

UNIVERSITY OF COLORADO AT BOULDER



2010

Review and Planning Proceedings

Applied Math

Astrophysics and Planetary Sciences

Atmospheric and Oceanic Sciences

Chemistry and Biochemistry

Cooperative Institute for Research in Earth Sciences

JILA

Mathematics

Physics

November 18, 2009

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ACADEMIC REVIEW and PLANNING ADVISORY COMMITTEE

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Robert Spencer, Professor, Dept. of Psychology

Tin Tin Su, Associate Professor, Dept. of Molecular, Cellular & Developmental Biology

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Patricia Rankin, Associate Vice Chancellor, Diversity, Equity, & Community Engagement

Staff

Andre Grothe, Assistant to the Associate Vice Chancellor, Office of Faculty Affairs

INTERNAL REVIEWERS

Applied Math

JoAnn Silverstein, Professor, Dept. of Civil, Environmental & Architectural Eng.
Brian Argrow, Professor, Dept. of Aerospace Engineering Sciences

Astrophysics and Planetary Sciences

Dan Scheeres, Professor, Dept. of Aerospace Engineering Sciences
Tom Zeiler, Professor, Dept. of History

ATOC

Shelly Miller, Associate Professor, Dept. of Mechanical Engineering
Henry Tufo, Associate Professor, Dept. of Computer Science

Chemistry and Biochemistry

Frank Barnes, Distinguished Professor, Dept. of Electrical & Computer Eng.
Chris Bowman, Professor, Dept. of Chemical & Biological Engineering

CIRES

Shemin Ge, Professor, Dept. of Geological Sciences
John Pitlick, Professor, Dept. of Geography

JILA

Barbara Deming-Adams, Professor, Dept. of Ecology & Evolutionary Biology
Bradley Olwin, Professor, Dept. of Molecular, Cellular & Developmental Biology

Mathematics

Lew Harvey, Professor, Dept. of Psychology
Richard Byrd, Professor, Dept. of Computer Science

Physics

Ken Howe, Professor, School of Education
Clayton Lewis, Professor, Dept. of Computer Science

UNIT EXTERNAL REVIEWERS

Applied Math - *visit scheduled March 31, April 1 & 2*

Charlie Doering, University of Michigan, Professor of Mathematics
George Papanicolaou, Stanford University, Professor of Mathematics

Astrophysics and Planetary Sciences – *March 8, 9, and 10*

Douglas Richstone, University of Michigan, Professor of Astronomy
Paul Schechter, Massachusetts Institute of Technology, Professor of Astrophysics
Roger Yelle, University of Arizona, Professor of Planetary Science

ATOC - *March 31, April 1 & 2*

Steve Ackerman, U. of Wisconsin, Professor of Atmospheric & Oceanic Sciences
Bill Brune, Pennsylvania State University, Professor of Meteorology

Chemistry and Biochemistry – *February 22, 23, and 24*

Neal Armstrong, University of Arizona, Professor of Chemistry & Optical Sciences
Kirk Shanze, University of Florida, Professor of Chemistry

CIRES - *March 31, April 1 & 2*

Donald Cline, Director, National Operational Hydrologic Remote Sensing Center
Jean-Bernard Minster, Scripps Institute of Oceanography, Professor of Geophysics
Sorosh Sorooshian, U. of California, Irvine, Professor of Civil & Env. Engineering
Paul Ziemann, U. of California, Riverside, Professor of Atmospheric Chemistry

JILA – *March 8, 9, and 10*

Pierre Meystre, University of Arizona, Professor of Physics
John Moreland, NIST Electromagnetics Division
Nate Newbury, NIST Optoelectronics Division
Thomas Soifer, California Institute of Technology, Professor of Physics

Mathematics – *March 10, 11, and 12*

Roger Howe, Yale University, Professor of Mathematics
Sylvia Wiegand, University of Nebraska, Professor of Mathematics

Physics – *March 8, 9, and 10*

David Cassel, Cornell University, Professor of Physics
Cynthia Cattell, University of Minnesota, Professor of Physics
David Weitz, Harvard University, Professor of Physics and Applied Physics

