH per year; see also Section V and [Appendix 7](#)). Clear understanding of the costs that are required to administer Majors are needed in order to provide a rational basis for allocation of funds to courses and to Majors. Information on the proposed Incentive-Based Budget Model is available at <http://budget.ucdavis.edu/budget-planning/documents/2011-12/Overview-incentive-based-budget-model-FINALv3.pdf>.

4. There are Departments (or other groups of faculty) who believe it is important to maintain certain (small) Majors, and they feel the need to maintain a number of similarly small courses to support these Majors.

One model to address some of these issues would be to consider that courses are the essence of what the university provides, and Majors are essentially the placeholders of those courses. In this model, Majors serve a few basic functions: (a) they provide a pre-packaged set of courses that provide the students with meaningful combinations of courses; (b) they tell the outside world that students with degrees of a particular name have taken an appropriate set of courses; and (c) they provide staff and faculty advisors that help students navigate these sets of courses.

The alternative model is that we produce Majors, and that the courses we offer serve primarily to service those Majors. This seems to be the current structure, and the position of the administration.

## **V. Current Calculations for Resource Allocations to Majors and Courses.**

### **Summary of Discussions with Tom Kaiser, CA&ES Executive Assistant Dean for Administration**

The *ad hoc* Committee met with Tom Kaiser on May 25, 2011. Tom provided tables with the 2010-2011 base budget and resource allocation (RAC) formulae (see [Appendix 7](#); 2011-12 formulae are also included for reference). Related discussions included a review of how monies are allocated for courses and Majors, how funds are allocated to Colleges, how FTE allocations are related to course and Major enrollments, the potential for inter-college cooperation in teaching, potential conflicts in planning for research prominence and instructional needs, and the use of lecturers to teach courses.

From the discussions, it was not clear to the *ad hoc* Committee what the actual costs were to administer any particular course or Major, regardless of size, therefore a comparison of the efficiencies of larger enrollment with smaller enrollment classes is difficult. Tom noted that the College allocations did not necessarily have a clear link to student credit hours (SCH), but that some increased leverage for College FTE requests might be linked to class and Major sizes. There was some discussion on the apparent disconnect between allocations to Colleges, and within College allocations to Departments. (Note: Some of these allocations may change with the proposed Incentive-based funding models, however this information was not available at the time of the discussion with Tom.)

The actual costs of administering a Major were also not entirely transparent, making it difficult to estimate per-student costs. However, the *ad hoc* Committee noted the possibility that for the larger Majors, a concomitant increase in administrative/advising staff may not always occur in the current budget allocations even though an increased number of advising staff may be needed as the number of students in the Major increases. In general, an inclusion of increased staff support needs with potential increases in faculty FTE and student enrollments may be necessary to include in the funding allocations to Departments/Majors. A discussion related to these issues also arose concerning a better coordination of funding between Colleges, and the potential for faculty to teach courses outside of their home College, if appropriate. This type of coordination could also imply a need for a more community-based funding model and a credit system for inter-College teaching in order to decrease the internecine competition for allocations to Colleges.

A critical challenge for curricular planning appears to be a disconnect between the tendency of academic units to hire on the basis of the perceived potential for novel research advances, with little guarantee that FTE's so filled would guarantee coverage of curricular needs (such as gaps left by retiring or other faculty vacancies). Related to this is the possibility of lecturers covering instructional needs, but this brought up the concerns of creating a two-class academic community within Campus, not dissimilar to the formal split between the UC system, the CSU system, and the Community College system.

During the discussion, no conclusions were reached for many of the above items. There was a general feeling that faculty and Programs/Departments might be in the best position to make decisions about how to use the funds they are allocated from the College in order to effectively administer both courses and Majors. Without more centralized data indicating a universal model of costs and efficiencies and without a clear understanding of the incentives to Department/Majors and to Colleges to increase their funding allocations, the costs to the College for modifying the number of Majors or cutting courses based on enrollment do not seem quantifiable at this time.

The *ad hoc* Committee notes that in 2008 a Committee on Interdepartmental Majors was formed. This previous committee determined that Interdepartmental Majors should receive a base level of support of ~\$15,000 per year to support staff advising needs (equivalent to ~25% salary and benefits for advising staff). According to the Interdepartmental Majors Committee, “the base level of funding would be supplemented by the current allocation to majors based on student enrollment and advising, so that Interdepartmental Majors with larger enrollments would have more funds to pay for a higher percentage of a staff advisor’s position, but lower-enrollment Interdepartmental Majors would still have some funds with which to operate.” Presumably, these costs would be similar for department-based Majors and some mechanisms for determining the inflation adjusted costs and appropriate allocations for all Majors could be put into place.



## VI. Coordinating Prerequisites for Majors in CA&ES

Currently, each Major within the College (and the University) develops its course requirements independently (see <http://caes.ucdavis.edu/StudInfo/UAP-2011-brochure.pdf>). This includes prerequisites and ‘core’ courses that often have similar goals across Majors, but the goals are reached in different ways. These differences mean that each student faces a different set of (similar) prerequisites, depending on their choice of Major, and that students transferring between Majors are faced with the burden of either (re-)taking essentially redundant prerequisites, or appealing to obtain exemptions/approvals for courses already completed. Are there more effective and efficient ways to deliver courses to meet the prerequisite requirements for multiple programs? One solution would be to encourage greater communication among Majors with regard to prerequisites. Another would be to create a set of core prerequisites for the College that would serve the majority of prerequisite needs of each Major.

The *ad hoc* Committee discussed both of these possible solutions and felt that broader discussions with the Majors in CA&E are required to fully address this issue. While the Committee felt that there were many advantages to creating a set of core prerequisites that would satisfy the needs of the majority of CA&ES Majors, this would be a drastic change for the College. The *ad hoc* Committee did not feel that enough information was obtained during the current curriculum review to make specific recommendations in this area. Instead we recommend a separate and specific review of prerequisites and core courses for the College that would consider cross-Department and cross-College collaboration to meet the prerequisite needs for all CA&ES Majors.

## VII. Program Reviews and Cross-College Collaborations

Program Review reports from all CA&ES Majors were reviewed. This included thirty-two Program Reviews spanning approximately 10 years; the Exploratory Program and SAS Program, although not Majors were also included. The last Plant Sciences review that was available was in 1988 and because the information in this review did not reflect the current Plant Science Major it was not included in the summary here. See also [Appendix 8](#) for a listing of most recent reviews available.

The Program Reviews affirm previous comments in this Curriculum Report regarding the general strength of Majors in CA&ES as well as acknowledging the overall high level of faculty engagement in undergraduate teaching. Several common concerns were also noted in the Program Reviews and are summarized here (in order of frequency of mention in the Reviews).

- **Faculty FTE.** Although this was not fully tabulated, nearly all reviews noted one or more faculty FTE needs.
- **Advising.** Advising concerns were noted in over one-half of the reviews (*i.e.*, 17 programs), and concerns were often mentioned in multiple reviews for the same Major. A lack of faculty engagement in advising was noted in 11 reviews. Additional concerns included a lack of advising coordination at all levels within a program (*i.e.*, among peer advisors, staff advisors, and faculty advisors) and inadequate staff advising resources for the number of students in a Major. Majors with multiple tracks often experienced difficulty in communicating the requirements for the tracks and in describing differences among tracks.

In 2005, the Senate Undergraduate Instruction and Program Review (UIPR) Committee noted that advising concerns were identified in a significant number of Program Reviews across the entire Campus. In a letter to the Executive Committee in 2011, the CA&ES Undergraduate Program Review Committee also noted that advising concerns were a common theme in Program Reviews within the College.

- **Coordination of courses with other Departments/other curriculum issues.** More than one-half of the reviews (*i.e.*, 17 programs) noted concerns with the curriculum within the Major; this included curriculum/course overlap with other programs, erratic course offerings, and a need for curriculum review.

Approximately one-third of the programs mentioned needs for GIS classes.

Many reviews recommended incorporation of a lower division survey course into the requirements for the Major. This type of course can provide a number of advantages, including providing lower division students with information about the Major and careers in the Major at an early point in their academic career; giving lower division students a feeling of “belonging” to a program; and

providing opportunities for students to interact with peers in the Major at an early point. Some programs already have courses like this and the SAS Career Discovery Program now provides some information of this type for many disciplines. However, the Career Discover Program cannot reach every first-year student in the College (and classes are only open to first year students) and resources for this program are already limited so that expansion of the program is questionable. Some regular SAS classes are also providing this type of overview information (e.g., water classes—Water in Popular Culture; Water Quality at Risk; Water and Power in Society).

- **Advertising of Major/clarification of Major objectives and overlap with other Majors/naming of Major.** Approximately one half of the reviews (*i.e.*, 15 programs) noted concerns with advertising of the Major and/or a need to clarify the objectives of the Major.

One area noted by the *ad hoc* Committee is that “Management” in the title of a Major can be used to denote two different focus areas—one being business management (e.g., Animal Science and Management, Managerial Economics) and one being resource management (e.g., Environmental Science and Management). This could cause confusion to students looking for information about Majors. Anecdotal evidence suggests that this confusion does occur.

In 2005, the Senate Undergraduate Instruction and Program Review Committee noted that there was a general lack of information about Majors campus-wide and access to information about campus Majors was limited. While updates to Campus, College, and Departmental/Major web-sites have occurred since 2005, a 2011 letter to the CA&ES Executive Committee, by the College’s Undergraduate Program Review Committee still noted common concerns across the College in this area.

- **TA funding.** More than one-third of the reviews (*i.e.*, 12 programs) noted limitations in TA funding.

Many programs expressed concern with the three year TA funding cycle, noting that it inhibits development of new courses, it does not account for year to year fluctuations in enrollments, and it does not adequately account for needs in laboratory/field/studio/writing intensive classes. Since the time of most of these reviews, TA resources have declined, so it is expected that the College may experience even more difficulties in this area in the future.

Four programs reported using Departmental funds (or even faculty research funds) to support teaching programs.

- **Internship opportunities.** Approximately one-third of the reviews (*i.e.*, 10 programs) noted a desire to provide more internship opportunities for their students; several programs already have required internship programs.

There is some confusion regarding on-campus 199 research opportunities and off-campus internships; these can be very different and typically they satisfy different educational objectives. Programs need to better clarify to students the differences and opportunities in both areas.

- **Laboratory/field/studio classes.** Four programs expressed a need for more laboratory, field and/or studio classes in the curriculum. Limited availability of equipment and limited TA resources were cited as reasons for not offering more laboratory/field classes.
- **Development of “soft” skills.** Limited opportunities for students to develop “soft” skills were noted in several reviews. These included limited opportunities to improve written and oral communication skills, limited discussions of moral and ethical issues within a discipline, and limited leadership opportunities within a Major.
- **Exploratory Major/Program.** The Exploratory Program is a College advising resource to help students identify a Major. The program was last reviewed in 1999 and many concerns were raised at this time. The program reorganized after the 1999 review and is now housed in the CA&ES Dean’s office. Since the 1999 review, the Science and Society (SAS) program has grown and the Career Discovery Program within SAS also provides information about many Majors in the College; in fact, many students in the Exploratory Program enroll in the Career Discovery Program. A current review of the Exploratory Program is needed in order to evaluate how well the program is meeting the goal of helping students to identify a Major. Undergraduate Council has indicated that a review of this program (and related programs in other Colleges) will occur in the near future.

In addition to the Program Reviews for CA&ES Majors, the *ad hoc* Committee met with Prof. Carl Whithaus, chair of the Academic Senate Undergraduate Instruction and Program Review (UIPR) Committee. Prof. Whithaus indicated that programs often do not currently receive the final reports of their College Executive Committees, the College Deans, and the UIPR. In addition, Undergraduate Council does not currently discuss the reviews with the Provost’s Office and so administrative decisions regarding recommendations from the reviews are often not apparent and/or made in a transparent manner. In recent years there are several cases where it appears that recommendations from the Program Reviews have not been considered in College and Campus planning activities. In some cases, administrative committees have been charged with performing some of the same types of reviews that the College Program Review Committees are currently performing.

During the conversation with Carl Whithaus, the *ad hoc* Committee also discussed mechanisms to provide oversight of inter-departmental Majors as well as the need for improved communication among programs and Colleges. Decisions by programs and

Colleges to limit enrollment in courses and/or to decrease the number of sections offered, particularly for undergraduate prerequisite courses, can have far-reaching impacts on students campus-wide, impacting time-to-degree and students' expressed satisfaction with their degree program. In general, there is a need to develop a more cooperative and collaborative environment across Colleges in order to enhance the delivery and efficiency of undergraduate programs.

## **VIII. Summary of Faculty and Advising Staff Interviews**

Obtaining faculty and staff input was a critical component of the *ad hoc* Committee's review process. A written list of survey/discussion questions was distributed to the CA&ES Master Advisors and Staff Advisors in the fall of 2011 ([Appendix 9](#)). The *ad hoc* Committee then met in small groups with the faculty and staff advisors to discuss the written survey questions; every program in CA&ES was represented at these meetings by either the Master Advisor and/or the Staff Advisor. One of the greatest unexpected benefits of these meetings was the opportunity for faculty and staff advisors from diverse programs to discuss critical issues of curriculum planning and delivery with each other.

While there was much overlap and many commonalities in the issues facing Majors and programs, it was also clear that a one-size-fits-all approach to administering Majors and courses will likely not be successful. For example, some very small Majors (and associated courses) can still be effective in delivering courses and in advising students, because Departments can often leverage the costs of the smaller courses and Majors with large Majors and courses that are administered through the same Department. Alternatively, course requirements for Majors can be designed so that students from two or more Majors administered in the same Department can take many of the same the classes (thereby increasing overall course enrollments); students from both Majors can also take advantage of joint advising and other Departmental resources. On the other hand, large Majors and courses often have to make special efforts to provide opportunities for faculty/student and student/student interactions through social events, additional small discussion sections in classes, etc.

A summary of the discussions with CA&ES Master Advisors and Staff Advisors is provided below. In some cases, suggestions/ideas may not be currently feasible but they are still included here in order to fully represent the scope of these discussions.

### **Economic realities**

There is a general feeling that teaching costs are not fully covered by the current College budget process, and that Departments are supplementing allocations to cover teaching costs. In the absence of a mechanism to better link budget allocations to student credit hours and numbers of students in Majors, Departments have no incentive to hire faculty to meet teaching needs compared to hiring to meet research needs. There is no indication that this will change substantially in the future.

### **Common themes across CA&ES Majors and courses**

Courses and Majors in CA&ES have several common themes, including:

- Providing students with core science training
- Providing integrative science training (natural & social sciences, life sciences & chemistry)
- Application of science to solve problems
- An emphasis on production of food and fiber
- A focus on conservation of natural resources
- Preparing students for careers, post-graduate studies and jobs after graduation

### **Possible future themes or Majors lacking in the College that should exist**

Sustainability and Renewable Energy/Green Energy Systems

Environmental Ethics

Climate Change/Earth Systems Science (Note: this theme does overlap with existing Majors in Atmospheric Sciences and Geology)

Architecture

Oceanography

### **Redundancies in Majors and courses**

Redundancies in content across Majors do occur (*e.g.*, “environmental” Majors and Animal Science/Animal Biology), but in some cases these redundancies are intentional and there is no clear consensus that this is a problem. Some Departments that house multiple Majors take advantage of similar themes across Majors and coordinate core courses together. Majors are reviewed regularly, and in most cases, are constantly evolving to respond to changing disciplines and student needs and interests. Different departmental cultures can result in redundancies (*e.g.*, CRD, LDA, and ESP all teach courses related to urban planning) and to minimize these redundancies it might be desirable to loosen departmental boundaries in terms of teaching. However, faculty will need to be fully acknowledged in merits and promotions for their efforts in teaching courses in other programs.

### **Size of Majors**

There was no clear consensus that the size of a Major was important per-se, but most faculty felt that decisions about the size of a Major should be left to the faculty. Small Majors may be more focused and directed, but in any case small Majors can be viable if courses are available from other Majors. The Major is not the main source of students; in many cases undergraduate classes will be offered, regardless of the size of the Major, because many classes have enrollments from multiple Majors. Having many small Majors may increase the administrative burden of Departments/Programs slightly, but not significantly. Different Majors do different things, but all can create value.

A minority of faculty recommended fewer, less specialized Majors at the undergraduate level; these faculty recommended a broad interdisciplinary approach for Majors, leaving the more detailed and technical material to the graduate level. Some discussions on this view included the possibility that for those students going on to graduate school, majoring in such interdisciplinary Majors could decrease their competitiveness compared to other students with traditionally specialized Majors.

**(Editors Note:** There is some relevant research that evaluates the relationship between the specificity of a Major/educational program and an individual’s occupational status (*e.g.*, Roksa and Levey 2010). This area of research was not reviewed for this report but would be important to consider in the future if Broad vs. Specific Majors are being evaluated).

### **Size of classes**

Size of classes may be more critical than size of Majors, but having a diversity of class sizes is advantageous. There was no consensus as to a minimum class size, other than the current administrative guidelines (**Table 4**). The optimum class size will depend on type of class, with field/laboratory/studio classes requiring smaller sizes and more resources. There is a general shift away from specific fact-based learning, consistent with the emphasis of CA&ES on application of science to address societal problems and to teach students to be problem-solvers.

The relative value of on-line courses will depend on the class. On-line classes may efficiently deliver content to a large number of students, particularly for more general classes and those with more fact-based learning. However, on-line classes must be well-done and typically require a significant initial investment as well as on-going TA/lecturer resources. For more specialized classes, and for those classes that attempt to educate students in scientific techniques and problem-solving, on-line classes are probably not particularly useful or efficient.

### **Prerequisites, inter-departmental, and cross-college Majors**

It appears to be getting more difficult for CA&ES students to enroll in many prerequisite classes that are offered outside of the College. The developing campus partnership with Los Rios Community College may minimize these difficulties, although CA&ES faculty and staff advisors were unclear as to specifics of this partnership. In order to solve enrollment problems within the existing framework, we may need to identify ways to encourage collaborative teaching arrangements within CA&ES as well as across Colleges. Some courses in other Colleges will accept similar CA&ES classes as prerequisites (*e.g.*, ABI and ANS), whereas others will not (*e.g.*, LDA, DES and ENG) so there may be a need to align the curriculum across the Campus. It may be easier to address the prerequisite problems if we establish common prerequisites across all Majors in the College. In this case all of the CA&ES Majors would need to agree about the required courses (*e.g.*, math, chemistry, physics, biology, statistics, computer science, economics and/or other fundamental classes). If this were done, then Majors could focus on depth areas within their discipline.

A number of areas of critical skills/common preparation were suggested, and the current GE revisions appear to be step in right direction to meet these needs. These areas included (in no particular order): (1) Science literacy (may include philosophy of science, ethics, etc.); (2) Statistics/mathematical/quantitative analysis skills; (3) Written and oral communications; (4) Teamwork skills; (5) Ability to translate complex ideas so that the general public can understand them; (6) Hands-on training/laboratory/field/internship experiences; and (7) Critical thinking skills/integrated knowledge.

There was a general consensus that cross-college Majors can be very effective if done creatively, if they provide clear interdisciplinary training, and if they can fill unmet needs for Majors within a College. For cross-college Majors to be successful, each will need a clear home/ownership of the Major. Barriers to cooperation (*i.e.*, allocation of resources,



expenses, etc.) will also have to be removed, with the Academic Senate, Colleges and Administrative units demonstrating unequivocally enthusiastic support for the idea.

First-year students often need a 1- or 2-unit course to fill their schedule and a College-wide core course could fill this need. There may also be opportunities for broad-based/college-wide courses that consider critical emerging themes such as: (1) Career-ready and/or Tools based classes (GIS statistics/bio- or eco-informatics, molecular biology methods, analytical chemistry methods, mathematical methods); (2) Impacts and the science of global climate change/management of climate change (we currently have an introductory SAS course and a high level ATM course); (3) Scientific principles/processes and scientific and/or environmental ethics; and (3) Sustainability issues that span across Departments.

### **Some things that we are doing well**

Many Departments have one or more common/core courses (usually lower division) that are required by multiple Majors within that Department. These courses effectively provide students with an opportunity to identify with their Major and the home Department early on in their academic career. These courses also allow Departments to populate the classes with students from multiple majors, thereby maintaining relatively high course enrollments.

Many Majors have active internship programs and the Internship and Career Center provides many resources for coordinating internships. Education Abroad and UC Davis Washington Program can be life-changing experiences for students.

