

“Interdisciplinary Hiring, Tenure and Promotion: Guidance for Individuals and Institutions”

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[Council of Environmental Deans and Directors](#)

Summary

Traditional scholarly evaluation, reward, and promotion systems tend favor disciplinary and sub-disciplinary research expertise and experience over interdisciplinary successes. At the same time many important research questions require integration of multiple perspectives. Recognizing the need to develop better means of handling faculty and researchers who do not fit standard disciplinary and departmental criteria, some institutions are putting in place new guidelines for hiring, and sometimes for reviewing, interdisciplinary scholars. However, few have developed a comprehensive approach that deals with the entire pre- and post-tenure experience.

To address issues faced by interdisciplinary faculty and research scientists, the Interdisciplinary Tenure and Career Development Committee of the [Council of Environmental Deans and Directors](#), has developed “Interdisciplinary Hiring, Tenure and Promotion: Guidance for Individuals and Institutions.” The guidance is targeted towards both individuals and academic administrators with the goal of facilitating the development and advancement of interdisciplinary scholars over the course of their careers, and promoting a dialogue about structural issues and options.

The first stage in the career of an interdisciplinary scholar actually should occur before the scholar is hired, as institutions consider the conditions under which the interdisciplinary scholar will exist. Are there mismatches between departmental structures and cultures, particularly in evaluation metrics and resource availability? Are hiring, rewards, evaluation and promotion criteria aligned appropriately for the interdisciplinary scholar? We pose specific questions an institution should ask of itself in reviewing structural arrangements regarding interdisciplinary arrangements.

The second stage is establishment of the interdisciplinary position. Here we recommend that institutions involve a wide variety of faculty and administrators in the crafting of interdisciplinary position descriptions and performance expectations, as it is vital to gain consensus about goals within the faculty, departments and administration. Special care should be taken with joint appointments – if used the ratio of service should not be 50:50, but at least 60:40; this helps in managing departmental expectations.

The third stage encompasses the search, hiring and pre-tenure process. Central to our recommendations is a Memorandum of Understanding (MOU); the MOU will act as the

foundation of the position, defining the process and expectations for all parties, including the tenure and promotion committee (see [Appendix I](#)). Additional logistic needs arising from the involvement of multiple departments or units are also considered, for example, articulating to the search committee that different disciplines have different hiring schedules and that it may take longer to set up visits because of the larger number of schedules that have to be accommodated.

The fourth stage is that of junior faculty development, mentoring and protection. We explore the differences in interdisciplinary scholarship and publication, such as the high networking cost of collaborative projects and assessing contributions to multi-authored publications that create difficulties in the tenure and promotion process. We suggest steps faculty, mentors, departments and administrators can take to reduce those difficulties, such as providing travel support and hosting visiting interdisciplinary speakers.

The fifth stage is dossier development and evaluation. As interdisciplinary scholarship is often collaborative, scholars must take extra care to demonstrate their originality, creative thought, identifiable contributions, and capacity for independent scholarship and leadership. We recommend an annotated CV and special guidance to letter writers, among other strategies (see [Appendix II](#)).

The final stage is senior career development. Here we recommend resources and rewards, such as merit pay and professional development funds, be made available at the Dean's level or above, specifically for interdisciplinary activities. The role of senior faculty in interdisciplinary leadership roles is also addressed.

Interdisciplinary Hiring, Tenure and Promotion: Guidance for Individuals and Institutions

Council of Environmental Deans and Directors

Goal

To facilitate the development and advancement of interdisciplinary scholars.

Note: We intend for this to reach beyond Environment, and be useful for other interdisciplinary fields – for example, women’s and urban studies.

Need

Traditional scholarly evaluation, reward, and promotion systems tend favor disciplinary and sub-disciplinary research expertise and experience over interdisciplinary successes. At the same time many important research questions require integration of multiple perspectives.

Acknowledgement of the value of interdisciplinary scholarship is evidenced in various papers and reports and in the emergence of institutes and centers dedicated to bringing disparate disciplines together in pursuit of better and more useful knowledge.

Recognizing the need to develop better means of handling faculty and researchers who do not fit standard disciplinary and departmental criteria, some institutions are putting in place new guidelines for hiring, and sometimes for reviewing, interdisciplinary scholars. However, few have developed a comprehensive approach that deals with the entire pre- and post-tenure experience. This document seeks to address issues faced by both faculty and research scientists, raising concerns for consideration and providing recommendations and examples ([Table 1](#)). The resources are designed to help guide individuals, as well as institutions, in fostering and promoting interdisciplinary scholars, and to promote a dialogue about issues and options for different career stages.

Table 1. Guidance Matrix

LIFE CYCLE:	Issues and recommendations	Sample language (case studies)	Links to resources
Structural Considerations	Stage One	UNC Greensboro ; University of Wisconsin, Madison	University of Michigan review
Position creation and institutional acceptance	Stage Two	Ohio University	University of Washington
Search and hiring	Stage Three	University of St. Thomas	Pfirman et al., To Thrive and Prosper
Junior development, mentoring and protection	Stage Four	University of Michigan	Nelson Institute, Self-Assessment ; National Academies of Sciences, Facilitating Interdisciplinary Research
Dossier preparation and evaluation (3 rd , 5 th year reviews, tenure)	Stage Five	University of Iowa ; Wayne State University	Aboeela et al., Defining Interdisciplinary Research
Senior development	Stage Six	University of Washington	Pfirman et al., Collaborative efforts