TIMELINE OF PROCEEDINGS

September 1, 2009
Fall Forum Agenda Announced

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September 18, 2009
Fall Academic Forum, Glen Miller West Ballroom, 12 – 5pm

October 10, 2009
Review and Planning Questions Finalized

December 18, 2009
Unit responses to review and planning questions due

January – February 2010
Internal Review Process

February – March 2010
Unit-level External Reviews

April 2010
Division-wide External Review

September – November 2010
ARPAC Convenes

INTRODUCTION

Reviews provide a context for bringing people together to think strategically. The careful preparation and checking that reviews require also honors the university's public commitment to promote accountability. In 2007, a faculty taskforce was convened to study ways to improve this work. The existing procedures, they found, often failed to give participants a clear sense of institutional needs and opportunities. It became apparent that, for the sacrifices they required, reviews did not accomplish as much as they might. Reviews had been underutilized as a basis for decision making because they did not engage peoples' thinking about the future or deepen their perspectives on necessary changes. Indeed, they said, a more engaging review process might allow people to better comprehend circumstances at CU, and thereby to improve the chances that the faculty's review recommendations will be heard.

On that basis, the taskforce articulated five reform principles:

ACCOUNTABILITY

Not just for academic programs; university administrators, too, should have to be held publicly accountable for implementing review recommendations.

PERSPECTIVE

Reviews should purposefully coincide to better allow everyone, especially administrators, a more useful planning perspective.

ADAPTABILITY

The idea is that the best thinking about organizational change follows from the urgency of needs, not from "cookie cutter" review rules; the process should recognize that different academic programs have different review needs.

INNOVATION

The opportunity to effect change depends on convincing others of what is possible. How information is collected and displayed, especially online, could go far to empower people to command the relevant facts and make persuasive arguments.

COMMUNITY

Whether in person or online, when people feel invited to engage each other over choices, a community is affirmed and the chances for meaningful reforms improved. The review process should emphasize community engagement.

2010 SELF-STUDY GUIDELINES

We are eager to reap more from the work of self-evaluation. It is our hope that the reformed self-study process will give people interested in thinking about the university's future a better perspective on needs and opportunities. For one, we are timing reviews to purposely coincide so that shared interests and concerns are maximized. We are also changing how we model the information that reviews yield. We want people to have the chance to organize their thinking around what they recognize as important to their future, not around an unyielding set of evaluation criteria. Previously, units busied themselves with doing exactly this: answering an accountability "checklist" that addressed a lot of pro forma concerns but that was so perfunctory that the work of self-evaluation rarely yielded a useful sense of circumstances.

We are optimistic that by reordering reviews to improve topical coherence and by minimizing what is scripted, the faculty will be better able to recognize what is possible for the future. In other words, we are looking for the self-study process to yield a perspective on needs and opportunities that is more useful to planning—for allowing multiple possibilities to be discussed and compared and for decisions to follow that are grounded in a clearer sense of priorities.

How is the new self-study process different?

Our hope is to take advantage of the adaptability of the internet to make reporting more dynamically viewable and accessible by posting reports online. Specifically, self-study content will be comprised of online answers to directed questions or requests (similar to what you will find printed in the following section). With the help of a content management system that we are working with ITS to develop, and that we plan to launch in AY 2009-2010, these specific responses will be posted on a secure website and made viewable to readers in two ways: by department, for all responses, or per question across departments. This approach will make it possible to evaluate units individually, as under the old PRP, or to allow readers to make comparative evaluations, by allowing them to read responses to a single question across units. For example, we could examine what the physics department has to say about increasing the size of its graduate program or examine the response of all the arts and humanities to a call for an expansion in graduate education. Additionally, the site will allow users to post commentary and their own supplemental reporting.

What is the advantage of this approach?