Many programs within our College are unique within UC. The Chancellor's 2020 Initiative and proposed Incentive-based budget model will link resources to student enrollments; CA&ES is well-poised to capitalize on this vision since we have a number of Majors (and courses) that are not available elsewhere. We should develop mechanisms to advertise our unique programs and use them to our advantage in attracting students to our Campus and the College.

In a similar fashion, environmental studies are a strength for CA&ES. As with agriculture, there are some unique or rare Majors in addition to an international reputation for environmental programs at Davis. The environmental strengths will also be an important factor in attracting students to the Campus and College, especially in the context of increasing societal challenges associated with climate change, air, water, and soil quality, water availability and distribution, and threats to wildlife species.

Field and laboratory classes are critical for learning science. This focus on hands-on learning is a main reason many of our Majors are rated so highly, and we don't want to lose this advantage provided to our graduates.

We must continue to integrate basic sciences into human, animal, plant and environmental systems. This is a strength and a way we can contribute to many of the core prerequisite courses (biosciences, chemistry, math, physics, etc.) across the Campus.

Many Bioscience students already take Animal Biology classes that count toward prerequisites in other Colleges and perhaps we should do more of this.

Some Majors have a final capstone course that is project-based and effectively teaches many of the project management, teamwork, and systems integrations skills that are needed in the work-place and in graduate studies. These can require a substantial amount of faculty and TA resources to teach effectively, and usually require smaller section sizes.

Science and Society Career Discovery Programs and mentoring programs can be effective in helping students to identify Majors in CA&ES, and they provide a smaller peer group for interaction compared to large sized lower division classes. Approximately 20% of freshmen in CA&ES are enrolled in the Career Discovery Program. Lower division survey courses are very effective at introducing students to a variety of Majors. Many Science and Society classes also do this well.

### **Suggestions and areas we can improve**

Our College is complex, and while we do emphasize the importance of Majors with real-world relevance, we also recognize that a narrow minority of faculty felt that some Majors may be too focused. For some Majors, the overall relevance to real-world needs is seen as critical, and it may be desirable to encourage some Majors to be more closely aligned with professional organizations and real-world challenges. For such Majors, the link to a career and the importance of hands-on experience needs to be clear to students. We do have to guard against becoming too application oriented, however, as other education systems such as the CSU system already focus on highly applied programs. On the other hand, the need for real-world skills might also be met by considering two somewhat dichotomous needs from the real-world and academia—integrative studies that are less focused on specialties and specific Majors that are needed both in the increasing complex and quantitative real-world and academia. The integrative route, which sacrifices leadership in traditional areas and could impact the purely academic credentials of our students, involves: (1) supporting integrative programs like Science and Society; (2) reducing the number of very technical undergraduate Majors and encouraging students to seek specialized training at the post-graduate level; (3) developing topic-oriented Majors around Environment, Energy, Water, Health, Ecological Restoration, or Sustainability Studies; (4) emphasizing interdisciplinary skills and real-world experience within new faculty hires; and (5) increasing levels of cross-Campus resources such as the Center for Excellence in Teaching and Learning.

On the other hand, the traditional specialty Major route continues to involve many of the current CA&ES Majors and has created the strong CA&ES reputation in the environment and agriculture. Students in such Majors gain the experience of quantitatively specializing, but then because of the more theoretical nature of their learning, they are able to generalize their learning skills to more integrative studies.

Where we strike a balance between these routes will be determined by ongoing discussions within and between Departments and Colleges, and cooperation of faculty, staff, and administration. Such discussions should include the advantages and

disadvantages of having a significant number of our students graduate as generalists with little experience in a speciality or in-depth studies, and having a significant number of our students graduate as rigorous specialists with less experience in integrative work. Educational studies should be investigated that consider the ability of integrative generalists to carry out rigorous quantitative work, as well as the ability of specialists to carry out integrative work, subsequent to graduation.

Each Department and Major establishes a clear vision of their objectives and what makes them stand out within the College and across Campus, but typically does not indicate the commonalities across Majors and why these commonalities may (or should) exist. Hence, increased collaboration within and between Colleges in order to more efficiently deliver Majors may be possible, but will only be justified if it does not detract from our existing strengths.

It may be possible for CA&ES to increase its educational contribution to the Campus and at the same time to more clearly identify commonalities across our own Majors by offering a class (or classes) on Agricultural & Environmental Sciences at the introductory level for first- and second-year students. This class would also serve as College-wide outreach for freshmen. More science related opportunities for Education Abroad and the UC Davis Washington Program may also be effective in this regard. Within the College, quarterly meetings/interactions among students and faculty in a Major, as well as the offering of internships, could be encouraged.

Collaboration within and between Colleges is always desirable, but it is important to recognize that barriers to collaboration may be due to philosophical, structural/administrative, and/or budgetary issues. In some cases it is difficult to clearly separate these effects. If a collaborative atmosphere within and among Colleges is fostered, then delivery of prerequisite classes can be coordinated, and common core courses, at least among Majors within CA&ES, could be established. From the student standpoint, the more coordinated is the set of prerequisites, the easier it would be to transfer between Majors and Colleges. We would need to identify areas in which several Departments could work together to offer common or core courses that multiple Majors will require or benefit from (*e.g.*, plant courses with an organismal basis, science literacy, statistics, etc.). Cross-college communication and collaboration will be needed to unify the curriculum, to minimize overlap in majors and courses, and to ensure that courses can manage enrollment needs from a wide variety of Majors. This communication/collaboration will presumably need to occur at the Academic Senate level to ensure broad consultation as Majors are approved, as well as at the Administrative level to ensure that resources are allocated appropriately.

At the Administrative level, it will be necessary to better align resource allocation to match the real costs of faculty time and effort in teaching. Resources should be allocated to Departments based on student enrollments, and the Departments should decide how to use resources to teach classes (faculty, lecturers, etc.) and administer Majors. Many other institutions have budget systems where the Department is “rewarded” for teaching, but the perception is that that is not the case in CA&ES. Faculty credit for teaching labor-

intensive classes, including lab/field/studio classes, and classes with extensive writing requirements, is not properly valued. A faculty member who commits 3 hours to a lab only receives 1 unit of academic credit. Teaching laboratory facilities are also generally poor. It may be necessary to adjust resources for upper division versus lower division courses, and to align the allocation of resources more closely to student enrollments. Teaching could also be given more weight in merits and promotions; faculty are not sufficiently rewarded for teaching a lab. Since the College is in transition to 9-month appointments, research needs related to the Experiment Station will probably take a lower priority in faculty allocations/hiring, and extension faculty may also become more important in teaching. Seed money for new Majors would be desirable, since it takes a few years for the RAC formula to adjust. Advance support is also needed to grow certain classes. In some cases, requests for extra sections in classes that fill are not granted until the last minute, leading to extra work and confusion on the part of undergraduate students, graduate student TAs, and instructors. Departments and instructors should also be notified whenever one of their courses is made a prerequisite in another Major.

TAs are important in classes that emphasize the development of work-place skills, and establishing TA pools may be of value in providing qualified TAs in common subject areas across Departments. TAs also establish a close link between undergraduate and graduate program objectives. The Center for Excellence in Teaching and Learning provides TA training programs; TAs should be required to attend these programs. Funding for staff advising of undergraduates is poor; for instance, financial support for undergraduate peer advisers was discontinued by Student Housing and many programs must now cover the cost of Peer Advisers. Funding for Peer Advisers should come from the Campus or College, and Peer Advisers should be a priority. CA&ES is developing a centralized training program for Peer Advisers.

The approval of courses and Majors can be a lengthy process that could be streamlined. It is important that committees move quickly and predictably when making decisions about course and Major revisions as well as on new Majors. At the same time, the process to decrease duplication between Majors and to assess the need for establishing a new Major must be strengthened. The periodic review of Majors could include additional metrics that are aggregated at higher levels, *e.g.*, how often faculty meet to review/update curriculum, how often faculty and students meet each quarter/year, etc.

CA&ES could consider teaching-focused post-doctoral fellowships in lieu of lecturers. For instance, targeted two or three year Research and Teaching Fellowships, in which postdocs are expected to teach two courses per year.

### **Summary**

Faculty and Staff Advisors provided candid assessments of strengths and weaknesses within the CA&ES curriculum. Not all ideas and suggestions proposed during these discussions can be acted upon, particularly in the short term, and in many cases there was not a general consensus for one particular viewpoint over another. However, these discussions provided extensive “food-for-thought” and can provide guidelines for future discussions in specific areas of curriculum development and delivery.

## **IX. Summary of Student Surveys and SARI/UCUES Data**

Current students were surveyed in Fall 2011 in order to obtain input on student perceptions regarding the curricular issues being considered by the *ad hoc* Committee. (see [Appendix 10](#) for list of questions). The survey was sent to 89 Aggie Ambassadors, many of whom were also Peer Advisors; 49 students responded to the survey with written responses (55% response rate). The *ad hoc* Committee also scheduled an in-person meeting with the students in order to further probe their responses to the survey questions, however, only one student participated.

Student input via surveys and interviews revealed both some commonalities and some lack of consensus. It should be noted that the survey was neither designed with the benefit of formal social scientific principles, nor conducted in a statistically valid fashion. The students surveyed did not represent a cross section of the College Majors, and tended to be clustered around a few agriculturally based Majors with little input from environmental Majors. Nevertheless, some revealing trends were noted.

### **Size of Major/Specialized vs. broadly themed Majors**

Finding and deciding on a Major appeared to be a very personal choice that did not have a universal theme. Also, size of the Major did not seem a dominant factor in a given student's choice of a Major. Consistent with this, most students were satisfied with the size of their Major, and did not feel that the Major was too small or too large. In a similar vein, there was little consensus about potential new Majors that should be offered. About twice as many students felt that Majors should be specialized compared to those who thought Majors should be broad; a smaller number of students felt that the specificity of a Major depended on the Major itself.

### **Class sizes/Laboratory, field, studio classes/On-line courses**

A plurality of students (45%) thought classes should be smaller, with a significant minority (37%) saying class size did not influence their educational satisfaction, and a very small minority (6%) expressing a preference for larger classes; 12% of students were less clear about their response. A strong majority were positive about laboratory and field courses (57%), with many more wanting more such courses than those who wanted fewer courses (16:1 ratio). By almost a two to one margin, students did not want more online classes. Most students thought TAs and lecturers (or guest lecturers) were effective.

### **Prerequisites/Course availability**

A vast majority of students had difficulty in getting into at least one class or prerequisite for their Major, with less than 10% expressing no difficulty.

### **Internships**

About one-half of the students polled had had research or internship experiences. The general feeling was these experiences were valuable, but perhaps should not be required. More than half of the students surveyed wanted more internship and research experiences.

### **Access to faculty and advisors**

Most students had been to faculty office hours and appreciated them. Advising by faculty, peer, and staff appear to be well appreciated by students. However, some students recommended an increased frequency of mandatory meetings with advisors.

### **Other**

A great majority of students were aware of the occupational/professional/graduate study opportunities associated with their Major, and felt the Major had prepared them well for these opportunities. However, students were evenly split on whether their Majors prepared them well in the areas of leadership, ethics, teamwork, and communication skills.

When students were asked to describe the best class they had ever taken, a multitude of responses were obtained. Students also volunteered a variety of additional comments in the free-response section. Some commonalities in responses for the best class ever taken, indicated that many students related to lively teachers or topics that inspired them, and to positive hands-on laboratory or laboratory-like experiences.

### **Student Affairs Research Information (SARI) survey data and size of Major**

The *ad hoc* Committee also reviewed 2010 SARI/UC Undergraduate Experience Survey (UCUES) data from students and alumni. In particular, the Committee evaluated student responses to survey questions as a function of the size of the Major. Several negative correlations with size of Major were found: as the size of the Major increased, students expressed a decreased level of satisfaction with the quality of instruction, with access to small classes, with access to faculty outside of class, and with the number of faculty who knew students well enough to write a letter of recommendation for them. While the coefficients for these correlations were not large, they all reached statistical significance at a probability of <0.05%. It should be noted that there are few very small and very large Majors so the data is skewed by limited information at the extreme ends of the ranges of class size. It should also be noted, however, that even though student satisfaction in these areas was overall not as high as for smaller Majors, many exceptions existed and a few large Majors were rated very highly by students in these areas, and vice versa.

No positive correlations with size of Major were observed while student ratings and perceptions in the following areas were not correlated with the size of the Major: overall satisfaction with academic experience; having a well-defined program of study; having open channels of communication with faculty; ability to get into Major of choice; access to educational enrichment programs; overall academic experience; advising by faculty on academic matters; availability of GE courses; availability of courses needed for graduation; variety of courses in Major; opportunities for research and/or creative products.

Summary SARI reports are available for review at <http://sariweb.ucdavis.edu/> and a report of the Survey of Recent Graduates (report No. 417) is available at: [http://www.sariweb.ucdavis.edu/downloads/417.rg2009\\_Outcomes\\_rpt.pdf](http://www.sariweb.ucdavis.edu/downloads/417.rg2009_Outcomes_rpt.pdf)

The *ad hoc* Committee noted that it would be very helpful to programs to have alumni data from students more than one year post degree completion. For undergraduate programs it can be difficult to assess program strengths and weakness with only data from very recent alumni, as is currently obtained.

## **X. Summary of Relevant Educational Research**

Many of the areas evaluated during the *ad hoc* Committee review of the CA&ES curriculum are also the focus of extensive scholarly research. In some cases this research supports the findings of the *ad hoc* Committee; the scholarly research also highlights the many subtle factors that can impact educational outcomes and student satisfaction with educational programs. Here, we highlight selected articles in several areas that were germane to the curriculum review and *ad hoc* Committee recommendations.

### **How students choose Majors**

While many factors influence student decisions regarding their choice of a Major (*e.g.*, influence of family and friends, cultural expectations, perceived individual skills and strengths, etc.) students often choose Majors with a job or career endpoint in mind (Powers, 2000; Porter and Umbach 2006). Similarly, Baker et al. (2011) have shown that students' perceptions about a specific agriculture program or Major improved after they became aware about potential careers in that agricultural field. Information from our student interviews supports these findings.

Thus, it is important that descriptions of Majors that are provided to students should lead quickly to specific jobs. Website descriptions of Majors, including those at UCD and comparisons schools, often provide a vague list of employment/career opportunities. CA&ES and Majors within the College should organize their websites to make career information readily available to students. An example of a web site where this is easily found is the University of Illinois, where in two clicks from the College of Agriculture home page detailed career services information is provided ([http://academics.aces.illinois.edu/career-services/placement/09-10\\_Graduates](http://academics.aces.illinois.edu/career-services/placement/09-10_Graduates)).

### **Research on size of Majors, class size and educational outcomes**

There is a large body of research on the effects of class size on student educational outcomes and students' expressed satisfaction with their educational experiences. While it is not our goal to provide a comprehensive review of research in this area, we have highlighted a few selected studies and reviews.

Most studies indicate that effects of class size and student performance depend on the criteria and assessment tools used to gauge performance. In general, small class sizes show no advantages over large classes when standardized achievement tests are used to assess performance (*i.e.*, acquisition of fact-based knowledge). However, when higher-order learning skills are evaluated (*e.g.*, long-term retention, written expression, problem-solving skills, etc.), small classes have a distinct advantage over large classes (Goodman et al. 2005 and reviews by Roberts-Miller, 2005; Carpenter, 2006; Cuseo 2007; Schiming 2012).

Student satisfaction surveys generally show that students find large classes to be distracting to learning and students express higher levels of satisfaction with their educational experience as the number of small classes that students take increases (Goodman et al. 2005; Cuseo 2007; Schiming 2012). Students perceive that there are



lower levels of student-faculty interactions in large classes (Schiming 2012). These results are generally consistent with findings in our informal student survey and in an analysis of SARI data, indicating that students in larger Majors expressed lower levels of satisfaction with the quality of instruction, with access to small classes, with access to faculty outside of class, and with the number of faculty who knew students well enough to write a letter of recommendation for them.

### **Soft skills needed by new graduates**

In a recent review of the literature and in a cross-institutional survey of students, faculty, alumni and employers, Crawford et al. (2011) identified seven ‘soft skill’ clusters that were found to be important for new graduates entering the workforce in agriculture, natural resources and related careers. These included:

- Communication Skills
- Decision Making/Problem Solving Skills
- Self-Management Skills
- Teamwork Skills
- Professionalism Skills
- Experiences (e.g., internships, project management, international experiences, etc.)
- Leadership Skills

Each group of survey respondents ranked the importance of the skills in a slightly different order; however, Communication Skills and Decision Making/Problem Solving Skills were considered the two most important skills by all groups (students, faculty, alumni, employers). Interestingly, 55% of the respondents indicated that the responsibility for training in soft skills is shared equally among students, faculty/Universities, and employers. Universities, Majors, and Faculty should emphasize development of these skills in the classroom whenever possible, however, students also gain many of these skills outside the classroom through participation in student and professional organizations, community service activities, etc. The *ad hoc* Committee surveys of CA&ES students, faculty, and advisors support these findings and indicate that we should do more to create opportunities for students to obtain these skills.

### **Engaged Scholarship**

Land grant institutions and Colleges of Agriculture within these institutions, have long been leaders in transferring knowledge to stakeholders and in encouraging faculty to be engaged with their communities in order to address community needs in their research and teaching activities (National Association of State and Land Grant Universities, 2001). This concept of “Engaged Scholarship” (Boyer, 1996) is now being more widely embraced by many academic fields at a diverse array of research universities (see also <http://www.compact.org/initiatives/civic-engagement-at-research-universities/trucen-overview/trucen-intr/>).

According to the recommendations of the National Association of State and Land Grant Universities (2001) engaged institutions must “(1) be organized to respond to the needs of today’s students and tomorrow’s, not yesterday’s; (2) enrich student’s experiences by

bringing research and engagement into the curriculum and offering practical opportunities for students to prepare for the world they will enter; and (3) put critical resources (knowledge and expertise) to work on the problems that face the communities they serve.”

Many of the programs and Majors within CA&ES exemplify these goals, and the *ad hoc* Committee feels that the College Administration and Faculty are well-poised to take a leadership role in structuring our teaching and research programs in ways that will fully model and develop the concepts of Engaged Scholarship for the entire Campus and UC system.

### **Role of research institutions as innovators and early adopters of new programs**

As shown by Brint et al. (2011) large, research institutions are often important innovators and early adopters of new programs and they frequently foster new science and technology fields. Development of these programs is critical since “science and technology fields are engines of economic growth” (Brint et al. 2011). Four-year institutions have also been leaders in developing multidisciplinary fields, such as environmental science (Brint et al. 2009). These authors indicate that within a campus, multidisciplinary Majors are also important for fostering cross-college connections and innovations.

In fact, many Majors that were pioneered at UCD, such as Viticulture and Enology and Environmental Toxicology, are now found in some form at many other institutions across the US. In addition, UCD and CA&ES have long fostered multidisciplinary educational approaches that are now widely adopted at many other four-year institutions. CA&ES should continue to play an important role as a leader in identifying, developing, and educating students in new emerging science and technology fields (*e.g.*, Sustainable Agriculture), however, this requires continuous investment and commitment of resources, as well as flexibility in adapting Majors and programs as new fields emerge.

## **XI. Recommendations**

The charge to the *ad hoc* Committee was broad and our review covered many diverse areas. As a result, the Committee recommendations are also diverse. However, during our review several common themes emerged and we have attempted to structure our recommendation around these common themes. In addition, we have identified the level at which leadership is needed in order to institute these recommendations:

- [A] Leadership by College and Campus Administration;
- [M] Leadership by faculty within Majors/Departments;
- [EC] Leadership by CA&ES Executive Committee; and
- [AS] Leadership by Academic Senate committees.