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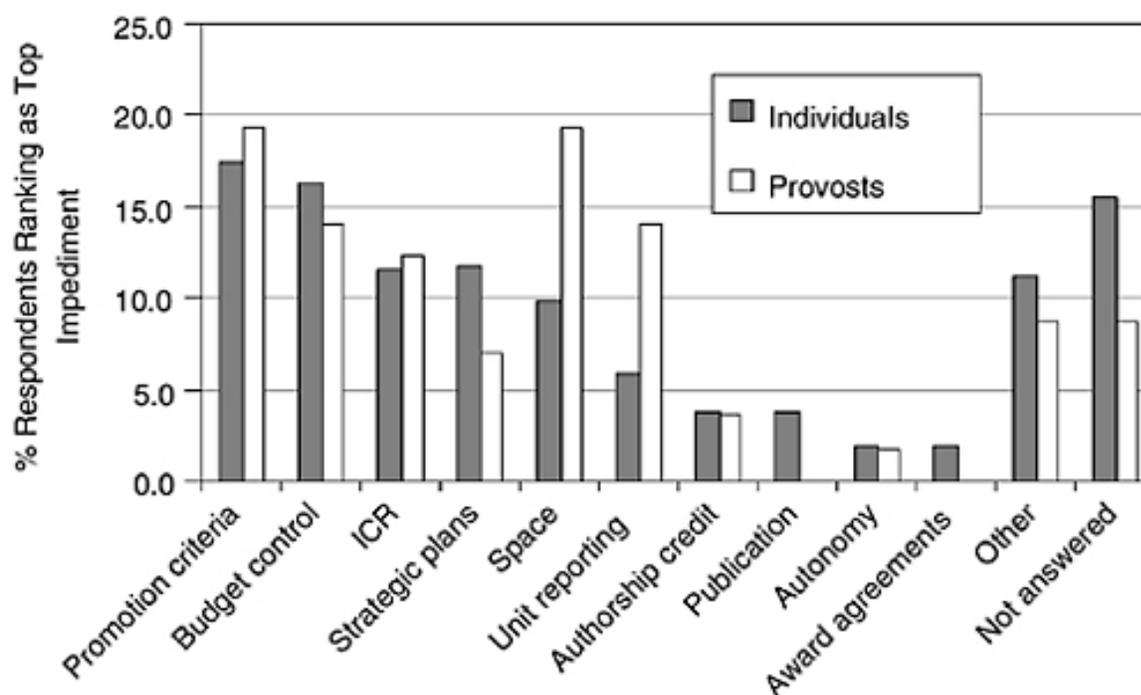
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Stage 1: Structural Considerations

Promoting interdisciplinary¹ work requires consideration of disciplinary and departmental structures and cultures. Concerns in fostering and assessing interdisciplinary scholarship usually involve a mismatch in the evaluation metrics applied to the contributions of interdisciplinary scholars. Conventional departmental and promotion and tenure committees often apply disciplinary-based procedures and standards to assess the work of interdisciplinary scholars. Although many believe that there can be a “one size fits all” approach to evaluating scholarship, there are strong asymmetries between disciplinary and interdisciplinary work that make such forms of “equal treatment” manifestly inequitable. In the recent analysis by the National Academy of Sciences, concern about “promotion criteria” was the most frequent issue raised by both individuals and provosts in response to a request to rank the top five impediments to interdisciplinary research at their institutions ([Figure 1](#)), followed by budget issues (control and indirect cost recovery -- ICR), strategic plans, and space (although note the contrast between individuals and provosts in the relative importance of the latter).

Figure 1. Impediments to Interdisciplinary Research ([COSEPUP, 2004](#))



¹ The term “interdisciplinary” in this contribution also encompasses multidisciplinary and transdisciplinary approaches to teaching and research, as we are concerned with scholarship that does not fit within disciplinary structures. The strict definition of interdisciplinary scholarship, is that which takes place at the intersections of disciplinary knowledge, and typically involves scholars whose training and interests overlap two or more disciplines. Multidisciplinary endeavors typically involve scholars working independently within their own discipline, but collaboratively on projects that involve two or more disciplines. Transdisciplinary endeavors involve scholars working synthetically, in the best sense of that term, beyond the boundaries of disciplinary frameworks and methodologies.

This issue of metrics is of particular concern to the development of junior interdisciplinary scholars. In the early stages junior scholars tend to see the positive aspects of conducting synthetic, interdisciplinary work ([Table 2](#)). Unfortunately, the negative implications phase in and accumulate over time, often reaching a critical point at about the time of the tenure decision. However, the negative aspects may not end then; many of the challenges continue to impact senior interdisciplinary scholars throughout their careers.

Institutions engaged in or embarking on interdisciplinary ventures need to be aware of these issues and dedicate resources appropriate to their level of commitment. There is no “one size fits all”, and different activities can be supported at different levels ([Table 3](#)). The main point to recognize is that interdisciplinarity inherently requires more attention to make it successful, because, by definition, it does not fit in traditional departments, which are organized around established disciplines, resources and cultures.

To address these issues, we recommend alignment of interdisciplinary goals with institutional strategy ([Figure 1](#)) as well as with hiring, rewards, evaluation and promotion criteria. Questions for institutions to consider include:

- (1) The long-term commitment of the institution, or departments, to provide resources necessary to support interdisciplinary scholarship, including targeted fundraising and facilities, such as cross-disciplinary or thematic buildings.
- (2) Development of expectations and standards for interdisciplinary scholarship which are different from those existing for long-standing disciplinary areas of inquiry. For example, institutions might decide to shift from using only “discovery” as the critical issue in evaluation of scholarship to using the [Boyer \(1990\)](#) criteria of “discovery,” “integration,” “application,” and “teaching.” This is done successfully now within the context of many large land-grant institutions because of their historic missions, while the level of acceptance varies among other institutions.
- (3) Analysis of institutional process, membership, and practices of departmental structures and promotion and tenure committees to assess whether there are impediments to fair and objective reviews of interdisciplinary work.
- (4) If women and under-represented minorities are disproportionately attracted to interdisciplinary scholarship, as some research suggests (e.g., [Rhoten and Pfirman, 2007](#)), how might institutional diversity be impacted by structures favoring disciplinary research?
- (5) Establishment of a high-level committee and/or individual (e.g., Vice Provost of Interdisciplinary Initiatives) to oversee and champion interdisciplinary activities.
- (6) Mechanisms to showcase interdisciplinary accomplishments on campus, including granting of awards and honors.