The chance here is for departments, even for individual faculty, to address their reporting to what they think is important. Perhaps more than ever before, there is urgency about finding better ways to advocate for the university's scholarship agenda. We want to make sure that the faculty defines this agenda based on a careful evaluation of what is needed and what is possible. While we should dream about ideal scenarios for our units and our campus, we also need to think about the ways in which we can use current resources or limited new resources

to make important strides forward. While recognizing the importance of disciplinary strength, we also need to be aware of cross-, multi-, and inter-disciplinary opportunities, particularly as such approaches are particularly effective in addressing some scholarly questions and issues.

The option that we are developing to read self-study responses longitudinally reflects this reality. We hope to make it easier for people to recognize or address collaborative possibilities. In as many cases as possible, the reviews have been aggregated in such a way that where people might reasonably expect shared interests, or where the possibilities for collaboration are the most promising, everyone has a concurrent self-study obligation. What is important to recognize, though, is that the new self-study process gives the power to define opportunities to the university community. The emphasis here is less on top-down planning and more on the idea that changes that acquire the greatest consensus have the greatest chance at succeeding. It is the long-term goal of the new process, after all, to achieve campus-level plans from unit-level planning.

What are we expected to do?

Your first obligation is to think carefully about what you recognize as the university's needs and opportunities.

Your second obligation is to establish ties with your colleagues, whether in your department or elsewhere at CU. Employ these connections to develop your thinking, and to establish a community of shared interest.

Be prepared to make a case for organizational change as opportunities emerge to articulate your shared interests, whether through online conversations or in meetings. Think strategically, organize, and agitate.

If you are a unit head, your primary responsibility is to represent the interests of your organization in helping your colleagues complete all required reports—these reports will assume the form of answers to questions in the following section. In completing this reporting, and in guiding your faculty toward advocating for their own initiatives, you will also be responsible for leadership around a shared sense of obligation, if not purpose.

Your responses to the planning questions and the accountability requirements are due in the form of individual Word documents on the last day of the Fall term, on Friday, December 18.

SELF-STUDY REPORTING RULES

DEADLINE

All reporting is due by the close of business on Friday, December 18, 2009.

SUBMISSION and FORMATTING REQUIREMENTS

The special reporting format described below is designed to accommodate an online content management system. This change will make it easier to read, share, and archive reporting. Thank you for your help in fulfilling this requirement.

- I. All reporting must be completed in the form of Word documents and sent via email to arpac@colorado.edu before the close of business on December 18, 2009.
- II. Other than for questions 11- 14, responses to specific questions may not be required; for example, if you do not have a graduate program you do not need to answer Question 4 concerning graduate education. Questions 11- 14 must be addressed by every reporting unit.
- III. Each answered question requires a uniquely titled document. In other words, **do not submit a single text to us that answers all of the questions in one lump**. We will post your reporting online in a way that allows readers to dynamically view responses: both by unit and by specific question. Therefore it is important that your documents answer only one question at a time.

Label each document according to the following rule: Four Letter Department Abbreviation [underscore] Question [underscore] number. For example: PHYS_Question4.doc

The question numbers are not based on the number of questions you are answering but according to the number officially assigned to each question. For example if you are answering

Question 4: *Graduate Education*

... then the title of the resulting document for the Department of Physics would be PHYS_Question_4.doc

- IV. Each submitted document should repeat the question number and question exactly as it appears in the following section. Text from the “prologue and possible considerations” section that follows some questions should be omitted. For example begin your answer after repeating this information:

Question 8: *Graduate Education*

Task: Please describe how effective are the unit’s graduate education programs.

ADDITIONAL REQUIREMENTS

- V. For Chairs: If between now and December 18, 2009 you think of additional questions for your unit to answer, or if you have worked with other chairs to formulate questions spanning units, please notify us immediately, and preferably no later than Friday, November 20, 2009, four weeks before the reporting deadline.

Questions from individuals other than chairs are also welcome. This includes staff, students, non-affiliated faculty and the general public.