### **General comments and recommendations regarding allocations of resources to Majors and courses**

It is critical that college-wide decisions regarding the curriculum and resource allocations be based on transparent budget models, the appropriate use of available data and statistical analyses, and sound pedagogical reasoning. Specific recommendations include:

1. Develop transparent mechanisms to assess current costs of teaching classes and administering Majors. This information is needed campus-wide as well as within CA&ES and should address a variety of classroom formats including lectures, laboratory, field, and studio classes. It may be appropriate to engage the School of Management to provide tools for this budgetary analysis, such that the analysis is logical and defensible. Such assessments, and the methodology to obtain the assessments, should be reviewed by the appropriate Academic Senate bodies. The reviews should also be considered by administrators when budgetary decisions are made. [A], [AS]
2. Budget allocations should be aligned to emphasize student credit hours (SCH) and can include numbers of students in Majors. This relative emphasis should be determined after the cost analysis in (1) above is completed and reviewed. The Chancellor's proposed Incentive-Based Budget Model ([http://chancellor.ucdavis.edu/initiatives/2020\\_Initiative/index.html](http://chancellor.ucdavis.edu/initiatives/2020_Initiative/index.html)) does allocate funds both on the basis of SCH and Major size, but lacks a clear budgetary analysis/justification. Care should be taken to not overly weight allocations to large Majors at the cost of unique, but smaller Majors and courses. [A]
3. Staff support needs (*e.g.*, advising staff and administrative staff) should be tied to new Faculty FTE and student numbers in Majors and courses. [A]
4. Departments/programs should be allowed discretion in how they allocate resources to Majors and courses within a Department; departments can and should leverage the costs of smaller courses and Majors with large Majors and courses that are administered through the same Department. Inter-departmental Majors should be supported with sufficient staff advising to support the needs of the Major as recommended by the previous Interdepartmental Major Review Committee. [A], [M]
5. College-wide decisions that impact student satisfaction and educational outcomes (*e.g.*, setting lower (or upper) limits on sizes of courses and/or Majors) should be informed by current, academically based educational research. The School of

- Education may be able to provide consultation in these areas and is a Campus resource that could be utilized to effectively evaluate new approaches for curriculum delivery. [A], [AS], [M]
6. Data on enrollments, student admissions, retention, surveys, employment statistics and salaries for graduates, etc. is often not available in a timely fashion, limiting the Administration's effectiveness in responding to student needs for access to courses, Majors, etc. The ability to track student enrollments and educational outcomes for students in Majors and tracks within Majors is needed as individual Majors change names, merge with other programs, close, etc.; without this information it is difficult to determine whether the changes to the Major have improved student outcomes or not. This problem is exacerbated by the increase in number of tracks within Majors, with little documentation available in many cases about the enrollment in each track. Since the majority of this information is computerized, it should be made available to the Administration on a real-time basis. [A]

### **Identity of Majors**

CA&ES offers many Majors that are unique within UC, that provide training for careers that are critical to the State of California, and that can provide significant areas of growth and a distinctive identity for the Campus in the coming years. Nevertheless, there is still much that can be done to enhance the stature of these Majors and to demonstrate their value to the campus and to the public/stakeholders. Specific recommendations include:

1. Programs/Majors need to provide a clear vision of what makes them stand out and the objectives/goals for their graduates. Programs need to provide a clear understanding of relationships between Majors, including similarities and differences. [M], [EC]
2. All Majors should consider if their name clearly and consistently conveys the program mission to prospective and current students; current evidence indicates that many names do not currently do this. [M], [EC]
3. Research shows that students choose Majors, at least in part, based on their expectations for career opportunities after graduation. The Programs and the Administration should work together to develop web pages and marketing tools to highlight accomplishments of alumni and to demonstrate specific job and career opportunities available to graduates of Majors in the College. [A], [M]

### **Faculty FTE needs within a Major**

Many Majors are facing limitations in faculty FTE available to teach courses in their programs. To begin to address these limitations, the *ad hoc* Committee recommends that:

1. Departments/Programs should clearly specify in new faculty search plans how the proposed new faculty FTE (along with existing faculty, as appropriate) will address teaching needs within Majors administered by the Department. [M]
2. Departmental Academic Plans should clearly include teaching needs along with research needs. [M]
3. Administrative review of Undergraduate Program Review Reports within a cluster and across the College should be used to identify critical teaching needs

across the College. New FTE can be allocated, at least in part, based on these documented needs. [A]

### **Size and number of Major programs in CA&ES**

The *ad hoc* Committee recommends that we take a broad view of accommodating students in our College, regardless of their “home” Major. In this model, Majors serve several basic functions: (a) they provide a pre-packaged set of courses that provide the students with meaningful combinations of courses; (b) they tell the outside world that students with degrees of a particular name have taken an appropriate set of credentials as reflected through their courses; and (c) they provide advising resources to help students navigate these sets of courses. Resource allocations can then be defined to support these functions of a Major program.

1. As noted previously, the College houses many high quality Majors that are unique within the UC system. The *ad hoc* Committee feels that this is an important criterion to consider when making decisions regarding the number of Majors in the College. This information, as well as detailed information on the costs of administering Majors and classes, as discussed above, should be used to inform decisions regarding an appropriate number of Majors within the College. [A], [AS], [EC]
2. Current data suggest that student choice of a Major is not influenced by the size of a Major, while historically the number of students in each Major appears to match available job and post-graduate opportunities. Additionally, students expressed significant interest for both broad, topical Majors as well as specialized, specific Majors. The *ad hoc* Committee therefore does not recommend one model over another at this time.
3. Merging Majors and creating tracks within Majors may be successful in some cases and has worked to grow programs in some instances. However, multiple tracks within a Major can also lead to confusion on the part of students and can lead to larger programs where student/faculty interactions are limited. In addition, the students in such track-based Majors may not be as competitive in the work-place or in graduate admissions. The *ad hoc* Committee recommends that programs routinely assess student demand for programs (including analyzing the number of students enrolled in each track) as well as work place and post-graduate needs for graduates. Undergraduate Program Review reports should be used to advise the Administration on areas of program overlap as well as program goals; using Undergraduate Program Review reports, shared targets for program size can be identified. [M], [EC], [A]
4. The approval of Majors (and courses), and their revisions, can be a lengthy process that could be streamlined. It is important to ensure that committees move quickly and predictably on course and Major revisions as well as on new Majors. At the same time, the process to decrease duplication between Majors and to assess the need for establishing a new Major both within CA&ES and Campus-wide, must be strengthened. The development of searchable databases that allow course offerings and course requirements for Majors to be queried would decrease the potential for overloading particular courses and increase opportunities for collaboration in course offerings across the Campus. [A], [AS]

### **Class sizes**

Student surveys and educational research indicate that smaller classes are preferred and result in better development of higher order critical thinking skills among students. Therefore, the *ad hoc* Committee sees few pedagogical reasons to encourage larger classes. However, budget limitations still require consideration of mechanisms to efficiently and effectively allocate resources.

1. The Committee recommends that programs be allowed discretion in utilizing resources to meet curricular needs specific to their program. [M], [A]
2. As noted above, budget models are urgently needed that will allocate resources to programs so that they can maintain existing, and provide new, high quality experiential learning opportunities (including laboratory, field, highly quantitative, studio, and writing intensive courses). [A], [M]
3. An evaluation of SCH allocations to labor intensive laboratory/field/studio classes is needed in order to fully credit faculty for time spent in these classes; the current Carnegie unit guidelines do not always allocate credit appropriately. [A], [M], [EC], [AS]
4. The College and Campus, in collaboration with the Center for Excellence in Teaching and Learning, should provide monetary and resource incentives that will encourage faculty to explore novel approaches for providing experiential learning opportunities, increasing faculty/student interactions, and delivering effective feedback to students on written work even when TA, space, and equipment resources are limited. [M], [A], [AS]
5. Explore opportunities for on-line courses, including areas where the campus can provide leadership in on-line delivery of curriculum. This will require examination of which on-line courses may be appropriate and which would not be supported for effective and lasting student learning outcomes as well as consideration of concerns noted by faculty and students in this report. [M], [EC], [A], [AS]

### **Delivering prerequisites and access to courses**

Students report increasing difficulty in enrolling in prerequisite and core courses within the College and across the Campus. Mechanisms are urgently needed to address this problem so that students can complete their degrees in a timely manner. Specific recommendations include:

1. Develop official mechanisms of communication and cooperation among CA&ES Majors with respect to prerequisites and curricular needs. This could be achieved by annual or bi-annual meetings of staff and master advisors. [M], [EC]
2. As an alternative to number (1) above, establish a standing CA&ES Curriculum and Instruction Committee to provide oversight of curricular needs across the entire College. This committee could meet periodically with Campus-wide and other College and Senate instructional committees. See also 'Ongoing Curriculum Review' section below. [M], [EC], [A], [AS]
3. Committee from (1) and (2) above should thoroughly review the core prerequisite courses for CA&ES Majors and determine if a common set of prerequisites can be

- identified that will serve the majority CA&ES Majors. If a common set of prerequisites are identified, begin process to implement changes across the College. [M], [A]
4. Increase the amount of inter-departmental and inter-college teaching in order to address faculty FTE limitations that exist for some courses, Campus-wide and within the College. [M], [AS], [A]
  5. Information about course changes and course availability should be disseminated rapidly to all campus programs and made available to advisors and students, ideally through a web-listing that is updated in real-time by the campus Registrar. Academic Senate review of Pass I restrictions that are placed on student enrollments may be needed to ensure appropriate student access to courses. [A], [AS]
  6. Administrative resources should be made available to ensure that enough sections of a class are taught in order to meet student demand. Current efforts by Provost Turner and the Council of Associate Deans to identify quarterly “hot spots” have been effective and a continued campus-level response is needed. [A]

### **Development of ‘soft-skills’ and other curricular issues**

The *ad hoc* Committee review identified several areas for curriculum development within CA&ES that could enhance opportunities for our students. These include:

1. Soft skills are increasingly important for new graduates seeking employment. There are many mechanisms whereby students can gain these skills in the classroom, *e.g.*, incorporation of group projects, oral presentations, analysis of real-world problems, etc. into course content. However, extra-curricular activities can also be effective venues for students to gain these skills. Therefore, students should be actively advised to participate in internships and education abroad programs and they should be active in social and professional student organizations and community service activities. [M]
2. Faculty and Staff Advisor interviews indicated that it may be desirable to develop one or more college-wide survey courses aimed at helping students to identify Majors in CA&ES and in providing students with peer groups with common interests. Many Science and Society (SAS) courses already serve this purpose. In addition, expansion of the Career Discovery Program within SAS and providing sufficient resources so that all CA&ES freshman can participate in the Career Discovery Program may be an effective mechanism for attracting and retaining students in our College. [M], [EC], [A]

### **Program Reviews**

While Program Reviews provide important opportunities for Majors to critically evaluate their strengths and weaknesses, full implementation of the recommendations from the reviews does not appear to consistently occur. The *ad hoc* Committee recommends the following steps to strengthen the Program Review process:

1. Program Review reports from the College Dean’s Office, the College Executive Committee and the Senate Undergraduate Instruction and Program Review Committee (UIPRC) should be sent to the Major programs. Undergraduate

- Council, in consultation with UIPRC, is currently instituting this recommendation. [AS]
2. Increased communication among the Provost's Office, the Dean's Offices, Undergraduate Council and the UIPRC are needed in order to provide a Campus and College context for the Program Reviews and to ensure that recommendations from the Program Reviews are considered and instituted at Administrative Levels. Undergraduate Council, in consultation with UIPRC, is developing mechanisms to increase this communication and oversight. [AS], [A]
  3. There are several recurring areas of concern in CA&ES Program Review Reports. These include:
    - a. the need for improvements in advising resources for programs. To address these concerns College-wide best practices should be instituted and a maximum limit for the ratio of student FTE per staff advisor should be defined. Students should be required to meet with a faculty advisor on a quarterly or bi-annual basis. Continuing education and training opportunities for staff advisors should be developed and instituted. The National Academic Advising Association (<http://www.nacada.ksu.edu/>) provides resources and assessment tools for academic advising programs; this information should be used to form a framework for establishing advising standards within CA&ES. [M], [EC], [A]
    - b. the need for improved inter- and intra-college coordination of courses and prerequisites. Recommendations in this area are made in other sections above. [M], [A], [AS]
    - c. critical TA needs to support laboratory, field, studio, and writing intensive courses. Recommendations for budget allocations to support these activities are made in other sections above. [A]
    - d. the desire to increase internship opportunities for students. In many cases opportunities for internships already exist but programs need to advertise the opportunities better. CA&ES and individual Majors should increase interactions with and utilization of Career and Internship Center resources to develop improved internship opportunities. [M], [A]

Real improvements in these areas can only be made through concerted efforts at both the Program/Department level and at the Administrative level. An atmosphere of collegial compromise will be required to address some of these issues.

4. Survey information from alumni more than one year post graduation could be very helpful to programs in assessing program strengths and weaknesses. Use of web surveys and student gmail accounts (that allow students to keep accounts post-graduation) will hopefully make this possible in the future. [A]



## **XII. Summary and Concluding Remarks**

The *ad hoc* Committee recognizes that there is a difficult balance between providing the optimal undergraduate experience to students and resource and budgetary limitations on how programs can be delivered. This Curriculum Review has tried to keep this balance in mind, while identifying areas where we think change and progress can be made. It is also critical that changes to Majors and courses that are made in response to desires for budgetary efficiency be made strategically so that program quality and growth in the future is not compromised. We hope that this report will provide opportunities for increased dialog between Major programs, the Academic Senate, and the Administration in order to strengthen academic programs within CA&ES. We also hope that this report will provide a framework for the active and continuous consideration of how undergraduate educational programs can be delivered to our students in creative and cost-effective ways.

### **XIII. Bibliography**

Anderson et al., 2011. Changing the Culture of Science Education at Research Universities, *Science*, 331: 152-153.

Baker, L. M., Irani, T., Abrams, K. Communicating strategically with Generation Me: Aligning students' career needs with communication about academic programs and available careers. *NACTA Journal*, June: 32-39.

Bauerle et al. 2009. *Vision and Change in Undergraduate Biology Education. A Call to Action*. C. A. Brewer and D. Smith, eds., American Association for the Advancement of Science, Washington DC.

Boyer, E. 1996. The scholarship of engagement. *J Public Service Outreach*, 1(1): 11- 20.

Brint et al. 2009. Expanding the social frame of knowledge: Interdisciplinary, degree-granting fields in American colleges and universities, 1975-2000. *The Review of Higher Education*, Vol 32, No. 2, Winter 2009, pp. 155-183.

Brint et al. 2011. Who are the early adopters of new academic fields? Comparing four perspectives on the institutionalization of degree granting programs in US four-year colleges and Universities, 1970-2005. *High Educ*, 61: 563-585. DOI 10.1007/s10734-010-9349-z

Carpenter, J. M. 2006. Effective teaching methods for large classes. *J. Family & Consumer Sci Educ*, 24 (2): 13. Accessed on-line, May 2, 2012: <http://www.natefacs.org/JFCSE/v24no2/v24no2Carpenter.pdf>

Crawford, P., Lang, S., Fink, W., Dalton, R., Fielitz, L. 2011. *Comparative Analysis of Soft Skills: What is Important for New Graduates?* Washington, DC: Association of public and Land-grant Universities. 24 pp.

Cuseo, J. 2007. The empirical case against large class size: Adverse effects on the teaching, learning, and retention of first year students. *J Faculty Devel*, 21(1): 5-21. Accessed on-line, May 1, 2012: [http://steenbock.library.wisc.edu/instruct/class\\_support/imd/Week%2013%20Cuseo.pdf](http://steenbock.library.wisc.edu/instruct/class_support/imd/Week%2013%20Cuseo.pdf)

Goodman, B. E., Koster, K. L., Redinius, P. L. Comparing biology majors from large lecture classes with TA-facilitated laboratories to those from small lecture classes with faculty-facilitated laboratories. *Adv Physiol Educ* 29(2): 112-117. DOI: 10.1152/advan.00054.2004.

Gourman, J. 2006. *The Gourman Report: Rating Undergraduate Programs in American and International Universities*, 11<sup>th</sup> Edition, 2005-2006, National Education Standards, Los Angeles CA, ISBN: 0-918192-18-8. (Note: The 9<sup>th</sup> Edition, 1996, was also reviewed for this report; ISBN: 0-918192-16-1).

The National Academies. 2009. *Transforming Agricultural Education for a Changing World*. National Academies Press, Washington DC.

National Association of State University and Land Grant Colleges. 2001. Returning to our roots: The engaged institution. In *Executive Summaries of the Reports of the Kellogg Commission on the Future of State and Land-Grant Universities*. Washington, DC: NASULGC. Accessed on-line, May 2, 2012: [www.cpn.org/topics/youth/highered/pdfs/Land\\_Grant\\_Engaged\\_Institution.pdf](http://www.cpn.org/topics/youth/highered/pdfs/Land_Grant_Engaged_Institution.pdf)

National Research Council, Board on Agriculture. 1995. *Colleges of Agriculture at the Land Grant Universities: A profile*.

[http://www.nap.edu/openbook.php?record\\_id=4980&page=R1](http://www.nap.edu/openbook.php?record_id=4980&page=R1)

National Research Council, Board on Agriculture. 1996. *Colleges of Agriculture at the Land Grant Universities: Public Service and Public Policy*.

[http://www.nap.edu/openbook.php?record\\_id=5133&page=R1](http://www.nap.edu/openbook.php?record_id=5133&page=R1)

Porter, S. R., Umbach, P. D. 2006. College major choice: An analysis of person-environment fit. *Research in Higher Education*, 47(4): 429-449.

Powers, M. N. 2000. Factors in Choosing Landscape Architecture as a Major: A National Student Survey. M. S. Thesis, Virginia Polytechnic Institute & State University. 69 pp.

Roberts-Miller, T. Class size in college writing classes. 14 Feb 2005. Accessed on-line May 2, 2012: <http://www.cwrl.utexas.edu/~robertsmiller/Classsize.html>

Roksa, J. and Levey, T. 2010. What can you do with that degree? College major and occupational status of college graduates over time. *Social Forces* 89(2): 389-416.

Schiming, R. 2012. Class size article. Center for Excellence in Teaching and Learning, Minnesota State University, Mankato. Accessed on-line, May 2, 2012: <http://www.mnsu.edu/cetl/teachingresources/articles/classsize.html>

Van der Werf and Sabatier. 2009. *The College of 2020: Students*, Chronicle Research Services.

## XIV. Appendices

1. Charge to Committee .....	47
2. The National Academies (2009) Guidelines for Review of Undergraduate Programs in Food and Agriculture.....	49
3. Brief History of Majors over Last Approximately Ten Years .....	50
4. Major Enrollments by Class Standing (2006-2011) .....	55
5. CA&ES Enrollments by Majors (2006-2011) .....	63
6. Comparison of Majors offered in Colleges of Agriculture at Selected Comparison Institutions .....	67
7. CA&ES 2010-11 and 2011-12 Resource Allocation Formula Charts .....	68
8. Listing of Most Recent Program Reviews Available and Surveyed for this Report .....	70
9. Master Advisors and Staff Advisors: <i>ad hoc</i> Curriculum Planning Committee Interview Questions, Fall 2011 .....	71
10. <i>ad hoc</i> Curriculum Planning Committee Student Survey Questions, Fall 2011 .....	73

## **APPENDIX 1**

### **Charge to Committee**

STANDING COMMITTEES:  
FACULTY OF THE COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL  
SCIENCES  
ACADEMIC STAFF OF THE DIVISION OF AGRICULTURE AND NATURAL  
RESOURCES  
OFFICE OF THE DEAN AND DIRECTOR OF PROGRAMS

March 22, 2011

**SUSAN EBELER, Viticulture & Enology**  
**LARRY HARPER, Human & Community Development**  
**KYAW THA PAW U, Land, Air & Water Resources**  
**MARK MATTHEWS, Viticulture & Enology**  
**KEN SHACKEL, Plant Sciences**  
**DIANE ULLMAN, CA&ES Dean's Office**  
**TRUMAN YOUNG, Plant Sciences**

#### **RE: Curriculum Planning Needs**

Dear Professors:

Within the College of Agricultural & Environmental Sciences, we have routines for changing and reviewing our close to thirty Majors. Following these routines, we tend to consider each Major separately. Perhaps the time is opportune to consider our whole set of Majors, given the seemingly inevitable shrinkage of faculty in CA&ES and the redirections in research suggested by the College Planning Committee last year.

The CA&ES Executive Committee has voted to have a special (ad hoc) committee to contemplate these issues and report next October with some suggestions. The Executive Committee would like you to serve on this special committee. The special committee will have six members: three master advisors from Majors distinct in size and subject, a member of the Executive Committee, specifically Kyaw Tha Paw U, the Chair of the Undergraduate Majors and Courses Committee, and the Chair of the Undergraduate Program Review Committee, who will chair the special committee (Sue Ebeler). Diane Ullman, Associate Dean for Undergraduate Programs, will be an ex-officio member, and through her some of the data resources in the dean's office will be available.