Table 2. Promise and Perils of Interdisciplinary Scholarship

Interdisciplinary Research		
	Often Early Attraction ...	But Later difficulties ...
New area	Can break new ground Less competition Less urgency	Lack of recognition by established scholars Lack of sustained funding opportunities Lack of journals Lack of peer reviewers Career trajectory not known Long start up time No one to correct flaws
Social/Applied Connections	Appeals to social conscience Connect with public good	Less prestigious research area Considered less rigorous
Complex questions	Holistic approach required	Less amenable to theory Considered less rigorous
Collaborative	Build on strengths of others Use people skills	Time to cultivate and maintain Critical literature in other field Dependent on collaborator Idea origin not clear
Between Depts/Centers	Freedom because outside of established hierarchy	No one has responsibility for you
Inter-institutional	Broadens network for letter writers	Requires travel Less visibility on home campus

Interdisciplinary Education and Community

	Often Early Attraction ...	But Later difficulties ...
Teaching	Exciting subject Student interest +/-Co-teaching Field experiences Service learning - No textbook, resources	No textbook, resources Lack of infrastructure and rewards to sustain “extra” activities (field, service) Co-teaching
Campus Life	Campus programming Community connections Bridge between disciplines: search committees, presentations Become known on campus	Everyone wants a piece of you
Scholarly Participation	Field more open, can initiate programs	Few high level, prestigious committees Not as many honors as in disciplinary fields
Promotion and Tenure		Criteria often disadvantage interdisciplinary scholars

Table 3. Spectrum of Interdisciplinary Involvement

Commitment and Investment	Modest	Intermediate	Significant
Students/ Curriculum	Minor	Concentration, Special Major	Major
Administration	Committee	Center, Program	Interdisciplinary Department
Faculty	Affiliated Hire in Disciplinary Department	Adjunct, Off-ladder, Joint Hire	Tenure-track in Interdisciplinary Department
Research Scientists	Soft-money Support for Single or Short-term Project	Multi-year Support	Institution-committed Career Interdisciplinary Research Scientist Line

Stage 2: Position Creation and Institutional Acceptance

Like so many other scholarly achievements, successful interdisciplinary scholarship depends to a large degree on how well initial hiring, goal setting, mentoring, and incentive structures are designed. There is a need to engage disciplinary faculty, interdisciplinary faculty and research scientists, senior academic administrators, and representatives of promotion and tenure committees at an early stage in the crafting of interdisciplinary position descriptions and performance expectations. Where available, institutes or centers devoted to fostering interdisciplinary activities may be key players in resolving inter-departmental issues and helping with identifying available and appropriate amounts of start-up funding. Although the stimulus and interest for job creation comes from different levels of administrators and faculty members in each situation (sometimes bottom-up and sometimes top-down), it is vital for gaining consensus about expectations to engage the departmental, and upper and middle administration levels as soon as possible in the position creation process.

Beyond discussion of expectations, we recommend that a Memorandum of Understanding (MOU) be prepared that actually articulates expectations about scholarship, teaching, budget, space and departmental and community participation (such as [Ohio University](#) and [University of Southern California sample checklist](#) and see sample MOU checklist in [Appendix I](#)). The details can always be adjusted later, if needed, to fit the particular circumstances of the individual hired. However, the more that can be agreed upon early, the better it is for departments involved as well as for the new hire. Especially critical to define are the criteria to be used in promotion and tenure decisions, for example, types of publications, publication venues, involvement with teaching and advising students in more than one department -- or, for research scientists, responsibilities such as successful collaborations with society (including agencies, NGOs, private sector, etc) or integration with similar research activities elsewhere (e.g., [Appendix III](#)).

Joint hires are seen as a solution to a variety of issues: a grant that requires new expertise, a departmental desire for a new hire that can't be justified on its own, or an interest in exploring a new area of scholarship that sits between two departments. While joint hires may work at the senior, post-tenure level, junior joint appointments often result in difficulties, especially when one of the departments is not fully supportive at the outset. It is important that the new hire not bear the brunt of departmental conflict "like adopting a child to sort through a marriage" (Art Small III, pers. comm.). If the joint position is initially supported by a grant or other time-specific arrangement, departments often have to start paying for the line coming close to the time of the tenure decision, compounding scholarship and fiscal issues. Even when the chairs of the departments are in agreement, many department chairs rotate over time, risking a loss of support and placing the new hire in the position of having to justify his/her own position.

In cases where junior faculty or research scientist appointments are evenly split between two departments, the demands on their time and activity can be excessive. Allocations of 60:40 or 70:30 may be preferable, with the department of emphasis serving as the faculty member's home unit and the other department(s) given an affiliated or secondary designation. In either case, it is especially critical in the case of junior joint hires that departmental service expectations be clarified at the outset and a budget model should be included in the MOU ([Figure 2](#), [Appendix III](#)). Usually the academic responsibilities of the hire in each department/program should match

the fiscal responsibility. In the case of interdisciplinary programs that draw heavily on faculty from disciplinary departments, it may be desirable to create a budget line to pay for advancement, teaching, and development costs associated with interdisciplinary teaching and advising so that departments don't feel like they are being taken advantage of.