SUPPLEMENTAL INFORMATION

Basic unit data:

Gathered from statistics made available by the Office of Planning, Budget, and Analysis and from other resources like the Faculty Report of Professional Activities. This information is available online at the PBA website (<http://www.colorado.edu/pba/depts/arp/index.html>) in the form of pdf documents. Updated information (incorporating statistics from AY 2008/09) will be posted before Friday, October 16.

Vitae:

Supplied by the Office of Faculty Affairs from the Faculty Information Systems Database.

Question 1: Unit Overview

Task: Please provide an overview of your unit, including a summary of the resource requests justified elsewhere in the reporting.

Question 2: Faculty Support

Task: Please describe how your unit's faculty are hired, supported, and retained.

The campus recognizes that CU-Boulder's academic reputation rests in large measure on world-class research, scholarship, and creative work by our accomplished faculty and graduate students. The Flagship 2030 Plan proposes hiring an additional 300 faculty members over ten years. This plan is already being put into place, and the call for new faculty should be taken seriously. Please use this opportunity to think about the ways in which your unit wishes to shape itself in the future.

Hiring can serve to sustain or build disciplinary strength. It can be used to create new areas of excellence within a unit. In collaboration with other units, hiring can establish new fields of interdisciplinary work at CU. We encourage you to propose ideas about hiring that go beyond simply replacing retiring or departing faculty. How should your department look in seven years?

Question 3: Undergraduate Education

Task: Please describe how effective are the unit's undergraduate programs.

Flagship 2030 imagines a transformation of undergraduate education by changing the academic calendar, the residential experience of students, and the nature of learning itself. Beyond these specific plans, we are all looking for new and exciting ways of reaching our students, of providing them with the knowledge that they need, the ability to reflect upon that knowledge, the capacity to continue to learn. While we need to gather information about current programs, you should also imagine alternatives.

Question 4: Graduate Education

Task: Please describe how effective are the unit's graduate education programs.

The campus intends to increase graduate enrollments by 15% over the next 10 years. This provides an opportunity for units to increase their masters and doctoral students if they so desire. There is an opportunity here for units to make a case for resources if the university is to accomplish this goal.

Question 5: Research

Task: Please describe how effective are the unit's research programs.

Research, scholarship, and creative work are vital to the mission of the university. Please describe your unit's current efforts and future plans. Flagship 2030 addresses research in a number of its initiatives, so you may wish to connect your plans with its goals. You should consider resource needs to sustain and to develop your research efforts.

Question 6: Space and Infrastructure

Task: Please describe the unit's needs for space and infrastructure.

Every unit on campus needs more resources. We need to think about why any particular unit should be granted resources rather than another.

Explain your needs in the following areas, explaining how the resources to meet these needs will move the mission of your unit forward:

- Facilities: describe any needs for new buildings, renovation of buildings, and/or interaction with the campus master plan. In taking up this issue, please consider whether you think unit, College, and/or campus space allocation policies need to be developed and to be used more effectively to address current and future space issues.
 - Staffing: Flagship 2030 recognizes the need for increased staff support. Explain your staffing needs.
 - Computing: describe unmet computing needs.
 - Fundraising: describe fundraising needs and plans. In taking up this issue, please discuss the nature and effectiveness of your CUF interactions
 - ICR distribution models: discuss any issues that arise around IRC distribution
 - Special Needs: please describe any additional space or infrastructure needs.
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Question 7: Strategic Planning

Task: Please describe what are the unit’s strategic goals and aspirations.

Strong strategic planning is the key to making the self study process useful. Please remember that a strategic plan is not simply a wish list but is instead an outline of where your unit wishes to go, what it needs to get there, and how you will evaluate whether you have accomplished what you set out to do.

Question 8: *2030 Campus Strategic Initiative*

Task: Please discuss the relationship between your unit’s strategic goals and aspirations and the 2030 planning document.

Flagship 2030 provides a framework for the development of the campus as a whole. Please review this strategic plan (which can be found at <http://www.colorado.edu/flagship2030/>). Address specific initiatives as you see fit, linking them to your unit’s plans and aspirations.