We leave to the special committee to determine what issues to consider, but several seem important to us:

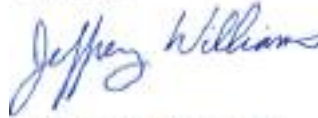
- Should CA&ES have fewer broad majors, perhaps with separate tracks, or should we offer specialized majors?
- Is there some size below which we should judge a major not viable no matter the enthusiasm of students and faculty?
- Should CA&ES encourage double majors or make more minors available?

- What kinds of majors and programs (*e.g.*, Science and Society, Contemporary Leadership minor) will provide students with more prospects of success in the workplace?
- How do we position our majors in the broader context of the campus?
- How does CA&ES provide advising services to majors of such different sizes? Are allocations of teaching assistants disfavoring majors of certain sizes?
- How well does the so-called Exploratory major funnel students into CA&ES majors?
- How can we best align recruitment of new faculty with our curriculum needs in general and for majors in particular?

We on the Executive Committee understand that these issues are large and difficult. We are simply hoping that the special committee can provide some principles, useful on a five- or ten-year horizon. We imagine that the special committee will consult widely among master advisors, but how the special committee should operate will not be ours to specify. We simply want a short report and a discussion of that report before the Executive Committee next October.

Please confirm with Sharon Berg that you will serve on this special committee (saberger@ucdavis.edu), and if you are not able, you might suggest someone else.

Sincerely,



Jeffrey C. Williams, Chair  
CA&ES Executive Committee

JCW: sb  
cc: Neal Van Alfen

## APPENDIX 2

### **The National Academies (2009) Guidelines for Review of Undergraduate Programs in Food and Agriculture.**

Questions to guide the review of undergraduate Food and Agriculture Programs.

This table provides a checklist of items to be used by any individual or group conducting a review to evaluate how well-prepared a given agriculture education program is to foster the next generation of leaders. The questions touch on the curriculum and student experiences, the institutional commitment to teaching and learning, and the organization and structure of outreach activities. A sample of the review criteria follows.

Category	Questions to Consider
Curriculum and student experiences	<ul style="list-style-type: none"> <li>• How does the curriculum incorporate experiences focusing on teamwork and working in diverse communities, working across disciplines, communication, critical thinking and analysis, ethical decision-making, and leadership and management?</li> <li>• What opportunities are available to students for internships, cooperative experiences, service learning or mentorships?</li> <li>• What opportunities are available for students to engage in undergraduate research?</li> </ul>
Institutional commitment to teaching and learning	<ul style="list-style-type: none"> <li>• What faculty development resources and opportunities are available?</li> <li>• What training is made available to new faculty and others offering instruction?</li> <li>• How are teaching and learning incorporated into considerations for hiring, promotion and tenure?</li> </ul>
Outreach and organizational structure	<ul style="list-style-type: none"> <li>• How are business, industry, government, non-governmental organizations, and community and consumer groups engaged in the development of the curriculum?</li> <li>• How often do faculty members spend sabbaticals outside of academe?</li> <li>• How often do industry scientists teach courses at your institution?</li> <li>• What types of connections and interactions does your institution have with other area academic institutions? Are there joint programs, shared resources, or other types of partnerships?</li> <li>• What types of connections and interactions does your institution have with K–12 students and teachers? With area youth-focused programs such as 4-H, National FFA, and scouting?</li> </ul>

Source: Quoted from *Transforming Agricultural Education for a Changing World*. The National Academies. National Academies Press, Washington DC, 2009.

## APPENDIX 3

### Brief History of Majors Over Last Approximately Ten Years

A listing and short description of all CA&ES Majors is available at <http://caes.ucdavis.edu/StudInfo/ugmajors/ugmajors/undergraduate-majors>

#### Agricultural and Environmental Education

- Major re-formed in 2008
- administered through Animal Science Department
- Major currently has focus areas in: Agricultural Business and Economics, Animal Science, Applied Biological Systems Technology, Environmental Horticulture, Environmental Science and natural Resources, Plant and Soil Science
- web site: <http://asac.ucdavis.edu/Aee%20Major.htm>

#### Animal Biology

- Major was established in 1997
- Program currently administered through Dept of Nematology
- web site: <http://ucanr.org/sites/abi/>

#### Animal Science

- no recent changes to Major
- administered through Animal Science Dept
- Major currently has specializations in: Animal Science with a Disciplinary Focus, Aquatic Animals, Avian Sciences, Companion and Captive Animals, Equine Science, Laboratory Animals, Livestock and Dairy, Poultry
- web site: <http://asac.ucdavis.edu/Majors/animal%20science%20major.htm>

#### Animal Science and Management

- Major created in 1993 from previous Major called Agricultural Science and Management that included many Departments and focus areas
- administered through Animal Science Department
- Major currently has areas of specialization in: Aquatic Animals, Companion Animals, Dairy, Equine, Livestock, Poultry, Individualized
- web site: <http://asac.ucdavis.edu/Majors/anm%20major.htm>

#### Atmospheric Sciences

- no recent changes to Major
- administered through Department of Land Air and Water Resources
- web sites: [http://lawr.ucdavis.edu/undergrad\\_atm.htm](http://lawr.ucdavis.edu/undergrad_atm.htm) and <http://atm.ucdavis.edu/> and [http://atm.ucdavis.edu/student\\_resources/degree\\_requirements.php](http://atm.ucdavis.edu/student_resources/degree_requirements.php)

#### Avian Sciences

- Major was closed in 2011



### Biotechnology

- Major was formed in 1996
- currently administered through Plant Science Department
- Major currently has options in: Animal Biotechnology, Bioinformatics, Fermentation/Microbial Biotechnology, Plant Biotechnology
- web site: <http://biotechmajor.ucdavis.edu/>

### Clinical Nutrition

- Major was formed from Dietetics Major in 2001
- administered through Nutrition Department
- web site: <http://nutrition.ucdavis.edu/undergrad/index.cfm>

### Community and Regional Development

- no recent changes to Major
- administered through Human and Community Development Dept. (Dept. currently reorganizing with Landscape Architecture)
- current Major offers tracks in: Global Community, Policy & Planning & Social Services, Organization and Management
- web site: <http://hcd.ucdavis.edu/crd/undergrad/index.php>

### Ecological Management and Restoration

- Major formed in 2007 as a revision of Agricultural Management & Rangeland Resources Major (this Major was approved in 1993) which was a revision of the Agricultural Systems and Environment Major
- administered through Plant Science Dept
- web site: [http://www.plantsciences.ucdavis.edu/plantsciences/undergrad\\_students/eco\\_mgmt\\_major\\_gen.htm](http://www.plantsciences.ucdavis.edu/plantsciences/undergrad_students/eco_mgmt_major_gen.htm)

### Entomology

- no recent changes in Major
- administered through Entomology Department
- web site: <http://entomology.ucdavis.edu/undergrad.cfm>

### Environmental Horticulture and Urban Forestry

- no recent changes to Major
- administered through Plant Science Department
- Major currently offers the areas of specialization in: Urban Forestry, Floriculture/Nursery, Landscape Management/Turf, and Plant Biodiversity/Restoration
- web site: [http://www.plantsciences.ucdavis.edu/plantsciences/undergrad\\_students/envhort\\_major\\_gen.htm](http://www.plantsciences.ucdavis.edu/plantsciences/undergrad_students/envhort_major_gen.htm)

### Environmental Policy Analysis and Planning

- no recent changes to Major
- administered through Environmental Science and Policy Department
- Major currently offers areas of specialization in: Advanced Policy Analysis, City and Regional Planning, Energy Policy, Environmental Sciences, Transportation Planning, Water Quality
- web site: <http://www.des.ucdavis.edu/EPAP.html>

### Environmental Science and Management

- formed in 2007 from combining Environmental Resource Sciences; Environmental Biology, and Management; and Soil and Water Science
- currently co-administered through Departments of Land, Air and Water Resources and Environmental Science and Policy
- Major currently offers specialized tracks in: Ecology, Biodiversity, and Conservation; Natural Resource Management; Climate Change and Air Quality; Geospatial Information Science; Watershed Science; Soils and Biogeochemistry
- web sites: <http://www.des.ucdavis.edu/ESM.html> and [http://lawr.ucdavis.edu/undergrad\\_esm.htm](http://lawr.ucdavis.edu/undergrad_esm.htm)

### Environmental Toxicology

- no recent changes to Major
- administered through Environmental Toxicology Department
- Major currently offers areas of emphasis in: Ecotoxicology and Environmental Chemistry, Forensic Science and Regulatory Toxicology, Molecular and Biomedical Toxicology, Student Designed Emphasis
- web site: <http://www.envtox.ucdavis.edu/undergrad/default.html>

### Exploratory Program

- a College advising resource to help students identify a Major; often acts as a “holding pattern” while student wait to get accepted into a Major
- administered through CA&ES Dean’s Office
- web site: <http://caes.ucdavis.edu/StudInfo/clubs/undeclared-exploratory-program>

### Fiber and Polymer Science

- future status of Major uncertain; current administrative home is Textiles and Clothing Department
- web site: <http://textiles.ucdavis.edu/undergraduate>

### Food Science

- no recent changes to Major (Food Biochemistry Major was merged into FS as an option prior to 2004)
- administered through Food Science and Technology Department
- Major currently offers options in: Brewing Science, Consumer Food Science, Food Biology/Microbiology, Food Biochemistry, Food Business Management, Food Chemistry, Food Technology

- web site: <http://foodscience.ucdavis.edu/undergrad>

#### Human Development

- no recent changes to Major
- administered through Human and Community Development Dept.
- web site: <http://hcd.ucdavis.edu/hdfs/undergrad/index.php>

#### Hydrology

- Major formed in 1994
- administered through Department of Land, Air and Water Resources
- web site: [http://lawr.ucdavis.edu/undergrad\\_hyd.htm](http://lawr.ucdavis.edu/undergrad_hyd.htm)

#### International Ag Development

- no information on any current changes to Major
- previously housed in Applied Behavioral Sciences, then Human and Community Development, and now in Plant Sciences Department
- Major offers areas of specialization in: Agricultural Production; Economic Development; Environmental Issues; Rural Communities; Trade and Development in Agricultural Commodities
- web site: nothing on Plant Sciences home page yet;  
[http://admissions.ucdavis.edu/majors/major\\_view.cfm?major=aiad](http://admissions.ucdavis.edu/majors/major_view.cfm?major=aiad)

#### Landscape Architecture

- no recent changes to Major
- administrative home is changing with discontinuation of Landscape Design Department
- prospective students may enter into a Pre-Landscape Architecture program while they complete the application/portfolio process for admission to the Major
- web site: <http://lda.ucdavis.edu/program/undergrad/default.html>

#### Managerial Economics

- name of Major changed in 1999, previously called Agricultural and Managerial Economics
- administered through Agricultural and Resource Economics Department
- entering freshman and transfer students are admitted into Pre-Managerial Economics while completing Major preparatory requirements
- Major currently offers options in: Agricultural Economics; Environmental and Resource Economics; Managerial Economics,
- web site: <http://agecon.ucdavis.edu/undergraduate-program/>

#### Nutrition Science

- Major formed as a result of a merger of Nutritional Biochemistry and Community Nutrition Majors in ~1995
- administered through Department of Nutrition

- Major currently offers options in: Nutritional Biology and Nutrition in Public Health
- web site: <http://nutrition.ucdavis.edu/undergrad/index.cfm>

#### Plant Sciences

- formed from Crop Science and Management in 2007
- administered through Plant Science Dept
- Major currently offers specializations in: Plant Breeding and Genetics; Crop Production; Postharvest Biology and Technology
- web site: [http://www.plantsciences.ucdavis.edu/plantsciences/undergrad\\_students/plantsciences\\_major\\_gen.htm](http://www.plantsciences.ucdavis.edu/plantsciences/undergrad_students/plantsciences_major_gen.htm)

#### Science and Society

- no recent changes to program
- administered through Plant Pathology
- web site: <http://sas.ucdavis.edu/>

#### Sustainable Agriculture and Food Systems

- new Major in 2010-11
- administered through Agriculture Sustainability Institute and Dept. of Human and Community Development (administrative home Department rotates)
- Major offers tracks in: Agriculture and Ecology; Food and Society; Economics and Policy
- web site: <http://asi.ucdavis.edu/students/about-major>

#### Textiles and Clothing

- no students being admitted to Major at current time; current administrative Department is Textiles and Clothing, future home Department is uncertain
- Major currently offers options in Textile Science and Marketing/Economics
- web site: <http://textiles.ucdavis.edu/undergraduate>

#### Viticulture and Enology

- Major formed in 1997; previously was Fermentation Science Major housed in Food Science
- administered through Department of Viticulture and Enology
- web site: <http://wineserver.ucdavis.edu/content.php?category=Undergraduate%20Program>

#### Wildlife, Fish and Conservation Biology

- no recent changes to Major
- administered through Wildlife, Fish and Conservation Biology Department
- Major offers areas of specialization in: Conservation Biology; Fish Biology; Wildlife Biology; Wildlife Health; Individualized Specialization
- web site: <http://wfc.ucdavis.edu/major/general/>

**APPENDIX 4**

**Major Enrollments by Class Standing**

<b>Major</b>	<b>Class</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>Catalogue Dates In/Last Published<sup>e</sup></b>
Agri.Mgmt & Rangeland Resource	Freshman	9	8	5	1			
Agri.Mgmt & Rangeland Resource	Sophomore	4	6	1	3			
Agri.Mgmt & Rangeland Resource	Junior	6	7	6	2	2		
Agri.Mgmt & Rangeland Resource	Senior	5	5	8	6	4	2	
<b>Subtotal</b>		<b>24</b>	<b>26</b>	<b>20</b>	<b>12</b>	<b>6</b>	<b>2</b>	<b>2001 thru 2008</b>
Agric & Environ Education	Freshman			8	11	5	11	
Agric & Environ Education	Sophomore		1	1	8	8	6	
Agric & Environ Education	Junior				5	13	7	
Agric & Environ Education	Senior		3	2		5	9	
<b>Subtotal</b>		<b>0</b>	<b>4</b>	<b>11</b>	<b>24</b>	<b>31</b>	<b>33</b>	
Agricultural & Managerial Econ	Freshman							
Agricultural & Managerial Econ	Sophomore							
Agricultural & Managerial Econ	Junior	1						
Agricultural & Managerial Econ	Senior	2	2	1	2			
Agricultural & Managerial Econ	Limited							
Agricultural & Managerial Econ	Second Baccalaureate							
<b>Subtotal</b>		<b>3</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	
Agricultural Econ & Bus Mgmt	Freshman							
Agricultural Econ & Bus Mgmt	Sophomore							
Agricultural Econ & Bus Mgmt	Junior							
Agricultural Econ & Bus Mgmt	Senior							
Agricultural Econ & Bus Mgmt	Re-admit	1						
<b>Subtotal</b>		<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
Agricultural Systems & Environ	Freshman							
Agricultural Systems & Environ	Sophomore							
Agricultural Systems & Environ	Junior	1						
Agricultural Systems & Environ	Senior							
<b>Subtotal</b>		<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
Animal Biology	Freshman	85	81	80	69	79	82	
Animal Biology	Sophomore	33	38	46	48	45	63	
Animal Biology	Junior	49	56	58	66	84	86	
Animal Biology	Senior	45	43	55	61	75	81	
<b>Subtotal</b>		<b>212</b>	<b>218</b>	<b>239</b>	<b>244</b>	<b>283</b>	<b>312</b>	
Animal Science	Freshman	226	190	185	166	152	189	
Animal Science	Sophomore	128	144	139	140	159	143	
Animal Science	Junior	140	188	191	191	187	205	
Animal Science	Senior	153	153	189	230	230	217	

Animal Science	Second Baccalaureate	1		1	1	1		
<b>Subtotal</b>		<b>647</b>	<b>676</b>	<b>704</b>	<b>728</b>	<b>729</b>	<b>755</b>	
Animal Science & Management	Freshman	11	10	19	24	18	27	
Animal Science & Management	Sophomore	8	6	9	12	16	17	
Animal Science & Management	Junior	10	17	19	17	28	26	
Animal Science & Management	Senior	16	13	18	25	23	34	
<b>Subtotal</b>		<b>45</b>	<b>46</b>	<b>65</b>	<b>78</b>	<b>85</b>	<b>104</b>	
Applied Behavioral Science	Freshman							
Applied Behavioral Science	Sophomore							
Applied Behavioral Science	Junior							
Applied Behavioral Science	Senior				1			
<b>Subtotal</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	
Atmospheric Science	Freshman	9	10	4	2	5	3	
Atmospheric Science	Sophomore	4	2	8	2	1	4	
Atmospheric Science	Junior	5	5	4	12	4	5	
Atmospheric Science	Senior	6	6	5	2	8	5	
Atmospheric Science	Second Baccalaureate							
<b>Subtotal</b>		<b>24</b>	<b>23</b>	<b>21</b>	<b>18</b>	<b>18</b>	<b>17</b>	
Avian Sciences ***	Freshman	7	1	1	2	2		
Avian Sciences ***	Sophomore	1	4	4		1	3	
Avian Sciences ***	Junior	7	3	4	6	2	2	
Avian Sciences ***	Senior	10	7	8	4	5	3	
<b>Subtotal</b>		<b>25</b>	<b>15</b>	<b>17</b>	<b>12</b>	<b>10</b>	<b>8</b>	<b>Fall 2010 ***</b>
Biotechnology	Freshman	64	46	54	41	42	43	
Biotechnology	Sophomore	42	44	35	41	32	33	
Biotechnology	Junior	76	72	58	60	65	47	
Biotechnology	Senior	80	108	126	104	88	95	
Biotechnology	Second Baccalaureate		1	1		1		
<b>Subtotal</b>		<b>262</b>	<b>271</b>	<b>274</b>	<b>246</b>	<b>228</b>	<b>218</b>	
Clinical Nutrition	Freshman	36	33	34	20	30	41	
Clinical Nutrition	Sophomore	28	37	45	35	30	32	
Clinical Nutrition	Junior	70	78	90	103	93	109	
Clinical Nutrition	Senior	83	109	128	141	142	128	
Clinical Nutrition	Second Baccalaureate		1	1				
<b>Subtotal</b>		<b>217</b>	<b>258</b>	<b>298</b>	<b>299</b>	<b>295</b>	<b>310</b>	
Community & Regional Developmt	Freshman	31	18	20	10	11	15	
Community & Regional Developmt	Sophomore	21	27	21	33	19	15	
Community & Regional Developmt	Junior	40	34	54	63	70	49	
Community & Regional Developmt	Senior	64	65	61	82	84	93	
Community & Regional Developmt	Second Baccalaureate			1	1			

<b>Subtotal</b>		156	144	157	189	184	172	
Crop Science & Management	Freshman	23	13	3				
Crop Science & Management	Sophomore	8	14	7	2			
Crop Science & Management	Junior	4	13	13	3			
Crop Science & Management	Senior	4	3	9	8	5		
Crop Science & Management	Second Baccalaureate							
<b>Subtotal</b>		39	43	32	13	5	0	
Design*	Freshman							
Design*	Sophomore							
Design*	Junior							
Design*	Senior							
Design*	Second Baccalaureate							
<b>Subtotal</b>		71	18			1		
Ecological Mgmt & Restoration <sup>a</sup>	Freshman				1	5	2	
Ecological Mgmt & Restoration <sup>a</sup>	Sophomore					1	3	
Ecological Mgmt & Restoration <sup>a</sup>	Junior				3		3	
Ecological Mgmt & Restoration <sup>a</sup>	Senior				2	5	4	
<b>Subtotal</b>		0	0	0	6	11	12	
Entomology	Freshman	3	3	5	5	3	5	
Entomology	Sophomore	2	3	3	4	5	3	
Entomology	Junior	5	3	8	7	12	9	
Entomology	Senior	9	6	5	6	8	15	
<b>Subtotal</b>		19	15	21	22	28	32	
Environ Hort & Urban Forestry	Freshman	5	3	5	3	2	6	
Environ Hort & Urban Forestry	Sophomore	8	5	6	5	4	7	
Environ Hort & Urban Forestry	Junior	11	12	15	16	11	15	
Environ Hort & Urban Forestry	Senior	11	12	21	19	23	14	
Environ Hort & Urban Forestry	Second Baccalaureate	1						
<b>Subtotal</b>		36	32	47	43	40	42	
Environ Policy Analy & Plan	Freshman	24	23	26	34	31	37	
Environ Policy Analy & Plan	Sophomore	11	15	25	23	34	25	
Environ Policy Analy & Plan	Junior	18	28	34	47	34	45	
Environ Policy Analy & Plan	Senior	28	21	35	47	51	67	
<b>Subtotal</b>		81	87	120	151	150	174	
Environ Sci & Management <sup>b</sup>	Freshman				54	80	90	
Environ Sci & Management <sup>b</sup>	Sophomore				24	53	67	
Environ Sci & Management <sup>b</sup>	Junior				34	60	79	
Environ Sci & Management <sup>b</sup>	Senior				9	41	70	
<b>Subtotal</b>		0	0	0	121	234	306	
Environmental Biology & Mgmt	Freshman	19	17	32	4			
Environmental Biology & Mgmt	Sophomore	10	12	12	18	1	1	
Environmental Biology & Mgmt	Junior	15	16	30	10	8	2	