The advertising copy for the position should not appear to be an unedited "wish list" of multiple departments. Along this line, for teaching faculty, clearly defined teaching expectations are needed so that, for example, a faculty hire with an interdisciplinary PhD is not required to teach department introductory courses for which (s)he is unprepared to teach (see sample in [Appendix IV](#)). Conversely, it may be valuable to explicitly state in the job advertisement any requirement to teach within a specific department (for example when it is a requirement of the position in order to "pay back" a disciplinary department's long-term commitment to an interdisciplinary program). For researchers, clear guidelines should be provided with regard to teaching courses, serving as guest lecturer in others' courses, participating on search committees, and advising students.

Regarding institutional acceptance, one strategy is to work with departments, relevant institutes/centers (if available) and upper administration to develop a cluster (two or three, or more new positions depending on resources) of positions that supports a general theme or initiative, e.g., global change and conservation, environmental sustainability, and advertise the cluster without specifying home departments. Thus, the initial activities set the stage for broad scale acceptance of the concept, and the notion that the success of the initiative or cluster is the objective, rather than the success of an individual department landing a new full time equivalent (FTE) position. Search committees are constituted from potential home departments and, where appropriate, from participating institute(s)/center(s). Departments "compete" for candidates during the interview process and candidates identify preferred home department(s). Position descriptions are written fairly broadly, beyond the normal scope of departmentally-based positions, with clear expectations that the incumbent will contribute to the goals of the initiative or theme. The top candidate for each position negotiates with home department(s). Enterprising, broad-minded, integrative, interdisciplinary departments stand the best chance of landing the faculty.

Stage 3: Search and Hiring

As much as possible, the search committee and pre-tenure reviews should replicate the committee structure and procedures that will be used for the recommendation for tenure. It is important to maintain a diverse search committee, as well as to recognize differences in professional background within the search committee and between search committee members and applicants. In most cases, greater networking, logistical, and financial investment on behalf of the search committee is necessary in interdisciplinary searches because both advertising and meeting with candidates must go beyond a single department. Distributing guidelines about differences between interdisciplinary and disciplinary search committee operations is also helpful.

Search committee members should be briefed on key issues and presentation styles of the applicant's discipline prior to the on-site interview. For example, in some disciplines scholars read their papers, while in others they talk from slides.

It is often necessary to interview more candidates than is normally the case for a disciplinary hire, requiring a larger travel and expense budget. Because candidates need to meet with more departments and people, it is more difficult to set up the schedule and a longer visit may be necessary. Search committees should be aware that some disciplines hire earlier in the year than others, so the search may timeline may have to be accelerated. Also, in some disciplines the search committee is expected to first meet candidates at a national professional meeting.

As noted for "Stage 2: Position Creation and Institutional Acceptance" preparation for supporting and advancing interdisciplinary hires starts even before the search, when the position is being defined. During the search and hiring phase, issues such as research, teaching, service, and mentoring obligations for all departments should be spelled out for the candidate and included in their letter of appointment. Increasingly institutions are writing a memorandum of understanding (MOU) that details relationships and responsibilities at the beginning. While affiliated hires with limited commitments in another department may not require much formalization, formal documentation is especially important when an individual has multiple offices, labs, teaching, research, and service requirements. In setting up these types of positions, the search committee should be aware that it will be difficult for the individual to be everything to everyone: the MOU should be designed to help departments as well as the candidate manage their expectations. Where there is a service responsibility, a voting responsibility should also be considered. It is important that department chairs receive guidance on how to handle interdisciplinary scholars. What works within the discipline, for example, a reliance on informal mentoring, may not work for those who are bridging disciplines and departments (e.g., [UNC Greensboro](#) or [University of Michigan](#)).

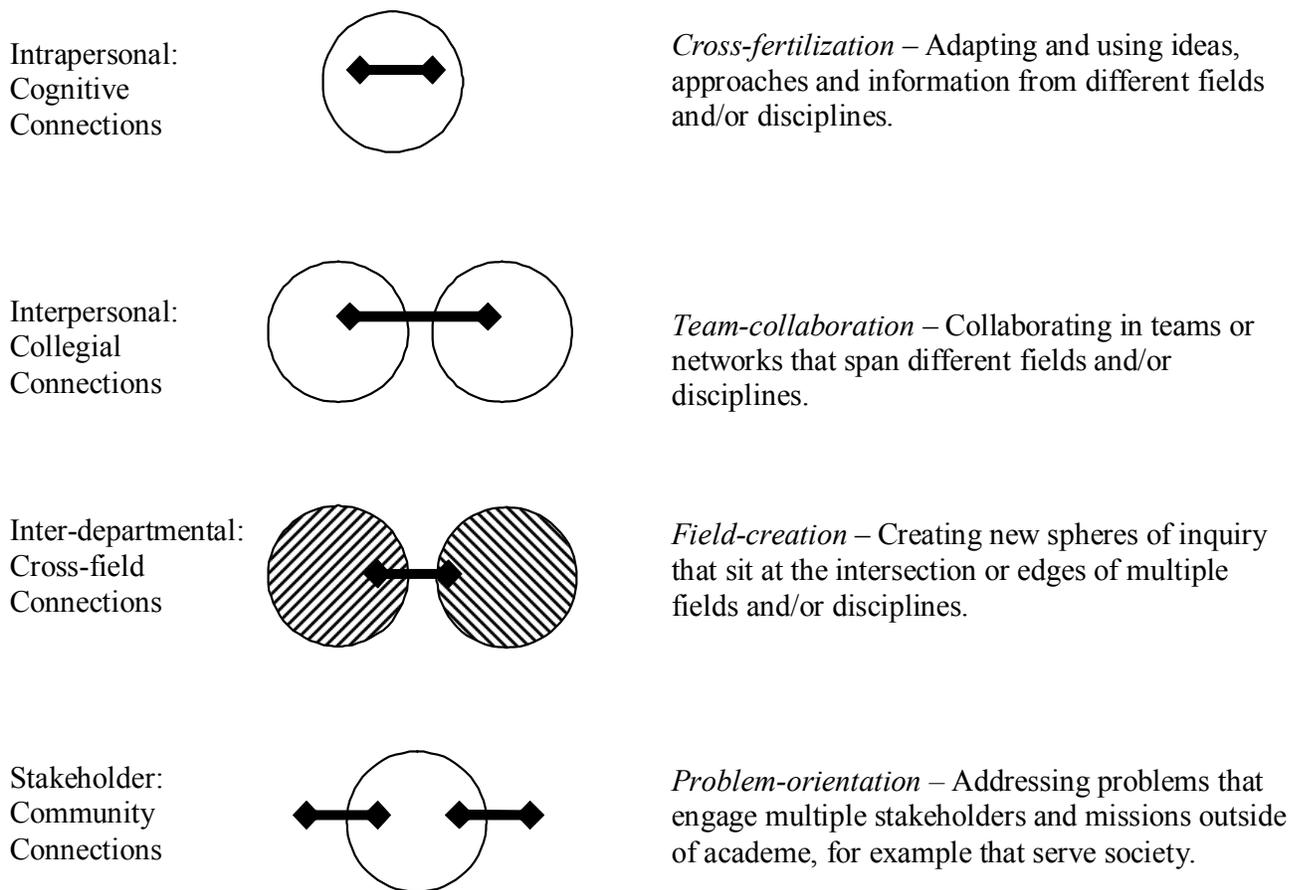
Going beyond the usual information contained in an appointment letter, the letter of appointment and/or the hiring MOU should also address the issue of departmental representation on review committees, including the tenure process, as well as the criteria on which review will be based and the terms and conditions for success in the position (see [Stage Two](#), sample MOU in [Appendix I](#), and [St. Olaf Statement of Professional Expectations](#)). These criteria should be designed to address, for example, the expected balance to be achieved between disciplinary and