Question 9: *The Role of Non-Departmental Units*

Task: Since not all units under review are regular degree-granting departments, such units should use this question as an open opportunity to describe their mission and its relation to other departments, research units, schools and colleges, and the campus.

MANDATORY ACCOUNTABILITY MEASURES

QUESTION 10: *Diversity*

TASK: Address enhanced diversity as a unit goal.

One of the goals of the university is that it will be a place that encourages inclusive excellence and exemplifies diversity, intercultural understanding, and community engagement.

- Given current resources, what efforts are you engaged in or could you engage in to pursue diversity, intercultural understanding, and community engagement; you might address, for example, faculty recruiting efforts, programs for under-represented students, and outreach programs.
- What would be the next steps you would want to take in the areas of diversity, intercultural understanding, and community engagement? What resources would you need? What barriers do you face?

- What would the unit's ideal program for diversity, intercultural understanding, and community engagement look like?
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QUESTION 11: *Mentoring*

TASK: Describe your mentoring process.

A new system Administrative Policy Statement calls for all units to have an adequate mentoring system to aid faculty as they move through the various levels of review, tenure, and promotion.

If you have a formal mentoring process in place, please provide the document setting it up or a description of how it works. If you do not have a formal mentoring process in place, please describe your plans for creating one. You will find mentoring plan models along with information about mentoring of the Office of Faculty Affairs website at:

<http://www.colorado.edu/facultyaffairs/mentoring.htm>

QUESTION 12: *Bylaws*

TASK: Attach a copy of your bylaws.

If your bylaws do not address promotion and tenure processes, please also include documents governing these processes.

If your bylaws do not include a grievance procedure, please describe how you plan to proceed in creating a unit-level grievance procedure in keeping with the BFA's call that every unit have such a procedure.

In light of the Office of Academic Affairs response to the 2008 BFA Instructor Taskforce, please specify what role rostered instructors play in the governance of the unit. The 2008 communiqué states "Rostered instructors should be considered as continuing parts of their department, college, or school community; they should participate in the governance of the department, in particular in relation to curricular matters (though they may not be involved in personnel decisions concerning tenure-track faculty)."

QUESTION 13: *Assessment*

TASK: Describe your unit's undergraduate and graduate outcomes assessment procedures.

During the last review period, how has the department/program assessed how well it has accomplished its curriculum goals? What has the department/program concluded with respect to the outcomes of its undergraduate and (and if applicable, graduate) curriculum? What changes in the curriculum or in major requirements have occurred as a result of your assessment of undergraduate program

INTERNAL REVIEW PROCESS

I. 2010 Internal Review Process: Purpose

A. The internal review serves as a check on the accuracy and completeness of self-study reporting. This work is the responsibility of an internal review committee (IRC) familiar with the overall campus culture whose members have no connection with the unit under review. The IRC is tasked with introducing the campus to what still needs to be known about a unit that is not available, or clearly recognizable, from what has been filed for review as documentary evidence of a unit's organizational qualifications (the self-study reporting). It is the committee's responsibility to act impartially and judiciously in assessing what still needs to be known. Whenever a matter is not adequately presented in the filed reporting, it is the IRC's responsibility to report on the matter to the unit head and to copy the ARPAC chair on these matters.

B. In instances where a unit's organizational qualifications are in serious doubt, it is the responsibility of the IRC to recommend that a unit undergo closer scrutiny. Such a recommendation will be taken up by the collective group of IRC leads. This will be a recommendation to the dean, to ARPAC, and to the provost and might trigger a contingent review.

II. Selecting the Internal Review Committee

A. The internal review is conducted by tenured members of the faculty from outside the division/aggregation under review and by an undergraduate and graduate student.

B. Reviewer nominations are requested from the unit, and may also be solicited from the dean and the Boulder Faculty Assembly.

C. Nominations for the undergraduate student will be requested from UCSU, or may be recruited from faculty involved in the process

D. Nominations for the graduate student will be requested from faculty involved in the process, or from other sources, as determined by the ARPAC chair.