Environmental Biology & Mgmt	Senior	23	23	16	27	3	2	
<b>Subtotal</b>		<b>67</b>	<b>68</b>	<b>90</b>	<b>59</b>	<b>12</b>	<b>5</b>	<b>1990 - 2008</b>
Environmental Planning & Mgmt	Freshman							
Environmental Planning & Mgmt	Junior							
Environmental Planning & Mgmt	Senior	1						
<b>Subtotal</b>		<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
Environmental Resource Science	Freshman	29	27	38	7			
Environmental Resource Science	Sophomore	12	16	24	21	4		
Environmental Resource Science	Junior	12	22	32	20	13	3	
Environmental Resource Science	Senior	11	15	25	34	16	11	
<b>Subtotal</b>		<b>64</b>	<b>80</b>	<b>119</b>	<b>82</b>	<b>33</b>	<b>14</b>	<b>1992 - 2008</b>
Environmental Toxicology	Freshman	3	4	7	6	5	5	
Environmental Toxicology	Sophomore	8	6	4	15	12	9	
Environmental Toxicology	Junior	10	18	19	26	31	32	
Environmental Toxicology	Senior	21	25	28	31	46	47	
Environmental Toxicology	Second Baccalaureate	1		1	1			
<b>Subtotal</b>		<b>43</b>	<b>53</b>	<b>59</b>	<b>79</b>	<b>94</b>	<b>93</b>	
Explor - Animal & Plant Sci °	Freshman	38	8					
Explor - Animal & Plant Sci °	Sophomore	30	12	3				
Explor - Animal & Plant Sci °	Junior	1	11	5				
Explor - Animal & Plant Sci °	Senior						1	
<b>Subtotal</b>		<b>69</b>	<b>31</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>Not Available</b>
Explor- Human Sciences °	Freshman	109	22					
Explor- Human Sciences °	Sophomore	81	52	11	1	1		
Explor- Human Sciences °	Junior	3	29	11		1		
Explor- Human Sciences °	Senior		1	4	1	1	1	
<b>Subtotal</b>		<b>193</b>	<b>104</b>	<b>26</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>Not Available</b>
Exploratory Environ Resources °	Freshman	47	13					
Exploratory Environ Resources °	Sophomore	16	21	6	1			
Exploratory Environ Resources °	Junior	3	3	4	4	1		
Exploratory Environ Resources °	Senior			3	2			
<b>Subtotal</b>		<b>66</b>	<b>37</b>	<b>13</b>	<b>7</b>	<b>1</b>	<b>0</b>	
Exploratory Program °	Freshman	3	453	489	397	391	289	
Exploratory Program °	Sophomore	78	15	225	271	260	262	
Exploratory Program °	Junior	98	29	22	60	79	89	
Exploratory Program °	Senior	11	10	9	8	8	19	



Exploratory Program °	Limited							
Exploratory Program °	Second Baccalaureate							
<b>Subtotal</b>		190	507	745	736	738	659	
Fermentation Science	Freshman							
Fermentation Science	Sophomore							
Fermentation Science	Junior							
Fermentation Science	Senior		1					
Fermentation Science	Second Baccalaureate							
<b>Subtotal</b>		0	1	0	0	0	0	
Fiber and Polymer Science	Freshman	14	7	2	1			
Fiber and Polymer Science	Sophomore	2	8	5	1	1	1	
Fiber and Polymer Science	Junior	5	4	3	4		1	
Fiber and Polymer Science	Senior	2	2	2	1	2		
Fiber and Polymer Science	Second Baccalaureate							
<b>Subtotal</b>		23	21	12	7	3	2	
Food Biochemistry	Freshman							
Food Biochemistry	Sophomore							
Food Biochemistry	Junior	1						
Food Biochemistry	Senior							
Food Biochemistry	Second Baccalaureate							
<b>Subtotal</b>		1	0	0	0	0	0	
Food Science	Freshman	41	26	24	26	33	56	
Food Science	Sophomore	30	34	27	21	28	25	
Food Science	Junior	36	45	57	52	48	61	
Food Science	Senior	46	56	58	88	85	76	
Food Science	Second Baccalaureate	1	2	2				
<b>Subtotal</b>		154	163	168	187	194	218	
Human Development	Freshman	52	37	31	28	39	39	
Human Development	Sophomore	37	50	42	53	50	61	
Human Development	Junior	133	132	149	144	158	175	
Human Development	Senior	178	142	164	204	188	234	
Human Development	Second Baccalaureate							
<b>Subtotal</b>		400	361	386	429	435	509	
Hydrology	Freshman	2	1	3	4		2	
Hydrology	Sophomore		2	2	3	6	1	
Hydrology	Junior	4	2	4	5	7	7	
Hydrology	Senior	2	4	4	9	11	9	
Hydrology	Second Baccalaureate							
<b>Subtotal</b>		8	9	13	21	24	19	
Individual	Sophomore							
Individual	Junior	1						

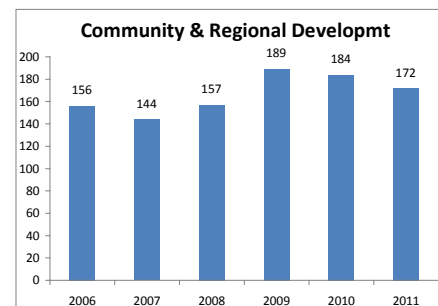
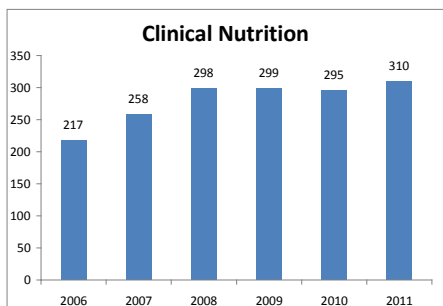
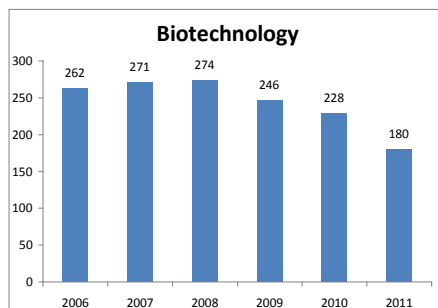
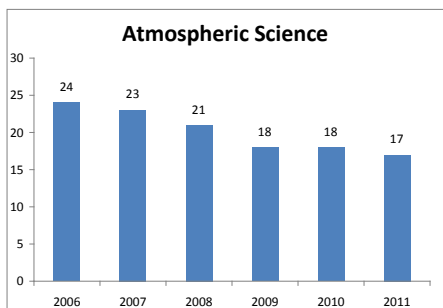
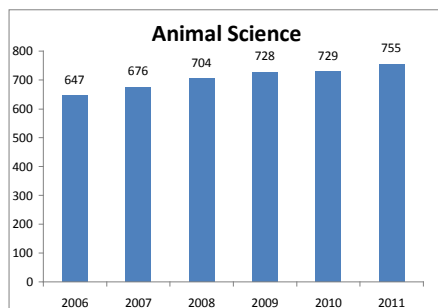
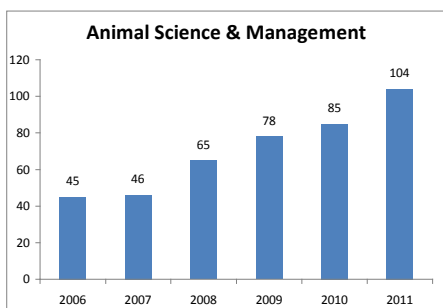
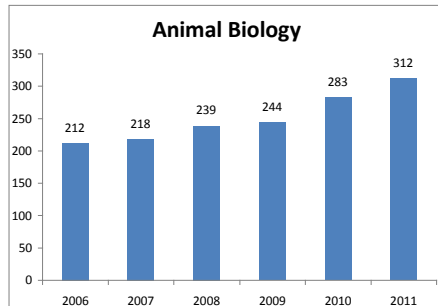
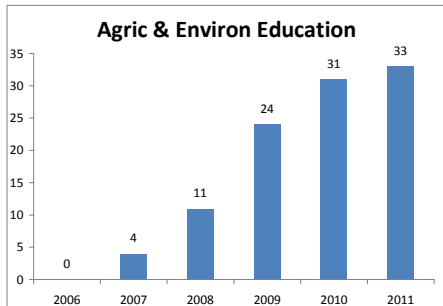
Individual	Senior	2		1	2			
<b>Subtotal</b>		<b>3</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	
International Agric Developmt	Freshman	3	1	3	2	13	9	
International Agric Developmt	Sophomore	2	2	7	7	8	9	
International Agric Developmt	Junior	6	7	3	12	17	12	
International Agric Developmt	Senior	8	6	13	13	21	20	
<b>Subtotal</b>		<b>19</b>	<b>16</b>	<b>26</b>	<b>34</b>	<b>59</b>	<b>50</b>	
Landscape Architecture	Freshman	1						
Landscape Architecture	Sophomore	3	3		3	1		
Landscape Architecture	Junior	15	21	16	20	19	11	
Landscape Architecture	Senior	47	49	58	55	51	51	
Landscape Architecture	Second Baccalaureate		3	3	1	3	1	
<b>Subtotal</b>		<b>66</b>	<b>76</b>	<b>77</b>	<b>79</b>	<b>74</b>	<b>63</b>	
Limited Status	Limited		1					
<b>Subtotal</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
Managerial Economics	Freshman	2		3	3			
Managerial Economics	Sophomore	24	26	34	38	25	18	
Managerial Economics	Junior	135	155	157	148	130	121	
Managerial Economics	Senior	270	261	299	334	302	306	
Managerial Economics	Second Baccalaureate							
<b>Subtotal</b>		<b>431</b>	<b>442</b>	<b>493</b>	<b>523</b>	<b>457</b>	<b>445</b>	
Nutrition Science	Freshman	64	37	46	36	56	53	
Nutrition Science	Sophomore	29	49	24	34	36	47	
Nutrition Science	Junior	56	84	88	70	81	90	
Nutrition Science	Senior	61	63	79	107	97	86	
Nutrition Science	Limited	1						
Nutrition Science	Second Baccalaureate			1	1			
<b>Subtotal</b>		<b>211</b>	<b>233</b>	<b>238</b>	<b>248</b>	<b>270</b>	<b>276</b>	
Plant Science	Freshman							
Plant Science	Sophomore					1		
Plant Science	Junior							
Plant Science	Senior							
<b>Subtotal</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	
Plant Sciences <sup>d</sup>	Freshman				2	3	6	
Plant Sciences <sup>d</sup>	Sophomore				1	3	4	
Plant Sciences <sup>d</sup>	Junior				7	11	13	
Plant Sciences <sup>d</sup>	Senior				1	8	14	
<b>Subtotal</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>25</b>	<b>37</b>	
Pre-Design	Freshman							
Pre-Design	Sophomore	2						
Pre-Design	Junior	2						
Pre-Design	Senior		1	1				
<b>Subtotal</b>		<b>4</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	
Pre-Landscape Architecture	Freshman	23	25	36	26	16	19	
Pre-Landscape Architecture	Sophomore	23	20	21	32	20	26	

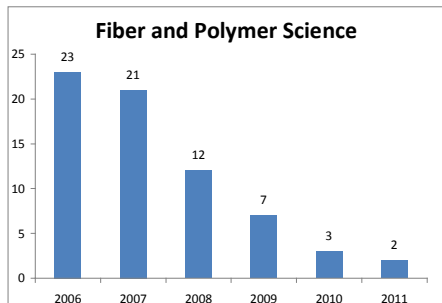
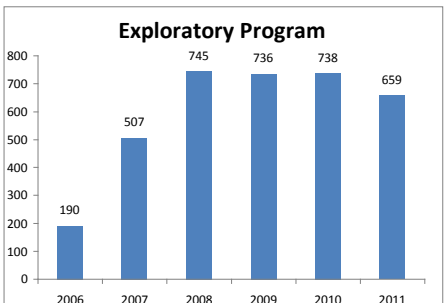
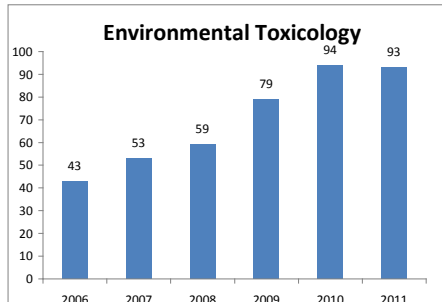
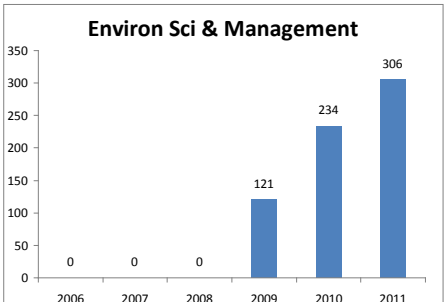
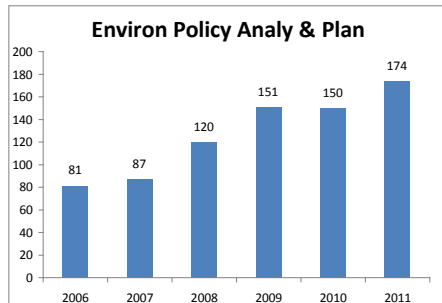
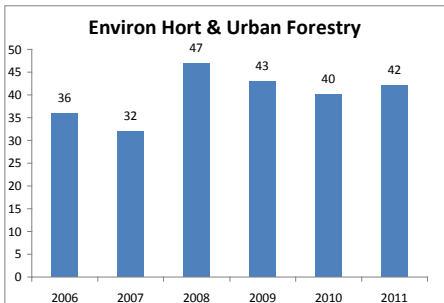
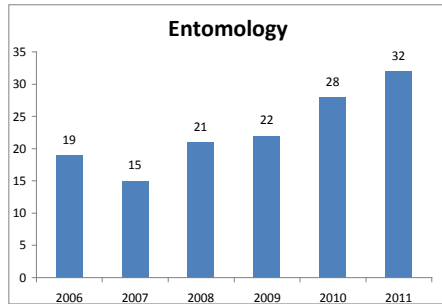
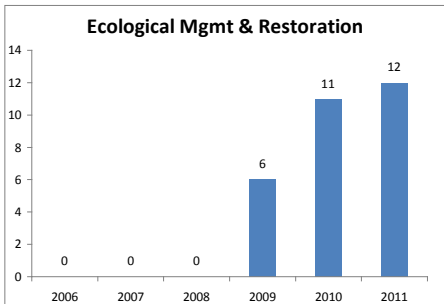
Pre-Landscape Architecture	Junior	28	43	36	34	31	34	
Pre-Landscape Architecture	Senior	6	7	8	6	7	6	
Pre-Landscape Architecture	Second Baccalaureate	3	1	4	6	1		
<b>Subtotal</b>		<b>83</b>	<b>96</b>	<b>105</b>	<b>104</b>	<b>75</b>	<b>85</b>	
Pre-Managerial Economics	Freshman	160	94	100	77	71	64	
Pre-Managerial Economics	Sophomore	60	85	59	67	73	53	
Pre-Managerial Economics	Junior	127	141	159	162	204	175	
Pre-Managerial Economics	Senior	16	32	32	25	33	26	
<b>Subtotal</b>		<b>363</b>	<b>352</b>	<b>350</b>	<b>331</b>	<b>381</b>	<b>318</b>	
Santa Cruz visitor	Junior				1			
<b>Subtotal</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	
Soil & Water Science	Freshman		1	2				
Soil & Water Science	Sophomore		1	1	1			
Soil & Water Science	Junior	2		2	1			
Soil & Water Science	Senior	1	3	2	3	3	1	
<b>Subtotal</b>		<b>3</b>	<b>5</b>	<b>7</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>1990 - 2008</b>
Sustainable Ag & Food Sys	Sophomore						2	
Sustainable Ag & Food Sys	Junior						4	
<b>Subtotal</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	
Textiles & Clothing	Freshman	14	23	12	14	22	18	
Textiles & Clothing	Sophomore	12	14	25	9	14	17	
Textiles & Clothing	Junior	19	19	28	29	26	18	
Textiles & Clothing	Senior	30	18	18	32	26	26	
<b>Subtotal</b>		<b>75</b>	<b>74</b>	<b>83</b>	<b>84</b>	<b>88</b>	<b>79</b>	
Viticulture & Enology	Freshman	20	10	14	20	12	24	
Viticulture & Enology	Sophomore	8	14	8	5	17	6	
Viticulture & Enology	Junior	17	21	24	23	11	30	
Viticulture & Enology	Senior	35	33	31	35	32	22	
Viticulture & Enology	Limited							
Viticulture & Enology	Second Baccalaureate	15	25	18	18	19	11	
<b>Subtotal</b>		<b>95</b>	<b>103</b>	<b>95</b>	<b>101</b>	<b>91</b>	<b>93</b>	
Wildlife & Fisheries Biology	Freshman							
Wildlife & Fisheries Biology	Sophomore							
Wildlife & Fisheries Biology	Junior							
Wildlife & Fisheries Biology	Senior			1	1			
Wildlife & Fisheries Biology	Second Baccalaureate							
<b>Subtotal</b>		<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	
WildlifeFish & Conserv Bio	Freshman	17	17	27	25	20	35	
WildlifeFish & Conserv Bio	Sophomore	15	18	20	27	24	30	
WildlifeFish & Conserv Bio	Junior	42	28	39	45	59	57	
WildlifeFish & Conserv Bio	Senior	53	43	54	53	76	88	

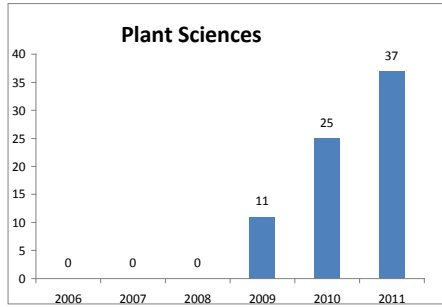
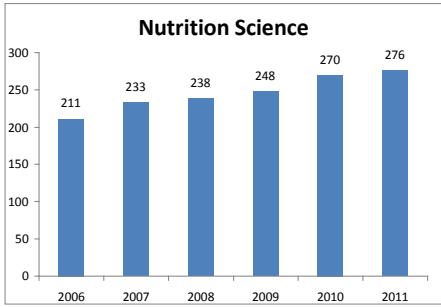
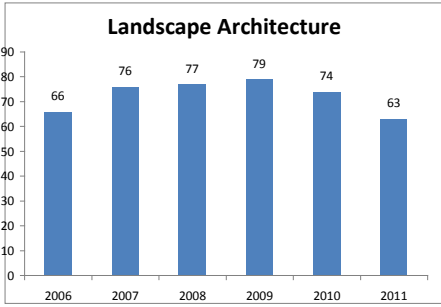
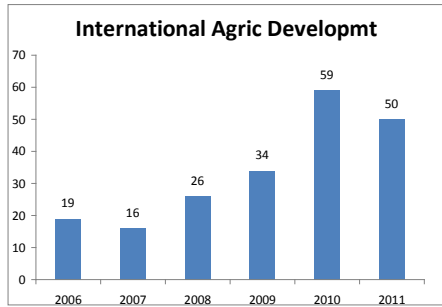
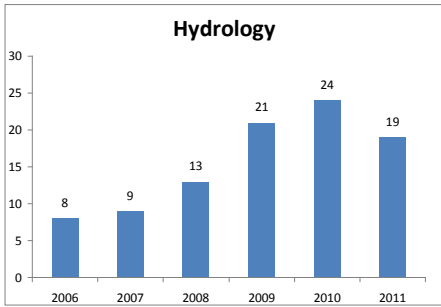
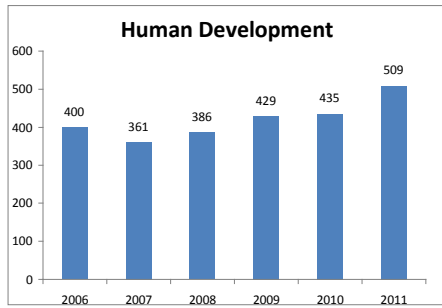
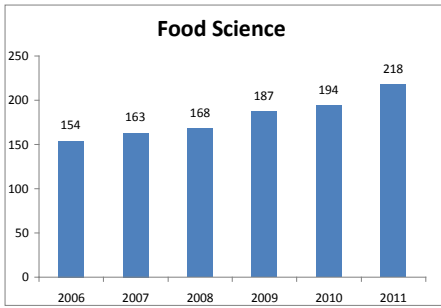
WildlifeFish & Conserv Bio	Second Baccalaureate	1	1		1	1	1	
<b>Subtotal</b>		128	107	140	151	180	211	
	<b>Total Students</b>	4,623	4,819	5,283	5,493	5,579	5,682	
	<b>Total Majors</b>	42	40	39	42	39	37	
						Consolidated/Disc ontinued/ NameCh anged <sup>e</sup>	7	
						<b>Active</b>	<b>30</b>	Includes Pre- Managerial Economics , Pre- Landscape Architectur e and Explorator y Program
<b>APPENDIX 3 (CONT)</b>								
Prepared by Carol Simmons, CA&ES Dean's Office								
<b>Note: Majors either consolidated or name changed</b>								
<b>** Design - Fr-So-Jr &amp; Sr numbers not available on total count for major</b>								
<b>a. Ecological Mgmt &amp; Restoration was Agr. Mgmt. &amp; Range Resources</b>								
<b>b. Env. Sci. &amp; Mgmt a consolidation of Env. Resource Sciences, Environ Biology &amp; Mgmt, and Soli &amp; Water Sciences</b>								
<b>c. Exploratory Program - a consolidation of Explor - Animal &amp; Plant Sci, Explor- Human Sciences, and Exploratory Environ Resources</b>								
<b>d. Plant Sciences was Crop Science &amp; Mgmt.</b>								
<b>e. This data is not in banner. Dates provided by Registrar's office. They are in the process of creating a file to be placed on their website providing information on Majors such as start and end date, name changes, consolidation, etc. *** Closed 2010 to new students</b>								