interdisciplinary research and publication activities. The criteria should include guidance, not only on the overall level of publication productivity, but also on interdisciplinary publication activity - including criteria for judging the acceptability of the journals in which the research results are published. The types of criteria should also be formalized in writing for junior faculty members and research scientists who may not have originally had an interdisciplinary focus but who have become involved in substantial levels of interdisciplinary work. Developing a “scope of scholarly activities” document that includes such information and talking in advance to department and program about what might be appropriate journals, meetings, and other communication mechanisms will help.

Stage 4: Junior Scholar Development, Mentoring and Protection

Junior faculty and researchers involved in interdisciplinary scholarship require mentoring to ensure that their scholarship is not penalized by a lack of fit with established resources and rewards. Interdisciplinary scholars approach their research in different ways, and each approach has somewhat different implications (Figure 2). They can work on interdisciplinary questions as individual scholars, bringing together information from different fields or they can work in teams. Their projects frequently cross departments, and often involve applied problems with unusual stakeholders, outside of the academy.

Figure 2. Interdisciplinary Ways of Working (adapted from [Rhoten and Pfirman, 2007](#))



Collaborative interdisciplinary research has particularly high networking costs. Colleagues often have different priorities and it takes time to learn how to cross disciplinary language barriers. Time and energy are also required for identifying potential partners, maintaining contact with them, and writing and then revising multi-authored documents. If the collaborators are not at the same institution, support for travel at this time can be vital. Seeing collaborators at meetings and/or visiting them in their home institutions – and giving a talk while they are there – is an excellent way to maintain connections and build recognition. Travel support for interdisciplinary

scholars to attend meetings of a number of disciplinary groups is also important, as at [Ohio University](#).

As collaborative interdisciplinary projects evolve, junior scholars need to make clear their unique contributions. The best way to do this is to publish some of the research as a senior author. Senior PIs of interdisciplinary projects should be advised to make sure that junior researchers on their projects have this opportunity, as it is important for their intellectual as well as their academic development. Senior PIs should also clarify the role of their junior colleagues when they write letters of support for review files.

Junior interdisciplinary scholars housed in a disciplinary department are often caught between two different pressures (e.g. [Table 2](#)). The first is the promotion and tenure processes that require demonstration of sufficiently high levels of productivity in conducting research and publishing in the discipline (and in the better journals of that field). The second is the desire to devote considerable energy and resources (including time) on interdisciplinary work and publication in journals that may be rather distant from the home discipline.

Interdisciplinary research projects frequently take a long time to get established and produce results – in part because of the networking required to bridge cultures and communities, but also because finding funding for interdisciplinary research is often a challenge. While there has been increasing attention to interdisciplinarity in recent years, requests for proposals (RFP's) for interdisciplinary research and scholarship may not be as predictable as RFP's in the traditional disciplines. Because each funding source has its own traditions, it is hard to learn how to gain entry. Also, reviews of interdisciplinary proposals are complicated when reviewers are highly critical of the one area of the project that they know best and may not fully comprehend innovation in the overall approach. Also problematical is the relatively small pool of interdisciplinary scholars from which funding agencies can draw. Further, given that one of the primary resources available to interdisciplinary researchers is funding to support graduate and sometimes undergraduate students, the junior faculty member must also balance the students' training and career prospects.

Interdisciplinary research, particularly research that cuts across biophysical and social sciences, can be difficult to publish in widely recognized journals. There are relatively few journals that specialize in broadly interdisciplinary research and among the ones that do, the impact factor varies greatly. Ideally the junior faculty member or researcher reserves publication of major innovations for highly respected - often disciplinary - journals that count more in promotion and tenure reviews. While interdisciplinary research is often published in conference proceedings or as book chapters, because these are not usually indexed by the Web of Science, they are more difficult for other scholars to find, and therefore cite, so the contribution is not likely to have as much impact as when published in a journal.