- E. The unit is given an opportunity to review all faculty nominations and may strike names from the nominee list for any reason. The IRC nominations are then finalized by the office of the ARPAC chair.
- F. The faculty and student members of the IRC are asked to declare themselves free of any personal or professional conflicts of interest with the unit they are asked to review.

III. Guidelines for the Internal Review Committee Process

A. Procedures

1. The faculty and student reviewers will meet with the ARPAC chair, the chair's assistant, and any ARPAC member assigned to the unit as a primary liaison for orientation and to plan its review of the unit.
2. Each member of the internal review committee gets access to the unit's filed reporting
3. Each IRC member will be asked to familiarize themselves with these procedures and with previous review reporting for the unit.

B. Interaction with the Dean

After the committee members have had a chance to read through the filed reporting, they should contact the appropriate dean's office to schedule an interview with the dean (and for A&S units, with the associate dean). The dean may prefer to meet with the committee (or a subset of the group) before the review is conducted. Or toward the end of the process to discuss the draft findings and before a report is issued. In some cases a dean might wish to meet at both the beginning and the end of the internal review process.

C. Unit Involvement and Unit Interview Process

1. The unit is obligated to assist the IRC, including promptly providing the faculty and student members with faculty/staff/student contact information (email, phone numbers, etc), arranging for meetings space, and announcing meetings, if requested by the IRC to do so.
2. The committee faculty schedule interviews with representative groups of the unit's faculty. In small units, all faculty may be interviewed. One purpose of these interviews is to check the validity and thoroughness of self-study reporting and to assure that dissenting and alternative

views are heard. Any faculty member may request to speak with the IRC privately; the committee faculty should extend an appropriate invitation to the unit faculty at the beginning of the review. The IRC may also seek information from relevant campus groups beyond the unit.

3. The students assigned to the IRC should interview representatives of graduate and undergraduates in the unit. The committee faculty should discuss how this aspect of the review will be conducted with the student committee members. Many units have student clubs, organizations, and email listserves that could prove useful for survey purposes. The unit has an obligation to assist the student members of the IRC in the work of conducting a thorough survey of the student population.
4. Unit interviews occur while classes are in session during February and March and should be concluded by the first week of March.

IV. Guidelines for the Report of the Internal Review Committee

A. The preliminary report that the IRC will file, covering both faculty and student issues, should normally be under 5 pages in length. This initial report is due on Friday, February 5. The primary audience for the report is the unit chair or director. The report should consist of the following:

1. A narrative (up to **1000** words) that provides the IRC's sense of the unit under review. This narrative should in particular describe the completeness and adequacy of the Self-Study reporting and identify problems with the reporting and gaps in it. While in most cases the IRC will seek to solve these problems and fill these gaps by raising questions (see 2), this narrative provides an opportunity for the IRC to direct the unit and ARPAC to particular strengths and/or problems.
2. A list of questions or issues for the unit to address before Friday, February 19, 2009.

B. The IRC should review any amended reporting filed by the unit and report on its adequacy within two weeks (Friday, March 5). This is a report to the Academic Review and Planning Advisory Committee and to the provost. The report should serve as an advisory describing any follow-up actions required at the campus-level, such as the initiation of a contingent review.

V. Meeting with the External Review Committee

A. Upon the arrival of the external review committee, the IRC faculty and an assigned member of ARPAC will meet with the external reviewers for an initial briefing. If external reviewers are assigned with broader jurisdiction, say over the division/aggregation as a whole, or over a subset of units, meetings will be arranged as appropriate.