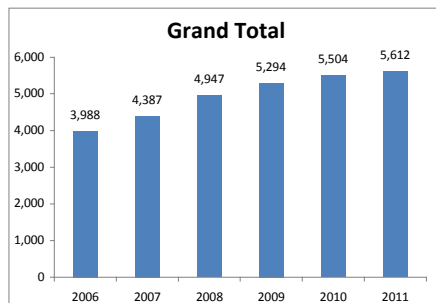
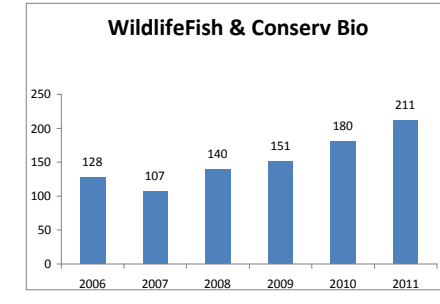
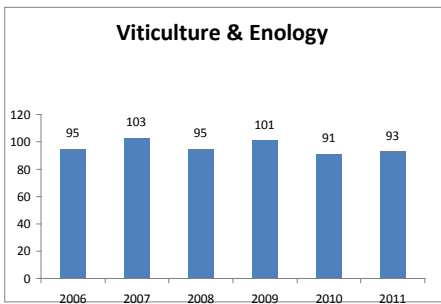
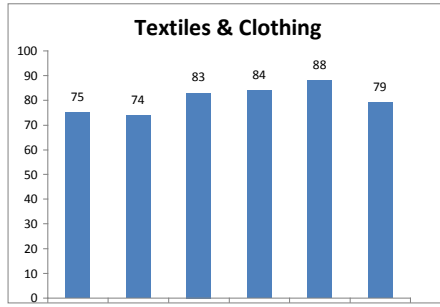
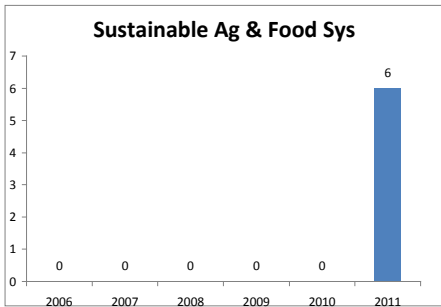
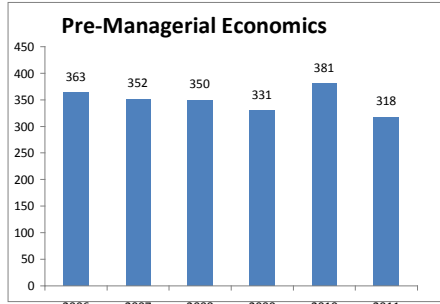
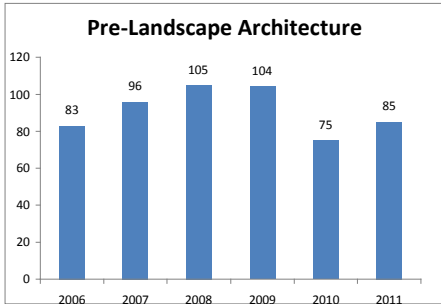
## APPENDIX 5

### CA&ES Enrollments by Majors (2006-2011).











## APPENDIX 6

### Comparison of Majors offered in Colleges of Agriculture at Selected Comparison Institutions

Texas A&M	Cornell	UC Davis
College of Agriculture & Life Sciences	College of Agriculture & Life Sciences	College of Agricultural and Environmental Sciences
Agribusiness Agricultural Communications and Journalism	Agricultural Sciences	Agricultural & Environmental Education
Agricultural Economics	Animal Science	Animal Biology
Agricultural Leadership and Development	Applied Economics and Management	Animal Science
Agricultural Science	Atmospheric Science	Animal Science and Management
Agricultural Systems Management	Biological Engineering	Atmospheric Science
Agronomy	Biological Sciences	Biotechnology
Animal Science	Biology and Society	Clinical Nutrition
Biochemistry	Biometry and Statistics	Community and Regional Development
Bioenvironmental Sciences	Communication	Ecological Management and Restoration
Biological and Agricultural Engineering	Development Sociology	Entomology
Dairy Science	Entomology	Environmental Horticulture and Urban Forestry
Ecological Restoration	Environmental Engineering	Environmental Policy Analysis and Planning
Entomology	Environmental Exploration	Environmental Science and Management
Environmental Studies	Food Science	Environmental Toxicology
Food Science and Technology	<b>Information Science</b>	<b>Fiber &amp; Polymer Science</b>
Forensic and Investigative Sciences	International Agriculture and Rural Development	Food Science
Forestry	Landscape Architecture	Human Development
Genetics	Natural Resources	Hydrology
Horticultural Sciences	Nutritional Sciences	International Agricultural Development
Nutritional Sciences	Plant Sciences	Landscape Architecture
Plant and Environmental Soil Sciences	Science of Earth Systems	Managerial Economics
Poultry Science	Science of Natural and Environmental Systems	Nutrition Science
Rangeland Ecology and Management	<b>Viticulture and Enology</b>	Plant Sciences
<b>Recreation, Park and Tourism Sciences</b>		Sustainable Agriculture and Food Systems
Renewable Natural Resources		<b>Textiles &amp; Clothing</b>
<b>Spatial Sciences</b>		<b>Viticulture and Enology</b>
Wildlife and Fisheries Sciences		Wildlife, Fish and Conservation Biology
		<b>Undeclared/Exploratory Program</b>
<b>Texas A&amp;M</b>	<b>Cornell</b>	<b>UC Davis</b>
Liberal Arts majors = 20	Liberal Arts majors = 39	Liberal Arts majors = 48
<b>Unique, unusual majors</b>		

## APPENDIX 7

### CA&ES 2010-11 RESOURCE ALLOCATION FORMULA

Function	A. Base	B. Students enrolled in courses	C. Undergrad majors and graduate students	D. Outreach and service activities	E. Extramural funding (including CE grants)	F. Special Facilities
1. Core administration	0.3 Staff/FTE (\$14,700/FTE) (I&r, AES) Supplies (\$3,000/FTE) (I&r, AES) Staff Workload \$4,000/FTE (I&r, AES)	\$4.85/SCH	C1a: \$100 per Undergrad major ----- C1b: \$200 per Grad student	0.3 Staff/FTE (\$2,900/FTE) (CE) Supplies (\$0/FTE) (CE) Staff Workload \$4,000/FTE (CE)	3.0% x TDC expenditures in grants and contracts	\$1/sq ft of EHS monitored laboratory space and \$0.10/sq ft of other lab space
2. Administration support, faculty discretion	\$1,600/FTE (I&r, AES)	\$500 per Freshman seminar	\$30/Undergrad advisee	\$1,600/FTE + \$1,500/FTE (CE) for extra telephone and mail		
3. Administration support, department discretion		\$2/SCH for CA&ES GE courses with writing requirement	C3a: Grad group admin ----- C3b: Grad program admin		.8682% x TDC expenditures in grants and contracts	
4. Teaching		B.4.a.: Supplies and non-academic service for lab courses				Special facilities as justified
5. Research	\$1,500/FTE (I&r, AES)		SISS Funding for Visiting Scholar and Student Visas	\$500/FTE (CE)		Special facilities as justified
6. Outreach	\$500/FTE (I&r, AES)			\$5,000/FTE (CE)		Special facilities as justified

TDC=Total Direct Costs; SCH=Student Credit Hours  
\$25,300 TOTAL

\$15,500 TOTAL

**Source: Tom Kaiser, CA&ES**

**CA&ES 2011-12 RESOURCE ALLOCATION FORMULA**

Function	A. Base	B. Students enrolled in courses	C. Undergrad majors and graduate students	D. Outreach and service activities	E. Extramural funding (including CE grants)	F. Special Facilities
1. Core administration	0.3 Staff/FTE (\$14,975/FTE) (I&r, AES) Supplies (\$3,000/FTE) (I&r, AES) Staff Workload (\$4,000/FTE) (I&r, AES)	\$4.85/SCH	C1a: \$100 per Undergrad major ----- C1b: \$200 per Grad student	0.3 Staff/FTE (\$6,400/FTE) (CE) Supplies (\$0/FTE) (CE) Staff Workload (\$4,000/FTE) (CE)	3.0% x TDC expenditures in grants and contracts	\$1/sq ft of EHS monitored laboratory space and \$0.10/sq ft of other lab space
2. Administration support, faculty discretion	\$1,600/FTE (I&r, AES)	\$500 per Freshman seminar	\$30/Undergrad advisee	\$1,600/FTE + \$1,500/FTE (CE) for extra telephone and mail		
3. Administration support, department discretion		\$2/SCH for CA&ES GE courses with writing requirement	C3a: Grad group admin ----- C3b: Grad program admin		.4314% x TDC expenditures in grants and contracts	
4. Teaching		B.4.a.: Supplies and non-academic service for lab courses				Special facilities as justified
5. Research	(\$0/FTE) (I&r, AES)		SISS Funding for Visiting Scholar and Student Visas	(\$0/FTE) (CE)		Special facilities as justified
6. Outreach	(\$0/FTE) (I&r, AES)			\$5,000/FTE (CE)		Special facilities as justified

TDC=Total Direct Costs; SCH=Student Credit Hours  
\$23,575 TOTAL

\$18,500 TOTAL

**Source: Tom Kaiser, CA&ES**

## APPENDIX 8

### Listing of Most Recent Program Reviews Available and Surveyed for this Report

Agricultural Management and Rangeland Resources, 2001  
Animal Science, 1999  
Animal Science and Management, 2003  
Animal Biology, 2005  
Atmospheric Science, 2008  
Avian Science, 1999  
Biotechnology, 2007  
Clinical Nutrition, 2003  
Community and Regional Development, 2005 and 2010/11  
Entomology, 2005  
Environmental Biology and Management, 2003 (2011/12 Environmental Science and Management review in progress)  
Environmental Horticulture and Urban Forestry, 2007  
Environmental Policy Analysis and Planning, 2003 (2011/12 review in progress)  
Environmental and Resource Science, 2004 (2011/12 Environmental Science and Management review in progress)  
Environmental Toxicology, 2008  
Exploratory Program, 1998  
Fiber and Polymer Science, 2005  
Food Science, 2004  
Human Development, 1999 and 2010/11  
Hydrology, 2008  
International Agricultural Development, 1988  
Landscape Architecture, 2007  
Managerial Economics, 2005 and 2010/11  
Nutrition Science, 2000  
Plant Science, 1988 (no review of Crop Science and Management completed)  
Science and Society, 2009  
Soil and Water Science, 2001 (2011/12 Environmental Science and Management review in progress)  
Textiles and Clothing, 2005  
Viticulture and Enology, 2004  
Wildlife, Fish, and Conservation Biology, 2004

## APPENDIX 9

### **Master Advisors and Staff Advisors: *ad hoc* Curriculum Planning Committee Interview Questions, Fall 2011**

Our *ad hoc* Curriculum Planning Committee has been charged with reviewing and evaluating the curriculum and majors in our college and providing strategic recommendations to the CA&ES Executive Committee and Dean Van Alfen. The committee has reviewed information from Undergraduate Program Reviews for all majors. As part of our *ad hoc* committee review we are also interviewing and/or surveying a number of groups and individuals to obtain input on key issues facing programs.

Three over-arching questions will frame our discussions:

1. How can we as a faculty and as a college deliver a curriculum that serves our students and is a curriculum the faculty can and want to deliver?
2. Can we create a strategic vision for the curriculum across the college (and possibly across the campus)?
3. In times of continuing limitations in resources (i.e., limited faculty FTE, TA and staff support, etc.), what mechanisms can we identify to efficiently deliver a curriculum while maintaining strong programs and majors?

Specific questions to consider (we are not asking for written responses at this time, however, these questions will guide our in-person interviews):

1. What common themes reach across programs and majors?
2. Are there redundancies in tracks within and across majors and/or should some majors be restructured as tracks within another major? Conversely should some tracks be separated out into majors?
3. Does size matter? Is there a minimum size (based on student numbers, faculty FTE, etc.) below which a major is no longer viable? How do we define viability? Is there a maximum size that makes delivery of a major difficult and student experience diminished?
4. Are there majors or programs that are lacking in our college? How do we determine the 'value' of majors to the students, the state, the country, and the world?
5. Can we provide a broader campus context for our majors and/or would inter-college majors be feasible or desirable?
6. How can we improve the coordination and approval of majors and courses within CA&ES and across colleges?
7. How can we improve the review of majors within our college?

8. What resources and support are specifically needed to effectively maintain majors?  
e.g., staff and advising support, “marketing” and web page support, etc.  
  
What mechanisms can be used to prioritize allocation of these resources?  
  
How can we improve efficiencies in utilization of these resources?
9. How can we identify mechanisms to align new faculty allocations to curriculum needs?  
How can we engage and prepare faculty to teach in the majors we support?
10. What types of support are needed to effectively deliver the curriculum in your program?  
e.g., staff support, TA allocations, space needs, development of pedagogical methods,  
etc.  
  
What mechanisms can be used to prioritize allocation of these resources?  
  
Can we improve efficiencies in utilization of these resources?
11. Are there courses that habitually deny enrollment to your students (including “Impacted Courses”)? Or that you habitually deny access to other students?
12. Are there ways we can improve delivery of and access to prerequisite classes that are needed by many majors?
13. What are strengths and weaknesses of the Exploratory major? Does it effectively funnel students into our majors?
14. Are students obtaining the skills they need to be successful in the workplace and as members of society? What skills are needed?
15. Are there retirements on the near horizon that threaten your ability to deliver required courses for your majors? Do you have a plan for dealing with this?
16. Additional comments or questions.

Thank you for your time in considering these issues.

**Committee members:**

Susan Ebeler, Viticulture and Enology, Committee Chair

Larry Harper, Human & Community Development

Kyaw Tha Paw U, Land, Air and Water Resources

Mark Matthews, Viticulture & Enology

Ken Shackel, Plant Sciences

Truman Young, Plant Sciences

Diane Ullman, Associate Dean for Undergraduate Programs, ex-officio

## APPENDIX 10

### Ad hoc Curriculum Planning Committee Student Survey Questions, Fall 2011

The College of Agriculture and Environmental Sciences (CA&ES) Executive Committee has appointed an ad hoc Curriculum Planning Committee to review and evaluate the curriculum and majors in our college and to provide strategic recommendations to the college Executive Committee and Dean Van Alfen. As part of this process, our ad hoc committee is interviewing and/or surveying a number of groups and individuals to obtain information about a number of key issues.

Obtaining student input is an important part of our process and we invite you to participate by providing written responses to a list of key questions and to attend an in-person interview where we will discuss some of these questions and ideas more thoroughly. To participate in our review, please consider the questions below and provide written responses to us by November 7. Please send your responses to Carol Simmons (casimmons@ucdavis.edu) and all identifying information will be removed before it comes to the committee. You are also invited to participate in an in-person discussion of curriculum and majors in our College in November. We will send more information about this meeting at a later date.

Please provide written response to the following questions:

1. How did you decide on your major and find your major program? What year did you decide on your major? Circle one: Freshman    Sophomore    Junior    Senior
2. Is it important to you to have a broad topical major, or to have a highly specialized, specific major, or do you have no preference?
3. Are there other majors or programs in our college that don't currently exist but that you would like to have available?
4. Did the size of your major/program (i.e., number of students in the program) influence your decision regarding your choice of major? If so, describe.
5. Are you satisfied with the size (i.e., number of students) of your major program, i.e., is your major program too large, too small, OK? Please also indicate your major or an estimate of the number of students in the major so we know what you mean by large, small, etc.
6. Does the number of students in a class influence your satisfaction with the class? If so, please describe.
7. What has been your experience in lab/field courses? Do you want more or fewer lab/field courses in the curriculum? Can lab/field courses be improved and if so, how?
8. Have you gone to office hours with faculty members? If so, how valuable did you find this?
9. Are there classes or prerequisites in your major that are frequently difficult to get into? If so, please list.
10. Have you ever taken an on-line course? If not, why not? If so, how would you compare it to traditional classes you have taken? Would you like to see more on-line courses?
11. Have you had classes with TA's? If so, do you think the TA's are as effective, more effective, or less effective than the Professor was?

12. Have you had classes with Lecturers? If so, do you think the Lecturers are as effective, more effective, or less effective than the Professor was? Would you like to see more or fewer classes taught by lecturers?
13. Are advising resources in your major adequate? How often do you meet with a staff advisor? How often do you meet with a faculty advisor?
14. Have you carried out research or other types of internships with UCD faculty or elsewhere? Would you like more or less of this type of experience?
15. Please briefly comment on how well your major program and course work has prepared you in areas such as leadership, ethics, teamwork, and communication skills. Are there areas that you think should be emphasized more (or less)?
16. Are you aware of occupational/professional opportunities that can be pursued with your degree? Do you feel that your major has prepared you for these opportunities?
17. Are you aware of additional preparation needed to qualify for post-graduate and/or profession training in your field? Do you feel that your major program has prepared you for these post-graduate training opportunities?
18. What was the best class you have ever been in, in your life (from Kindergarten through UCD)? Why did you like this class the most?
19. Please feel free to add any additional comments or questions about your major, courses you have taken, and the curriculum in our college.

Your responses will be very important as we consider our final recommendations. Thank you for your time in considering these issues.

**Committee members:**

Susan Ebeler, Viticulture and Enology, Committee Chair

Larry Harper, Human & Community Development

Kyaw Tha Paw U, Land, Air and Water Resources

Mark Matthews, Viticulture & Enology

Ken Shackel, Plant Sciences

Truman Young, Plant Sciences

Diane Ullman, Associate Dean for Undergraduate Programs, ex-officio



STANDING COMMITTEES:  
ACADEMIC SENATE of the COLLEGE OF AGRICULTURAL and ENVIRONMENTAL SCIENCES  
ACADEMIC FEDERATION of the DIVISION OF AGRICULTURE and NATURAL RESOURCES  
OFFICE of the DEAN and DIRECTOR of PROGRAMS

February 4, 2013

**CHRIS CALVERT**

Chair, CA&ES Executive Committee

**RE: 2012-13 Undergraduate Program Reviews**

Dear Chris,

The CA&ES Undergraduate Program Review Committee reviewed six programs in the fall of 2012: Textiles and Clothing (TXC), Fiber and Polymer Science (FPC), Food Science (FST), Viticulture and Enology (VEN), Nutrition Science (NUT), and Clinical Nutrition (CNU). The reports and program responses for TXC and FPC were previously sent to the Executive Committee as per the expedited review process. Enclosed are the full reports and program responses for the other four programs (the VEN review will arrive to you within a week under this same cover letter).