An excellent way to highlight the significance of the interdisciplinary research, as well as to build research recognition, is for junior scholars to have the opportunity to invite speakers who are doing related work to campus. This helps other faculty, researchers and students learn how the junior associate's work fits into the larger field. If the junior scholar hosts or co-hosts the speaker, this will also provide a mentoring opportunity for them. Another option for junior

scholars to gain visibility is to host special sessions at professional meetings and become involved in professional societies. Encouraging junior scholars to apply for seed grant funding for interdisciplinary work can help them learn the fine points of interacting across disciplinary boundaries and articulating proposed interdisciplinary work convincingly.

Interdisciplinary teaching activities should be explicitly supported by the departments involved, such that the junior scholar is appropriately credited for the effort involved in developing new courses – often without a standard textbook or teaching resources -- and team teaching. Expectations with regard to mentoring and advising students from disciplinary and interdisciplinary standpoints should be spelled out at the beginning of the person's employment. Criteria might include students' research contributions to interdisciplinary projects, students' success in completing a thesis that contributes to the discipline and also contains research that has contributed to the larger disciplinary effort, and students' integration into public outreach activities. Where research scientists are engaged in some level of teaching, their contributions should be recognized appropriately.

Criteria addressing the nature and extent of public interaction and service should be detailed for interdisciplinary activities requiring such interactions. This latter consideration is especially important in situations where grant-funded research explicitly entails working with the public to develop and disseminate application-oriented knowledge and products.

Mentoring for junior faculty and research scientists should include, whenever possible, structured interaction with, and support from, at least one senior faculty member who has experience in interdisciplinary research. One possibility is to have one or more members of the search committee mentor the hire throughout the pre-tenure process. Another mentoring method is to assign a senior faculty member to mentor the junior faculty member and schedule lunches with the mentor, mentee, and department/program chair. When establishing a mentoring relationship it should be clear to all whether or not the mentor has a role in evaluating the junior person. Mentoring should include liaising with the department and where needed with upper-level administration to assure that the strategies described above are implemented appropriately.

Stage 5: Dossier Preparation and Evaluation (3rd, 5th year Reviews and Tenure)

Because interdisciplinary scholarship is often collaborative, review of interdisciplinary scholars requires special care and attention, in terms of both dossier preparation and evaluation.

Dossier preparation

One of the most important factors to keep in mind in preparing materials is clarification of the significance of the individual's contribution. The dossier will be read by many people who do not have expertise in the area of the candidate, and will need information on fundamental issues ([Austin, 2003](#)). For example, because many reviewers of interdisciplinary scholars will not be familiar with all the journals, the CV could be annotated with information on journal standing, and reasons for selecting that particular journal as the publication venue (see annotated CV guidelines in [Appendix II](#)). The role and specific contributions of the individual in the research could also be noted. Synthesis papers – often an important product of interdisciplinary scholars – should be clearly distinguished from reviews, as reviews may be discounted by evaluators as not being original contributions.

Regarding the work experience part of the CV, many interdisciplinary scholars have complex career trajectories enabling them to bring a wealth of experience to their position. However, most positions outside the academe have lower (or no) expectations, or offer fewer opportunities, for publication. Since some reviewers focus on the number of publications after receiving the PhD as a measure of productivity, it may be useful to separate career experience into two or more categories so that the time periods when research and publication was possible are clear and that scholarly contributions other than peer-reviewed publications are also evident.

The research, teaching and service statement written by the candidate, and the chair's statement, should also be written for a more general audience than is the case for disciplinary scholars. The candidate's statement is an opportunity to demonstrate an overarching plan or theme, including the candidate's collaboration strategy. Comments from reviewers on the plan and the candidate's response to them can be incorporated in the next review, providing continuity for both the candidate and the reviewers.

If letter writers (see below) will be asked to address specific criteria, the CV and candidate statements should be structured so that information and explanations are easy to locate and understand.

Evaluation criteria

Advancement of an individual should be dependent on demonstrating originality and independence of creative thought, having identifiable contributions to intellectual achievements, and on leadership of scholarly activities.

Typical questions asked during interim and tenure reviews are:

- Does the candidate have scholarly quality of mind?
- Has the candidate made an important intellectual advance? If so, does the community recognize the candidate for it?

- Is the candidate an effective teacher?
- Is the candidate engaged in and contributing to the academic community?
- Is the candidate on a trajectory indicating that (s)he will make significant contributions in the future?
- Is it likely that the candidate will be able to support her/his research in the future through grant support?

The evidence used to assess success differs from one institution to another and from one unit to another. However, some common factors do tend to exist for both faculty and research scientists. These criteria typically include number of publications (e.g., peer-reviewed papers, book chapters, books, reports); the number of these on which the person is first author; the impact factor of the journals in which the papers are published; citations and awards received; the grants on which the person is a primary investigator or co-investigator; and the relative prestige of the sources of funding.

In interdisciplinary cases, faculty colleagues and administrators often raise an additional set of questions:

- Why were the letter writers chosen from a different set of institutions than our usual set of peers?
- Why are the letter writers unfamiliar with some aspects of the candidate's scholarship?
- What is the significance of this area of scholarship?
- What is the standing of these journals?
- What was the candidate's contribution to multi-authored publications?
- Why did the reviewers not know everyone on the comparison list? Why is the candidate not on the top of the comparison list?
- Is the level of grant support and professional recognition consistent with other interdisciplinary scholars at a similar career stage?

It could be a standard part of the review of all interdisciplinary scholars to include a list of these FAQs along with general explanations ([Pfirman et al., 2005b](#)) so that reviewers are aware that these questions are frequently raised for interdisciplinary scholars and do not reflect any potential deficiencies of the individual candidate.

For example, interdisciplinary papers often focus less on innovation in disciplinary theory and methods and more on cross-disciplinary approaches and findings. The challenge is to be sure, in the review process, that evaluation of these very different types of publications is conducted according to appropriate criteria. Such criteria might include production of new interdisciplinary knowledge, development of new technologies or cross-disciplinary methods, or successful translation of the science for societal use. A possibility for formalizing this is for faculty to agree to shift from using "discovery" as the critical scholarly issue to assessing faculty using the broader set of Boyer criteria: "discovery," "integration," "application," and "teaching" ([Boyer, 1990](#)).