EXTERNAL REVIEW PROCESS

- I. 2010 External Review Process: Purpose
 - A. To gain an evaluation of the strengths and weaknesses of the scope of each unit; of each unit's curricular offerings and the training and competence of its faculty. To assess a unit's planning goals and progress toward meeting those goals.
 - B. To gain broadly applicable strategic information and evaluation. Whenever possible, visiting external reviewers will be engaged on larger questions about the research, scholarship, or creative work of the university, not just focused on individual units.
- II. Composition and Selection of Unit-Assigned Reviewers
 - A. Each unit will be assigned two external reviewers.
 - B. The chairs of the units under review will be solicited for the names of nominators, at a minimum ratio of 3:1 for each external review appointment. Nominators should be national leaders within their disciplines who are familiar enough with the unit to assist the campus in selecting external reviewers.
 - C. The ARPAC chair will contact a minimum of three nominators and ask each to nominate 10 – 15 candidates with backgrounds sufficient to provide broad planning advice. Nominees should be interested in, and widely knowledgeable about, issues in higher education. The preference will be for nominees from other AAU institutions and comparable universities.
 - D. The names of nominated individuals will be presented to the associate dean and to the chairs, who may strike names from the nominee list for any reason. The remaining nominees should be rank ordered. Any professional or personal relationship of a nominee with members of the unit must be noted by the unit.

- E. The ARPAC chair makes final selections. The chair extends invitations on behalf of the provost to the top-ranked nominees, working down the list until an external review committee is empanelled.
- F. Once the ERC is empanelled, the unit chair is informed by the ARPAC chair and a set of dates identified for the committee's visit.
- G. External reviewers are compensated in a manner appropriate with the fiscal rules of the University of Colorado.
- H. The ARPAC chair's assistant works with the reviewers to make arrangements for transportation, lodging and meals.

III. Unit-Specific External Review Committee Visits and Review

- A. Prior to their arrival, external reviewers will be made familiar with these procedures, and with the goals of the CU-Boulder review and planning process. The reviewers will be given access to the unit's self-study reporting, as well as the self-study reporting of other units in the division.
- B. All members of the External Review Committee must be present at the visit. If a member cancels, this will require the selection of an individual to fill the vacancy and the visit will be rescheduled if necessary. In extraordinary circumstances, it may be possible to utilize tele- or video-conferencing for one member of the ERC.
- C. The External Review Committee visits are scheduled while classes are in session, early in the Spring semester. On arrival, reviewers will be provided complete itineraries of scheduled interviews. If the reviewers wish to hold additional interviews, the ARPAC chair's assistant will work to make the necessary arrangements.
- D. Reviewers typically arrive in Boulder late in the afternoon of the first day. The reviewers will be scheduled to attend a dinner with a representative from ARPAC, and with the faculty internal reviewers. The ARPAC representative will brief the reviewers on procedures, the planned agenda, and answer any questions. This is also an opportunity for the IRC and the external reviewers to discuss matters and concerns of consequence to the discipline of the review unit.
- E. The first and second review days are spent meeting with students, faculty, and staff from the unit under review. The reviewers (either together or separately) will meet with a number of small groups of faculty. Especially in small departments, the external reviewers will meet all the faculty members at some point during their visit. Any faculty member may request a private meeting with an external reviewer, though if the schedule

does not allow this, an option exists to talk by phone or via email after the review visit ends. A subsequent meeting with the IRC may also be arranged. On these days, lunch meetings may be arranged with members of the unit or members of ARPAC. Following the end of campus activities, the reviewers will have their evenings free for their own discussions.

- F. On the third day, the focus of conversations will be on planning and larger organizational themes. Meetings will be scheduled with the provost, the deans, and the chairs and faculty of cognate units, as is considered suitable. In some instances, the visits of external review committees might be made to coincide based on larger organizational themes or concerns. In such instances, the third review day will present an opportunity for the external review committees to meet collectively to address these broader questions or concerns.

IV. The Reports of Unit-Specific External Review Committees

- A. The External Review Committee will submit reporting in either one or two possible ways. If the committee visited campus separate from the visits of other ERCs, the group will submit a single, joint report, agreed upon by each of its members within 10 days after their departure from Boulder.

This report is sent as a Word document by email to the ARPAC chair.

If the committee finds that the research qualifications of a unit are in doubt, it should make this clear in their reporting. This kind of information will be advisory to the provost in determining whether a contingent review of the unit is advisable, including a much more thorough external review.