During our reviews, two common themes emerged that we think should be specifically emphasized and addressed:

- (1) Concerns with advising were noted in all six program reviews. While advising concerns were somewhat different among the six programs, concerns were raised at all levels from peer advising to staff and faculty advising. In general, the majors reviewed in 2012 serve large student populations and staff advisors are serving >400 students per advisor. The recent administrative clustering has increased advising workloads in many cases, has resulted in staff advisors advising very disparate programs, and has resulted in staff advisors having offices, files, and computer resources split among multiple office areas. In some cases programs have no peer advisors. When programs have peer advisors, training is inconsistent. Finally, students are not routinely meeting with faculty in their capacity as advisors. Most programs do not have mechanisms to involve faculty in the advising process for signing off on planned coursework and providing guidance on internships, jobs, and graduate school preparation.

UPRC notes that concerns with advising within programs in the college have been previously noted by the Senate Committee on Undergraduate Instruction and Program Review (March 2005), by the CA&ES UPRC (letter to Executive Committee dated February 11, 2011), and by the CA&ES *ad hoc* Curriculum Review Committee (May 2012).

The UPRC strongly urges the college to develop best practices for advising at the program level. This could include (1) setting guidelines for the maximum

number of student advisees per staff advisor (this number would also be dependent on the number of disparate programs the advisor is responsible for);

(2) encouraging continuous professional development for staff advisors including training in interpersonal relationships, procedures for developing advising practices for undergraduate students, etc.; (3) encouraging membership and participation in professional societies for staff advisors (e.g., The National Academic Advising Association, <http://www.nacada.ksu.edu>); (4) restoring resources for peer advisors at the program level, along with appropriate training; (5) developing mechanisms to involve faculty in undergraduate advising at the program level; and (6) improving computer and/or web-based resources for students, staff, and faculty to assist students in planning their academic coursework.

We note that similar recommendations were made by the CA&ES *ad hoc* Curriculum Review Committee in their report dated May 2012. The UPRC strongly feels that the college can no longer ignore the serious concerns with advising that have been raised in our college for over many years and recommends this be a priority for the college in the coming year.

- (2) UPRC notes that a lack of adequate facilities, resources and teaching assistant support are of increasing concern and were noted by all programs reviewed this year. In the TXC and FPS reports we previously noted concerns associated with laboratory space for these programs. Each of the other programs reviewed in 2012 also note concerns with access to appropriate laboratory and lecture spaces for their classes, limitations to resources to maintain equipment and supplies for teaching laboratories, and continuous and detrimental cuts to teaching assistant support. Overall, programs are increasingly stretched to offer high quality experiential learning opportunities. All programs state that they do not want to limit access and they strive to maximize the laboratory-based learning opportunities, however, most programs and individual faculty feel they are reaching the limit to the cuts that they can absorb without having significant impacts on access and quality. As we noted previously in the cover letter to the TXC and FPS reports, the projected increases in student enrollments associated with Chancellor Katehi's 2020 Initiative, limitations in laboratory facilities and resources are expected to increase significantly. The UPRC strongly urges CA&ES to develop a college-wide plan to address these needs. This will require significant fiscal investment; however, by leveraging the facilities across multiple majors, the quality of numerous programs can be directly improved.

We understand that the college currently faces many challenges. However, the UPRC strong feels that these challenges offer opportunities to improve, and ideally enhance, the opportunities that we provide to our students. Undergraduate education is critical to our mission and we urge the Executive Committee to address the advising concerns that have been repeatedly raised over many years. We also urge the College to

Chris Calvert  
February 4, 2013  
Page 3

strategically plan for the facility, financial, and teaching assistant needs that will be required to maintain and grow our undergraduate teaching programs.

Thank you for your consideration of these matters. I am happy to further discuss these concerns with you as appropriate.

Sincerely,



Susan E. Ebeler  
Chair, CA&ES Undergraduate Program Review Committee  
Professor, Viticulture and Enology

/bn

cc: Undergraduate Program Review Committee -  
Kent Bradford, professor, Plant Sciences  
Raymond Chan, undergraduate student representative  
Abhaya Dandekar, professor, Plant Sciences  
Jan Dvorak, professor, Plant Sciences  
Albert Fischer, professor, Plant Sciences  
Dan Kliebenstein, associate professor, Plant Sciences  
Deanne Meyer, specialist, Animal Science  
Alyson Mitchell, professor, Food Science and Technology  
Peter Robinson, specialist, Animal Science  
Diane Ullman, ex officio, associate dean, CA&ES Dean's Office  
Jennifer Wienecke-Friedman, undergraduate student representative  
Jeffrey Williams, professor, Agricultural and Resource Economics  
Matt Wood, associate professor, Environmental Toxicology

## Benefits of Using the Mixed-Competencies and Developmentally Tiered Approach

- Aligns the vision for advising with core teaching and learning objectives – student development and skill acquisition are priorities
- Advising focus is on developing the *whole* student – curricular and co-curricular objectives merge - reduces siloing
- Clearly describes what students gain from advising
- Promises greater coordination and integration of faculty and staff advising
- Outcomes are tailored to student level and acknowledge stages of learning
- Students, advisors and faculty have clear framework for assessing progress in multiple-skill areas over the entire academic cycle
- Clearly demonstrates the value of advising to the student, faculty and the institution
- Facilitates assessment and evaluation

## Uses of the Mixed-Competencies and Developmentally Tiered Approach

- **Planning** – Helps determine macro-level priorities, program development strategies, resource distribution strategies, etc.
- **Training** – Helps direct advisor training and cross-training – these are more deeply rooted in student development theory, and are supported by faculty developed curricular and disciplinary outcomes
- **Evaluation and Assessment** – Gaps and overlaps in service are easily identified, and clarify the shared and distinct roles of advisors
- **Integration Strategies** – Creates new opportunities for faculty involvement

## Applying the Mixed-Competencies and Developmentally Tiered Approach to Your Campus

- Identify core competencies that reflect your institutional priorities
- Local goals will flow from and enhance macro-level priorities
- Start Small – There is no need to identify all competencies - Broad goals effectively organize programs and services
- Reference Formal Assessment Guides and Resources – Developing learning outcomes is one step in a full assessment plan
- Reference professional standards and resources

National Academic Advising Association (NACDA)  
<http://www.nacada.ksu.edu/Resources/Clearinghouse/View-Articles/Assessment-of-academic-advising.aspx>  
Council for the Advancement of Standards in Higher Education  
<http://www.cas.edu/>

## The Mixed-Competencies Approach in Action: A Sample Advising Curriculum for First Year Students

### First Year Experience (*Sample Workshops and Resources*)

#### Competency: Navigating the Institution

- Institutional Nuts & Bolts: How to calculate GPA, What is P/NP, How and when to file petitions, where is my relevant policy manual?
- Short-term Scheduling Strategies – Balancing University Requirements with Curricular Exploration

#### Competency: Building Core Academic Skills

- Time Management: Tips and Strategies for First-year Students
- What is noteworthy? How to Take Great Notes
- Mid-term and Final- Is That All? Transitioning to the World of New Academic Standards
- Making the Most of Your Liberal Arts Breadth Requirements: Turning Your Checklist of Requirements into Curricular Opportunities

#### Competency: Building Disciplinary Based Skills (*Developed with faculty*)

- Afraid of Office Hours? How to Make the Most of this Valuable Resource
- Understanding Lower Division Pre-requisites: Purposes, Goals, Value

#### Competency: Health and Wellbeing

- Hey Sleepy Head! Go to Bed! The Impact of Sleep Deprivation on Academic Performance
- Party-Party-Party: How Much is Too Much
- Campus Safety Programs: Be Aware! Be Ready!

#### Competency: Social, Interpersonal and Cultural Skills

- You're One of Us: Becoming Part of the University Community
- How Am I Going to Tell My Parents?: Tips for Talking to your Parents about Mid-terms, Grades, Your Choice of Major, and Other Tough Subjects
- Like Me? Not like Me?: How Stereotype Threat Can Affect Academic Performance

#### Competency: Leadership (*Developed with professional school faculty*)

- Developing Your Leadership Potential: Understanding the Roles of Individual Contributor, Team Member, Team Leader and Manager

#### Competency: Career and Advanced Study Skills (*Developed with Alumni*)

- Myth and Reality: Is Choosing a Major Choosing a Career?
- Assessment Tools: Matching Your Interests and Goals with Employment Sectors

## Appendix G - 1 Tiered Model Map

## Developing Learning Outcomes for Undergraduate Advising: A Mixed-Competencies and Developmentally Tiered Approach

*Recent shifts in the higher education landscape have placed new emphasis on the competencies of graduates and the value of a college degree. As new standards are developed for evaluating educational effectiveness, advisors now face the challenge of better articulating what students gain from advising. Berkeley has developed a unique macro-level conceptual framework to guide the development of local learning outcomes for undergraduate advising using a unique mixed-competencies and developmentally tiered approach based on classic works in student development.*

*This approach better defines and integrates the goals and objectives of curricular and co-curricular advising, offers new ways to align faculty and staff advising, creates cohesion between seemingly disparate programs and services, and aligns advising with the core teaching and learning activities of the institution. In addition, the students' understanding of what can be gained from advising is enhanced and their ability to chart their own progress is improved. Using this framework, the shared purposes, roles and responsibilities of advising become more apparent and the capacity to design and evaluate programs according to a set of integrated and well-defined objectives is enhanced.*



UC Berkeley Operational Excellence <http://oe.berkeley.edu/>

UC Berkeley Advising Council  
<http://oe.berkeley.edu/projects/student/AdvisingCouncil.shtml>

UC Berkeley Office of Planning and Analysis <http://opa.berkeley.edu/>

Elizabeth Wilcox, Institutional Research Analyst [ewilcox@berkeley.edu](mailto:ewilcox@berkeley.edu)

Developing Learning Outcomes for Undergraduate Advising: A Mixed-Competencies and Developmentally Tiered Approach							
Core Competencies - Psychosocial and Cognitive-Structural							
Practical Competencies		Curricular Competencies		Co-curricular Competencies			
Student Learning Goals Developmentally Tiered	Navigating the Institution	Core Academic Competencies	Disciplinary Based Competencies	Health and Wellbeing	Social, Interpersonal and Cultural Competencies	Leadership Development	Advanced Study and Career Competencies
	All units	College Advising/Student Learning Center	Major Advising/Student Learning Center	University Health Services/Student Affairs - Residential Life/Recreational Sports Facility (wellness programs)	Equity and Inclusion Programs/Student Affairs/Berkeley International Office	Student Affairs	Student Affairs/Career Center
<b>First-Year Experience</b>	<b>Initial (Unconscious Incompetence)</b>			<b>Awareness, Discovery, Self-Assessment</b>			
CalSo (Res Life Programs), My Years@ Cal, Letters & Science 1 and Discovery Courses, SLIC-Study Strategies, Tang Center Programs, Career Center - Know Yourself	<b>Short-Term-Planning:</b> Student engages in effective short term schedule planning - selects courses appropriate to skill level and interest (balances major and prerequisite requirements). Student understands relevant policy, structure of degree requirements, effectively utilizes student systems. Student understands conduct expectations. Student can identify and connect with appropriate campus personnel and resources. Student is introduced to portfolio management strategies.	<b>General Skill Building:</b> Student is developing study skills, time management strategies, learning how to approach faculty, take notes, prep for exams and other basic study skills. Student is connecting with resources to develop critical thinking, reading, writing, technical, analytical, or other core academic skills. Student is matching core academic skills with appropriate majors. Student grasps the purpose of breadth and University requirements (i.e., liberal arts core). Student has accessed resources that ensure compliance with established standards of academic integrity (cheating, plagiarism, honor codes etc.). Student is formally introduced to resources at the University Library.	<b>Disciplinary Skill Building:</b> Student understands the differences and similarities between disciplinary approaches. Understands the discipline specific skills needed to meet their curricular goals (for example, they understand the intention of pre-requisite requirements (lab and technical skills, quantitative ability, writing and analysis of text, etc.)	<b>Personal Responsibility:</b> Student assumes responsibility for multiple dimensions of self-care (physical, emotional, spiritual, interpersonal, social and intellectual). Student understands the relationship between health and academic performance and makes choices consistent with optimal performance. Student is aware of resources for health and safety related issues (i.e., physical health, mental health, sexual health, alcohol and drug education, violence prevention, etc.)	<b>Awareness:</b> Student is actively developing a social network, support system, exploring identity (e.g. race, ethnicity, religion, sexual orientation, social class). Student manages changing family relationships and is building a sense of institutional belonging, responsibility and commitment. Student is learning to balance their needs with the needs of others and create mutual respect. Student is aware of own beliefs, attitudes and reactions to others who are different. (For special student populations like international students this phase may include cultural adaptation, adjustment and management of "culture shock.") For underrepresented students this phase may include management of identity in relation to "stereotype threat."	<b>Participate:</b> Focus is on development of individual skills and leadership capacities- problem solving, communication, facilitation, ability to accept feedback and guidance and build confidence. Student explores opportunities for participation in organized activities and projects. Student begins to form a personal definition of leadership and service.	<b>Explore:</b> Student begins to gather information on career and graduate school options. Student understands connections between curriculum and career options (and myths). Student engages in self-assessment (skills, interests, abilities, personality, etc.) and self-discovery activities. Student is introduced to a range of relevant core professional skills (verbal, written, teamwork, analytical, technical, interpersonal, computing, planning, global and intercultural awareness and the range of desirable personal characteristics such as flexibility, persistence, creativity, integrity, professionalism, etc.) and may develop a plan to gain these skills through experience. Student may access resource guides for preparing for graduate school.
<b>Second- Year (Transition to Major)</b>	<b>Emerging (Conscious Incompetence)</b>			<b>Comparison, Exploration, Planning</b>			
My Years@ Cal, L&S Major Explorations Resources - Major Madness, Peer Advising Programs, LEAD, Scholarship Connection, Fitness and Wellness Programs	<b>Mid-and Long-Range-Planning and Goal Setting:</b> Student is applying information (policy, procedure, requirements) to their unique interests, abilities and goals. Students are able to develop short and long term (personalized) academic plans which incorporate multiple interests and complex goals. Student understands the role of advising and is making contact with services that meet their unique needs and interests (they may be developing relationships with mentors). Student assumes full responsibility for enrollment and administrative matters and can access and apply policy as is relevant to their individual needs. Student may begin to manage a student portfolio as evidence of accomplishment and learning.	<b>Effective Appraisal:</b> Student understands their skills, abilities, talents and incorporates feedback on their performance into academic planning and goal setting. Based on realistic skill appraisal, student has narrowed their list of possible majors. Student continues to build skills related to academic integrity (evaluating source integrity, citation reference, etc.)	<b>Disciplinary Appraisal:</b> Student has developed a positive academic identity and student intellectually identifies with and aligns oneself with a major and disciplinary framework. Student actively builds skills in relation to that framework.	<b>Personal Practice:</b> Student demonstrates the ability to identify and practice health enhancing behaviors (may have established health related goals, identified behaviors and or issues related to overall wellbeing and personal development (for example, stress management, sleep management, a fitness or nutritional goal etc.). Student can access and use information from a variety of recognized sources in support of individual development.	<b>Attitude:</b> Student is aware of and open to multiple perspectives and demonstrates respect for different views. Student begins to focus campus affiliations in ways that enhance identity. Student embraces multiple identities within different social contexts and power structures. Student is aware of cultural bias and beliefs. Student's attitude may begin to shift as they examine their own beliefs and values about cultural differences.	<b>Affiliate/Join:</b> Focus is on team performance. Student affiliates with or joins a group/organization/program or project that reflects their own values and interests. Student is able to work within and adapt to a team/group culture and interact successfully with a variety of personalities. Can agree to disagree. Projects are goal driven. Student makes a commitment to group - produces as a member of a team. Student may engage in formal leadership development opportunities.	<b>Experience:</b> Student engages in activities that help gain experience and knowledge about their career and or graduate school interests - actively investigates career and graduate school options. (Student understands that skill acquisition is more relevant than major choice to career and graduate school aspirations.) Student may begin to investigate employment sectors.
<b>Upper Division</b>	<b>Developed (Conscious Competence)</b>			<b>Involvement, Application, Decision Making</b>			
My Years@Cal, Undergraduate Research Apprenticeship Program, Campus Life and Leadership Programs (Cal Corps, Cal in the Capital, AmeriCorps, Greening Berkeley Initiative, VITA, etc.)	<b>Plan in Action:</b> Student has developed a realistic and meaningful educational plan (based on comparative exploration and individual performance). Student actively tracks own progress toward degree. Students is using portfolio to develop plans and modify goals.	<b>Curricular Focus:</b> Curricular choices are refined and realistic and aligned with academic performance (student is ready to or has declared an appropriate major). Student has greater interaction with faculty toward goals and direction. Student regularly references and adheres to standards of academic integrity on projects of increasing complexity.	<b>Major and Field Specific Focus:</b> Student has accessed and understands their departmentally based learning goals (has accessed faculty produced curriculum maps). Student has greater interaction with faculty in self-assessment, goal setting and academic direction.	<b>Responsibility to self and others:</b> Student demonstrates the ability to set goals and make decisions which address health related issues. Student may make connections between personal and community health and wellness programs, or engage in or promote community health and wellness related projects (CPR, First Aid, Lifeguard, Red Cross or other public health related training).	<b>Knowledge:</b> Student is engaged with others/programs/projects/organizations that support/test/refine emerging adult identity. Student actively contributes to campus community and successfully communicates across differences. Student seeks to expand intercultural experiences. Student has knowledge and familiarity with selected cultural characteristics, history, values, belief systems, and behaviors of the members of another ethnic group (Adams, 1995).	<b>Contribute:</b> The variety of team roles and responsibilities is expanded and/or student contributes to larger or more complex teams on more challenging projects. Student incorporates feedback from others in problem solving and decision making. Works comfortably with paradox and contradiction. May develop expertise in a functional area. Student demonstrates an ability to innovate. Commitments extend from group to community/organization.	<b>Prepare:</b> Student is reflecting on their interests and experiences and beginning to prepare for and commit to a post-baccalaureate plan. Student may have begun test prep, resume building, interview skills, etc. Student may begin to develop mentoring and other relationships (through internships and alumni interactions, for example) which will help guide planning and skill building.
<b>Upper Division (Advanced)</b>	<b>Highly Developed (Unconscious Competence)</b>			<b>Creation, Commitment, Integration</b>			
My Years@ Cal, DeCal, Big Ideas	<b>Full Implementation:</b> Student has fully implemented a complex educational plan, verifies completion of requirements through degree check and sets viable completion date. Student portfolio may be highly developed and document progress in specific skill areas, courses, etc.	<b>Synthesis:</b> Student is involved in projects that emphasize academic synthesis, interdisciplinarity, or other advanced skills. Student regularly references and adheres to standards of academic integrity.	<b>Synthesis:</b> Student has engaged in a project or course which is integrative and highly creative, requiring academic synthesis. For example, student has exhibited or performed a creative work, completed a thesis, contributed to a student journal, taught others through peer programs, participated in a case competition, contributed to a faculty research project, etc. - student has demonstrated advanced disciplinary specific skills - technical, scientific, creative, analytical, written or oral, or team/group based.	<b>Life-Long Responsibility and Practice:</b> Student understands the relationship between healthy behaviors, development and quality of life across all life stages. Student may be involved in programs that promote and or advocate personal, community, international health.	<b>Skills:</b> Student manages mature relationships, has established identity, purpose and integrity. Student has ability to effectively operate in different cultural contexts.	<b>Manage:</b> Student is actively engaged in a complex leadership role within an organization and demonstrates the ability to both innovate and transform. Projects have greater positive impact. Student may become trusted thought leader or advisor to others. Student manages complex groups/projects and is able to successfully manage conflict while remaining inclusive. Student understands their real and potential impact on community/nation/world and has made a commitment to on-going active citizenship.	<b>Transition:</b> Student has a well developed career concept, pre-professional or pre-graduate plan in place and is taking steps to transition. Is actively taking steps to implement this plan (for example, has completed a resume and is engaging in on-campus interviews).
	Curricular and co-curricular objectives are viewed as intertwined and highly related - this better integrates and defines service at each developmental phase. Gaps in service become more pronounced.	<b>Program and Services are guided by faculty. Opportunities exist for greater involvement of faculty in major and curricular mapping.</b>					This is a multi-year emphasis, not just on employment but also on graduate school preparation.