Disciplinary colleagues accustomed to higher productivity, citation rates and journal standing may need an explanation of the time it takes to develop a contribution in a new field, and the difficulty of review and publication when research spans multiple disciplines. This is not to

excuse sparse productivity or poor quality work, but rather to shift the emphasis of reviews towards intellectual achievement and leadership, rather than traditional metrics that may emphasize the number of publications. That said, the Web of Science can be used in innovative ways to demonstrate interdisciplinary impact: as one example, reviewers can look at the number of subject categories (e.g. [Porter et al., 2007](#)) represented by journals with papers that cited the research.

It is important that as the candidate moves forward in his/her career, up to and beyond tenure, that similar evaluation criteria continue to be used in subsequent reviews.

Review committees and letter writers

There may be cases where it is desirable to keep the composition of the review teams, in terms of departments, disciplines and even individuals, as similar as possible along the candidate's career trajectory, in order to provide continuity in application of criteria. In most cases, it is best if the promotion and tenure process for junior faculty and research scientists involves interdisciplinary review committees. Possibilities include: a joint committee from more than one department, one department with letters from others where the candidate has an affiliation, or – probably least desirable – separate reviews by two departments. If the review will involve several departments, it is important to state from the outset what their decision-making role will be – whether it will be independent and equal or whether one will have a subordinate, perhaps a consulting, role (such as at [University of Iowa](#)). However we reiterate that a joint committee is the most desirable form of review committee.

Promotion and continuing-status committees should be made up, to the degree possible, of individuals in similar positions or with considerable experience in working with and reviewing people in similar roles. At the minimum they should include at least one person outside the department who is familiar with the candidate's interdisciplinary work. Where a sufficient pool of such individuals does not exist, the committee should include more than one person with a similar title and set of job responsibilities, even though the actual scholarly focus may be in an unrelated area as they will be familiar with the challenges of working in an interdisciplinary field.

It is often also helpful to bring in an external reviewer who is familiar with the state of the interdisciplinary field and the candidate's scholarship at the time of tenure review. Even if it is not possible to take this formal step, someone from the interim review committees could call outside scholars to get their feedback informally so that they are better able to apprise the candidate of how the community is assessing their strengths and weaknesses.

Outside reviewers are increasingly used as letter writers for interim reviews. It is often challenging to identify reviewers who have sufficient background to fairly assess contributions generated through interdisciplinary scholarship. In selecting letter writers for emerging interdisciplinary fields, it is important to have both interdisciplinary scholars who work on closely related problems, as well as eminent disciplinary scholars who are aware of this area of research and are able to comment on its significance. The MOU or guidelines provided to the candidate for being successful (see [Stage Two](#) and [Stage Three](#)) should be included in the letter

that goes out to external evaluators soliciting an evaluation. The position announcement could be included as well.

In addition, the letter writers should be specifically asked to comment on interdisciplinary contributions and impact. This will serve as a reminder to reviewers of the differences and challenges of reviewing an interdisciplinary as compared to a disciplinary candidate. In fact, some institutions go so far as to write a special letter for interdisciplinary cases, calling attention to specifics of the case. Some schools also solicit more than the usual number of letter writers for interdisciplinary scholars in order to account for their broader range. Because some interdisciplinary scholarship includes community and stakeholder interaction, reviews may also be solicited from individuals outside of the academe. At Macalester, candidates are asked to identify any “red flags” about prospective reviewers, so that the reviewers are reviewing the candidate and not the status of the interdisciplinary field.

Stage 6: Senior Career Development

Policy Considerations for Senior Interdisciplinary Scholars

There are basically four types of senior scholar scenarios that need to be addressed by interdisciplinary policies.

1. Frequently, senior scholars engaging in interdisciplinary activities have begun their careers in more traditional single disciplinary roles and fulfilled the criteria for tenure by focusing on limited areas in considerable depth. Their interest in broadening out and linking with additional disciplines often occurs well into a career, perhaps when the pressures of meeting tenure criteria have passed or years of experience have exposed the scholar to new insights and concepts that reinvigorate the original research/scholarship path. Such scholars face the same difficulties experienced by younger scholars pursuing interdisciplinary activities, i.e. “dilution” of product impact through multiple authorships on publications and PIs on grant proposals. These issues must be addressed through improved assessment and reward policies for all scholars, regardless of rank.
2. Some senior scholars may have been engaged in interdisciplinary activity throughout their research and teaching careers. In this case, the issue is appropriate assessment during annual reviews and post-tenure review. Here too, assessment and reward policies that account for the special qualities of interdisciplinary activities must be applied. However, senior scholars may also experience the decline in research/scholarship performance that can be experienced in any field, and post-tenure review procedures are generally designed to recognize and recommend actions to reinvigorate performance. Indeed, the cross-fertilization of ideas that is a feature of interdisciplinary work may help to resolve performance issues that arise when careers become stale and lose momentum with age.
3. Many senior interdisciplinary scholars have unusual career trajectories – they may have worked for agencies, private or non-profit sectors – and come to the academy at an advanced level but without the traditional portfolio of peer reviewed publications. Strategies must be developed to identify, evaluate, and reward scholarly contributions other than peer-reviewed publications. These contributions might include, for example, significant interactions with regulatory agencies that have shaped public policy adoption and implementation, with substantial societal impact.
4. Some senior scholars are well positioned to take leadership positions in interdisciplinary programs. This can be through the creation and implementation of interdisciplinary projects, centers, or institutes, or through mentorship of younger scholars. Strong leadership qualities are not the norm and should be nurtured when they arise, particularly for programs and teams focused on complex interdisciplinary problems and issues. Leadership training is available, and should be considered for those assuming leadership of large centers and institutes. The reviews of such administrators also need to be attuned to the atypical complexities of administering an interdisciplinary faculty, program, and infrastructure.