- B. If the External Review Committee's visit coincided with the visits of other external review committees, and if the groups conducted conversations in common, a second report may be submitted. This report will address planning questions of overlapping concern by someone identified from among the committees as a coordinating author. This person will receive extra compensation, and will have an additional 10 days to complete this work.
- C. When the ARPAC chair receives the unit-specific report, it is forwarded to the chair or director of the unit. The unit has 14 days to make written comments to ARPAC for the correction of factual errors only.
- D. When the ARPAC chair receives a joint-committee report, it is forwarded at the same time to the associate dean, and the unit chairs covered by the

report. The group will have 14 days to make written comments to ARPAC concerning the contents of the report.

- E. External review reporting of both types (unit specific and addressing larger planning themes) will be made available to the visiting divisional external reviewers before their visit to campus in mid to late April.

V. Composition and Selection of Division-Wide Reviewers

- A. The division-wide reviewers should be individuals familiar with the collection of units broadly conceived; this may, thus, be deans and divisional directors at other AAU institutions and comparable universities.
- B. The four division-wide reviewers will be nominated directly by the deans involved (A&S and Grad School). A list of names will be due to the office of the ARPAC chair by Friday, October 2.
- C. The reviewers should be selected based on their ability to contribute to an understanding of long-term (7 years) and wide-ranging objectives for research in the sciences and mathematics at CU-Boulder.
- D. Once the divisional external review committee is empanelled, the dean is informed by the ARPAC chair and a set of dates identified for the committee's visit.
- E. External reviewers are compensated in a manner appropriate with the fiscal rules of the University of Colorado.
- F. The ARPAC chair's assistant works with the reviewers to make arrangements for transportation, lodging and meals.

VI. Division-Wide External Review Committee Visits and Review

- A. Prior to their arrival, the divisional external reviewers will be made familiar with these procedures, and with the goals of the CU-Boulder review and planning process. The reviewers will be given access to all of the division's Self-Study reporting, as well as the reporting of the internal and unit-specific external review committees.
- B. All members of the External Review Committee must be present at the visit. If a member cancels, this will require the selection of an individual to fill the vacancy and the visit will be rescheduled if necessary. In extraordinary circumstances, it may be possible to utilize tele- or video-conferencing for one member of the ERC.

- C. The External Review Committee visits are scheduled while classes are in session, late in the Spring semester. On arrival, reviewers will be provided complete itineraries of scheduled interviews. If the reviewers wish to hold additional interviews, the ARPAC chair's assistant will work to make the necessary arrangements.
- D. Reviewers typically arrive in Boulder late in the afternoon of the first day. The reviewers will be scheduled to attend a dinner with representatives from ARPAC, the deans and associate deans. An ARPAC representative will brief the reviewers on procedures, the planned agenda, and answer any questions.
- E. The first review day is spent meeting with groups of faculty assigned by the division to discuss planning in *areas* of research, scholarship, or creative work. Poster shows be assembled by the faculty describing major organizational initiatives. A tour of relevant facilities should be planned. On the first day, lunch meetings may be arranged by the deans offices or the office of ARPAC chair. Following dinner, the reviewers will have a free evening for their own discussions.
- F. The second review day should be spent in meetings with unit chairs, the deans, leaders in Boulder's and Colorado's scientific communities, and with faculty assigned as leads on specific initiatives. The committee will meet with the provost at the end of the visit. (A third day may be added to the visit, if agreed to by all concerned in advance.)

VII. The Report of the Division-Wide External Review Committee

- A. The division-wide review committee will submit a report describing their findings and establishing specific and detailed recommendations for the development of the physical sciences and mathematics at CU-Boulder over the next seven years. The recommendations must relate goals to planning previously articulated by the CU-Boulder faculty and to a realistic expectation of resources. This reporting must be completed within in 20 days after the committee's departure from Boulder.
- B. The report of the Division-Wide External Review Committee is forwarded to the dean. The dean has until September 1, 2010 to file a response to the committee's findings. The response should include a detailed accounting of any organizational and resource implications stemming from the external review recommendations. The response should be submitted electronically to the office of the ARPAC chair and will be made publically viewable online.