**References**

Council for the Advancement of Standards in Higher Education (CAS). (2005) CAS Standards and Guidelines. NACADA (2005). NACADA statement of core values of academic advising. The Mentor: Penn State Division of Undergraduate Studies, A Visual Model of Academic Advising (Smothers) Arthur Chickering, The Seven Vectors: Theory of Identity Development Kelly and Sauter, 2007: Student Development Theory Chart Noel Burch, Four Stages of Competence - "conscious competence" learning model Benjamin Bloom, Bloom's Taxonomy

UC Berkeley Wellness Letter UC Berkeley Recreational Sports - Wellness Wheel

UC Berkeley, Student Development -Learning Outcomes - 2012 UC Berkeley Dean of Students, Annual Report 2010-11 Berkeley International Office

HBR: Seven Transformations of Leadership (Rooke,Torbert 2005)

Mary L. Connerley, Developing Awareness, Knowledge, and Skills - Paul B. Pedersen The Multidimensional Model for Developing Cultural Competence (2005) Georgetown University: National Center for Cultural Competence (Advocacy Unlimited-Developing Cultural Competency) Journal of College Student Development:Identity Development Theories in Student Affairs (Torres, Jones, Renn 2009) Journal of College Student Development: Understanding the Development of the Whole Person (2009)

UC Berkeley Career Center Step-by-Step <http://stepbystep.berkeley.edu/>

CATEGORIES	category#	# of hits	ranking
college/Dept commitment and communication	3	6	1
good staff	1	5	2
good faculty/some good faculty	2	3	3
quality advising	4	2	4
peer advising	5	2	5
good resources plus CDG	6	2	6
alumni	7	1	7

**DETAIL**

	category	
good staff	1	Advising staff who are motivated and want to help students
	1	1. Dedicated staff advisors
	1	1. I am friendly, caring and happy to help students-Happy to come to work every day, knowing that I can help students, make difference in their life and help them to succeed. -I assist students in identifying realistic academic goals based on grades and sel
	1	1. College has good staff people in DO advising,
	1	3. We enjoy helping students meet their goals by guiding and assisting them develop balanced study plans.
good faculty/some good faculty	2	1. dedicated faculty
	2	2. In some departments, dedicated faculty advisors
	2	2. In some departments, dedicated faculty advisors
	2	a reasonable proportion of faculty are committed to advising (vs. across campus)

DETAIL		
college/Dept commitment and communication and process	category 3 3 3 3 3 3	3. Good communication between department staff advisors and Dean's Office advising unit 4. Standardized system for responding to students after they are in academic difficulty 1. Once students do cross our advising threshold, they receive good advice at the Depts. & Dean's Office. 2. Communication between Depts. & Dean's Office flows openly, and we share common goals. College has continued commitment to advising and its students 2. Good/open communications with both the advisers in the Dean's Office and other departments.
quality advising	4 4	1. Students in the best run majors are connected with faculty, staff and peer advisers, providing personalized advising. 1. Staff advisers and faculty advisers are student advocates and knowledgeable with many years of experience about major requirements and policies.
peer advising	5 5	Centralized shared peer model has allowed for more standardized and quality training of peers. While this needs further development it is progress. Our peer advisers are enthusiastic, resourceful, and enthusiastic.
good resources plus CDG	6 6	2. A diversity of resources is available. Computer resources like students.ucdavis.edu website and graduation check work well. (I'm struggling to come up with more.) The Career Discovery Group has established a track record of giving students a small group experience, introducing mentors, and exposing them to research.
alumni	7	5) Our alumni is enthusiastic and participate yearly in our Student-Alumni Career Day.

CATEGORIES	category#	# hits	ranking
fragmented dysfunctional	7	6	1
faculty disengaged, not advising	1	4	2
lack of careers for staff, HR issues, inequities	2	4	3
too many advisees	4	4	4
unclear info for students	6	4	5
lack of training in advising	8	4	6
lack of resources	5	2	7
not recognized in merit promo system	10	2	8
lack of policy procedures training for staff (Dept, College, both)	3	1	9
not mandatory	9	1	10

DETAIL		
	category	
faculty disengaged, not advising	1	3. Faculty are frequently not engaged.
	1	4. Faculty not doing advising
	1	6. Faculty advising is patchy in availability and quality.
	1	2. Lack of faculty involvement in advising.
lack of careers for staff, HR issues, inequities	2	6. Lack of clear career paths for advisers.
	2	Advisors are classified as <i>_Asst</i> at different levels. Classifications need to be standardized into the SAO series and training, education and development can be properly provided.



DETAIL		
	2	2. Inequities between job classification for advisors.
	2	Classification inequities among advisors.
lack of policy procedures training for staff (Dept, College)	3	5. No clear instructions for advisors.
too many advisees	4	4. Disparity in the number of students and majors (and other requirements) means some staff advisers are greatly overworked and cannot give students what they need.
	4	2. Advisors assigned too many students
	4	1. cannot see every student-sometimes when I try to get to the root of the problem it takes more time than the standard length of an appointment 2. It is challenging for me to have appointments all day long (12 students or more). It takes effort to concentrate
	4	1. Staff to student ratio is large. We have 1.75 staff for 952 students in the major. This makes it challenging for us to serve our population.
lack of resources	5	3. Budget cuts and clustering has resulted in advisors with multiple offices, multiple programs, and limited resources to do their job
	5	3. Lack of tools that could make our job easier (e.g. scanner).
unclear info for students	6	2. Resources available to students are not apparent.
	6	Students not given sufficient/appropriate resources to initiate their own academic planning

DETAIL		
	6	4. Students are frequently confused about where to go to get advising and when they go to multiple places they get confusing and conflicting advice
	6	1. Students are confused about the differences between advising with Student Affairs units, Depts. & Dean's Office. We need clearer, defined roles.
fragmented dysfunctional	7	1. It is a fragmented system without connections of different advising units.
	7	1. Poor coordination of academic advising goals across college (and campus)
	7	1. Too decentralized without clear accountability
	7	2. Dean's Office has no authority or engagement in the hiring and supervision of staff advisors
	7	3. Lack of a central office for oversight and dissemination of policy.
	7	1. lack of congruity between DO, Depts, advising staff, faculty etc
lack of training in advising	8	5. Staff advisors not trained to provide professional advising services; limited professional development/continuing education opportunities for staff Poor campus integration of course offerings to know what courses offered each quarter; advisors need this information to be able to advise students on available courses

DETAIL		
	8	3. Supervisors of department advising seldom have any professional preparation for understanding advising issues or best practices.
	8	7. There is no training or professional development for staff and faculty advisors and only limited training for peer advisors.
	8	Lack of consistent & ongoing training for peers, staff, and faculty in advising.
not mandatory	9	Advising is not mandatory.
not recognized in merit promo system	10	Master advisor responsibilities often not considered and/or utilized by department chairs and/or department faculty
	10	5. There are essentially no Academic Senate guidelines or policies for faculty advisors, nor are there any incentives in the merit and promotion process

	category	# hits	rank
develop, use tools and resources in college and campus	2	5	1
peer, staff and faculty professional development and wellbeing	3	5	2
improve quality of advising	5	4	3
expectations, principles, philosophy docs	1	3	4
monitor, track students, improve outcomes and out into careers	6	3	5
improve organization, structure, oversight	4	2	6
advertising etc leading to more students	7	1	7

**DETAIL**

	category	
expectations, principles, philosophy docs, lead campus and others	1	1. Create a document with student and adviser expectations, principles and philosophy.
	1	College becomes model for campus on how to deliver academic advising services to students
	1	1. Continue developing network with advisors from different colleges at the University, community colleges and schools.
develop, use tools and resources in college and campus	2	2. Create classes to ensure students are introduced to advising and resources available.
	2	3. Use an improved computer portal to keep track of information and communications with different advising groups to students.

DETAIL		
	category	
	2	Use same system to track that students are making progress and studying appropriate courses.
	2	Fully participate and provide guidance to the development of the Student Portal and the Student Advising Portal.
	2	Utilize new adviser's tools (e.g. portal, forms online, calendar, etc.)
peer, staff and faculty professional development and wellbeing	3	3. Provide professional development and incentives to galvanize faculty advising in the college.
	3	3. Utilize peer advisors and make sure they are efficient
	3	create happier employees
	3	1. Continue and renew development in advising (e.g. staff development classes and conferences).
	3	3. Continue to properly train peers so they are knowledgeable and efficient.
improve organization, structure, oversight	4	1. Reorganize the advising structure to provide oversight, accountability, professional development,
	4	2. Develop an advising structure that is proactive rather than reactive.
improve quality of advising	5	4. Provide high quality student centric advising that engages the student in taking responsibility for their progress.
	5	1. Students see the benefits of mandatory advising (2012 UCUES.)
	5	2. The larger influx of admitted Natl/Intl. students is based on a 5 yr. fiscal retention model which could translate to support for more front-end advising.
	5	benefit students, make teaching easier, make for better students and grads

DETAIL		
	category	
monitor, track students, improve outcomes and out into careers	6	Students want to see majors correlated to jobs and the learning outcomes required by WASC has started the process.
	6	reduce time to graduation- improve alumni satisfaction
	6	2. See, track, follow-through with students.
advertising etc leading to more students	7	2. Advertising majors and recruiting more students.

	category	#hits	rank
staff overload	1	5	1
lack of campus guidance, policy, philosophy	2	5	2
less budget, reduced training opps	4	3	3
student dissatisfaction, underperformance etc	6	3	4
staff vs faculty vs campus vs college (cobweb)	5	2	5
confidentiality issues	3	1	6

**DETAIL**

	Category	
student dissatisfaction, underperformance etc	6	1. Students waste time and opportunities by not taking the relevant courses when they are offered.
	6	2. Students cannot get the help they need.
	6	1. Student satisfaction with their UG experience decreases
lack of campus guidance, policy, philosophy	2	Not taking the current opportunity to examine and revise advising in CA&ES and to gain resources to do so.
	2	1. Budgets campus strategies or lack of - advising at UCD is a cobweb, and any effort we make to be clear and defined may get tangled
	2	Dept ownership, faculty pushback on advising etc, senate etc
	2	1. Two different Depts. (Student Affairs & a new one) created to oversee advising could mean lack of communication and different priorities.
	2	1. Faculty disengagement because advising is not rewarded or even respected in the merit and promotion process.

DETAIL		
	Category	
staff vs faculty vs campus vs college (cobweb)	5	3. Position descriptions with many administrative tasks instead of a primary focus on advising.
	5	3. The challenges advisors see are not the same ones even addressed by the BRC so their concerns might get drowned out by faculty concerns.
less budget, reduced training opps	4	Risk of budget cuts and not having continued resources--need to create a system with clear priorities.
	4	1. Lack or reduced funding available for staff development opportunities or tools needed for staff advisers.
	4	2. Timeliness and relevance regarding classes for advisers.
confidentiality issues	3	3. Information about students can be sensitive and needs to have appropriate protection in online systems.
staff overload	1	Limited ability to deal with growing number of students in college as campus grows
	1	2. Staff overload because of high student/advisor ratios.
	1	2. Mandates that are handed down (i.e. mandatory advising) without the allocations for increased staff just increasing workload.
	1	4. Currently resources like Student Disability Center, CAPS/CAN, Student Academic Success Center, and some of our remedial classes are operating at near capacity/overload resulting in discouraged students and advising staff who can't assist them in a timely manner.
	1	3. Mandatory advising = increased workloads



Recognizing that the Undergraduate Council of the Academic Senate (Davis Division) will consider support and recognition of Master Advisors in 2013-14 we wanted to express the committee's thoughts on this issue.

If a Master Advisor is fully doing their job then it is a substantial commitment. Currently the rewards for doing this are entirely at the level of the department and include funds for general use by the faculty member and reduction of other teaching duties, or equivalently, counting advising as equivalent to a half of a course or similar. There is substantial variation among departments (and likely among colleges). For merits and promotions advising activities are barely considered. Consequently Master Advisors receive no feedback on their activities and there is no clear accountability for their role. If the major is large the activities of a Master Advisor may be equivalent to that of a graduate group chair, which are more formally compensated.

Duties of Master Advisors:

- \*Meeting with students to discuss courses, academic matters (e.g. track choices), internships, careers and graduate school.
- \*Answering student's email enquiries.
- \*Office hours for students.
- \*Regular consultation with and some supervision of Staff (and Peer) Advisors over individual student needs (e.g. classes not available, oversubscribed classes, internships).
- Consultation with Staff Advisors on organizational matters for the major and provision of information to students.
- \*Consultation with track advisors and other faculty involved in the major.
- Updating the major and ICMS class listings for the major (in consultation with other faculty). This also includes catalog updates.
- Attendance of Commencement and often heading up a departmental reception or celebration for parents.
- Organization of outreach and publicity for the major, in collaboration with staff.
- Degree certification—mostly conducted by Staff Advisors.
- 7-year reviews of major.

In the above an \* indicates activities that scale with the size of the major.

Appropriate compensation needs to consider Master Advisor time but also the needs of the department in terms of other courses needing to be taught. Time spent functioning as Master Advisor (advising, administration and representation) should be budgeted for in the same way as teaching and other substantial administrative duties (e.g. graduate group chairs). A small financial incentive is given by some departments but this does little to compensate for loss of research time. As with graduate group and departmental chairs a more substantial stipend to allow the faculty member to hire assistance or otherwise support research activities is appropriate.

The faculty merit and promotion process needs to more fully recognize the advising, administration and representation roles conducted by Master Advisors. This is at the level of departments, colleges and campus-wide (including CAP). Evaluation of Master Advisors and feedback to them need to be included both in this process and as a general feedback mechanism, in much the same way as instructors receive teaching evaluations.

Awards should be formed to recognize outstanding Master Advisors at the college and senate levels. Such awards exist for teaching in general and for Staff Advisors but not Master Advisors.

**ADVISING DUTIES (MINIMUM 65%-70%)<sup>1</sup>**

Under general supervision of the CAO and Chair:

Manage/oversee the advising program and implement the department undergraduate program advising for \_\_\_\_\_ majors. Serve as a primary resource for students, staff, faculty and general public including the following:

1. Provide individual academic advising for prospective, new transfer, continuing and part-time students regarding college and university requirements; registration procedures; changes and deadlines; petition policies; career opportunities. Assess students' academic progress towards satisfying university, college, major and minor requirements.
  - a. Counsel students interested in studying abroad. Provide guidance on course selection as it pertains to the major and facilitate the process between student and faculty to evaluate courses from abroad for comparability/equivalency.
  - b. Counsel student athletes and collaborate with the Athletics Department regarding NCAA regulations and those in the Office of the University Registrar designated to verify the completion of the athlete's degree requirements.
    - i. It should be noted that advising is also done via phone and emails, not just in person. Managerial Economics has also used instant messaging and FaceBook as means to communicate with students and respond to general questions regarding the major.
2. Provide review and analysis of student's file related to admission/readmission for the program(s).
3. Serve as resource for chair, faculty, staff and students in all academic matters for completion of the undergraduate degree.
4. Interpret, analyze and implement a wide variety of Academic Senate regulations and administrative policies in evaluating student petitions (approve continuing students' applications, change of degree/ majors, minors), assessing individual academic performance and progress toward satisfaction of degree requirements; and certify and authorize degree certifications.

---

<sup>1</sup> Note: 50% advising = 20 hours per week, 55% advising = 22 hours per week, 60% advising = 24 hours per week, 65% advising = 26 hours per week, 70% advising = 28 hours per week (To include scheduled appointments, drop-in, emails, Skype and phone calls).

5. For students in academic difficulty, provide counseling and discuss problems that may underlie difficulties and propose possible solutions, including recommendations for reduced workload, PELP, withdrawal or part time status. Identify barriers for success and make appropriate referrals to campus resources.
6. Evaluate students' academic transcripts/records (in-state and out-of-state community colleges and non-UC 4-year institutions) and determine applicability of transfer courses within established guidelines and existing articulation agreements. Evaluate requests for substitutions/waivers and make recommendations to faculty. Work with Master Advisor to approve transfer credit and completion of major requirements.

**OTHER DUTIES APPROPRIATE TO STAFF ADVISING POSITIONS (30-35%)**

1. Oversee the development /maintenance of database and files for students and courses, reviewing information for accuracy and confidentiality.
2. Coordinate faculty advisor program. (In Human Ecology, we have faculty advisors assigned to each student. The advising office assigns faculty and equal distribution of students. In Managerial Economics, we have 5-7 faculty members who serve on UGCC and also have designated faculty advising hours.)
3. In collaboration with Master Advisor, monitor advising program for significant trends of effectiveness; analyze, develop and recommend short and long-term range plans of program, conduct research, provide recommendations on program modifications for majors.
4. Provide undergraduate program review support through analytical assessment of the major and coordinate accreditation if appropriate.
5. Serve on undergraduate curriculum committee, participate in decision making and implement policy/procedural changes. Serve on the instructional/annual planning committee, consult on teaching and TA needs.
6. Participate in campus wide activities which include Preview Day, Decision Days, Commencement, Departmental Awards Ceremony, recruitment and other related activities for outreach.
7. Independently identify the needs for assessing feasibility of events and resources needed; develop new events for prospective students and workshops and seminars for current students.
8. In cooperation with the Master Advisor and the Chair of the program, review, edit and proof the appropriate section of the general catalog, program handbooks and web site incorporating new courses and information.
9. Acknowledge high academic achievement of students and refer for various awards (such as Departmental Citations and Outstanding Senior Award). Determine eligibility and make recommendations for major-specific scholarships (in ARE, scholarships include DeLoach, Thor, and Co-Bank).

10. Identify students for specialized internship positions.
11. Participate in professional development.
12. Supervision/Training including:
  - Hire, train and supervise peers for advising in major requirements and implementing department policy. Collaborate with Dean's Office for the shared peers in hiring, training, and evaluation.
  - Supervise staff assigned to implement course scheduling, entering information in DESII for teaching credit, event planning, and data entry for accurate reporting in implementation of undergraduate program.

### **DUTIES TO BE SHIFTED TO ADMINISTRATIVE POSITIONS**

- Scheduling rooms for reviews, exams, TAs hours
- Course evaluations
- Ordering textbooks from publishers per instructors request, coordinating desk-copies, placing texts on reserve in library, and maintaining departmental library for TAs.
- Collecting syllabi and office hours, and posting information for student's access.
- Course scheduling and DESII data collection.
- Manage class enrollment for current and pending courses; monitor waitlists; issue PTAs.
- Event planning and coordination. (Managerial Economics offers a very specialized annual event, "Student-Alumni Career Day.")
- Collect applications, coordinate meetings for the hiring committee and assist in sending offer letters for Teaching Assistants (Graduate Program Coordinator handles this task in ARE), Associate-In Lecturers, and Unit 18 hires.
  - Collect applications for lectures, TAs, and Readers for summer sessions and coordinate with summer session office on approving offer letters for hiring.
  - Organize, plan and coordinate events for recruitment of faculty or administration positions.
- Review and provide data entry for course approval forms. [This becomes very complicated and time consuming if the Course Curriculum Committee returns the course multiple times for clarification or revision and the advisor is expected to monitor, remind and do the data entry for the submitting Professor.]
- Participate on various interview committees in different departments.

Faculty Member's Name

Is this your assigned faculty advisor? (yes or no—if no who is your assigned faculty advisor?)

Your class year (1= first, 2= second, etc.)

For the following questions please rate using this scale:

5 = almost always, 4 = frequently, 3 = sometimes, 2 = seldom, 1 = never

Did you use the advising system in the past year?

Did you prepare in advance for the meeting with your faculty advisor?

Does your faculty advisor show you respect and concern?

Does your faculty advisor know the college requirements?

Does your faculty advisor know the major's requirements?

Does your faculty advisor know career opportunities?

Does your faculty advisor know and recommend campus services that maybe helpful for you?

Does your faculty advisor know policy and procedures?

Would you or would you not recommend other students to seek advice from this faculty advisor?

Is your faculty advisor accessible?

What is your overall rating of your faculty advising experience?  
(5 = excellent, 4 = very good, 3 = average, 2 = fair, 1 = miserable)