Because of their interdisciplinary orientation, challenges faced by these senior scholars often include:

- High networking time costs and lack of recognition for building and maintaining interdisciplinary research, education and administrative structures and functions
- Tendency to get drawn into more departmental and program duties such as serving as a program chair, advisor or on review committees beyond those of disciplinary senior scholars
- Difficulty in receiving awards or salary increases compared to disciplinary scholars
- Tendency to receive fewer outside offers due to the interdisciplinary nature of work

Policy Suggestions:

Interdisciplinary senior scholars should be recognized and receive full credit (e.g., merit pay) for their interdisciplinary professional development activities, including intellectual leadership, involvement in multiple PI grants and multiple author publications, entrepreneurship in seeking non-traditional funding, mentorship of junior interdisciplinary scholars and students, extra departmental service and collaboration expectations, and publications patterns outside the norm.

We highly recommend that institutions consider **establishing special awards and resources that reward interdisciplinary activities**. Recognition should take place at the Dean's level or above (as the interdisciplinary activities may not fit into the departmental walls (as [Duke University](#) found with promotion and tenure of interdisciplinary scholars and Woodward found regarding merit pay at [University of Washington](#)). A structural approach to this recognition could be the creation of a scholarly appointment outside of departmental structures, such as the suggestion of a "[University Professor](#)" or [University of Wisconsin, Madison's Cluster Initiatives](#). Administration should explicitly encourage and protect interdisciplinary endeavors both at the individual scholar level and the department level to help remove barriers, such as at [University of Michigan](#). Additional support should be provided for travel and faculty development associated with interdisciplinary scholarship, teaching, and administration.

One way to foster and promote interdisciplinarity is to establish a "Vice Provost (or Director) of Interdisciplinary Initiatives" that oversees interdisciplinary scholars, scholarship and other activities. The position should be supported with release time and/or a stipend, depending on the level of responsibility, as well as a budget.

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Appendix I. CEDD Interdisciplinary MOU Checklist

<p>Strategic issues</p> <ul style="list-style-type: none"> Managing expectations Maintaining flexibility and contingencies 	<p>Public scholarship</p> <ul style="list-style-type: none"> Outreach Engagement Stakeholder involvement
<p>Home</p> <ul style="list-style-type: none"> Department(s)/program(s)/center(s) Space Budget (amount and split) <ul style="list-style-type: none"> Salary Start up Promotion/tenure committee Research/teaching/community balance Disciplinary/interdisciplinary balance 	<p>Teaching</p> <ul style="list-style-type: none"> Departments <ul style="list-style-type: none"> Classes Team teaching Advising <ul style="list-style-type: none"> Undergraduate <ul style="list-style-type: none"> Academic Research Graduate
<p>Mentoring and Advising</p> <ul style="list-style-type: none"> Departmental/External Formal/Informal 	<p>Campus participation</p> <ul style="list-style-type: none"> Departmental/program meetings Committees Campus programming
<p>Research</p> <ul style="list-style-type: none"> Basic/applied/theoretical/descriptive Publications <ul style="list-style-type: none"> Number Journals Citations Style: synthesis, analysis Presentations <ul style="list-style-type: none"> Annual meetings of professional societies Workshops Invited vs. volunteer On campus Support <ul style="list-style-type: none"> Funding sources Amounts Committees <ul style="list-style-type: none"> National International Leadership 	<p>Approvals:</p> <p>Department(s) _____</p> <p>Program/Center(s) _____</p> <p>Dean/Provost _____</p>

Appendix II: CEDD Annotation of Interdisciplinary CVs

Annotation of a CV is intended to provide clarity on background and creative contributions that are either unexpected or not obvious to a reader who is unfamiliar with the candidate and with their area of expertise. Since cultures vary from institution to institution and field to field, here are some ideas on what might be included in the annotations.

Educational background

Note interdisciplinary issues for example, PhD committee spanning several departments

Related experience

Note any interdisciplinary aspects of positions, including joint appointments

Scholarship and other professional contributions

Identify fields of endeavor and include a statement of scholarly goals

Annotate publication list with:

- Your specific contribution
- Significance and potential impact of the work
- Type of work, for example meta-analysis/synthesis
- Journal standing
- Why this publication venue was selected (i.e. invited paper, or journal read by policymakers/stakeholders)
- If citations and other quantitative metrics are important at your institution, perhaps include the number of citations from a “cited reference” search for non-Web of Science journals, and perhaps also conduct a subject category analysis (e.g. Porter et al., 2007)

Public/Stakeholder Engagement

- Note professional contributions to business/public good, include assessment of impact

Grant support

- Note contribution to activity, explain your role and responsibility as principal investigator or co-principal investigator
- If the funding source is unusual, note reason for using this source, perhaps also note success rate within this program area
- Note any issues related to interdisciplinary implementation that are important for reviewers to know

Awards and recognition

- Include leadership of interdisciplinary committees

Teaching and advising

- Note co-teaching where relevant, and indicate how work was shared
- Note “extra” advising or mentoring of students that is due to interdisciplinary nature of position

Service

- Separate out “extra” service that is related to the interdisciplinary nature of the position, for example serving on the search committee of another department

Appendix III: Example Joint Appointment Checklist, University of Southern California.

**UNIVERSITY OF SOUTHERN CALIFORNIA
JOINT APPOINTMENT CHECKLIST**

Optional form, available for use for joint, secondary, and courtesy appointments.

Name: _____	Title: _____ <small>(e.g., Associate Professor of Agriculture and Astronomy)</small>
Term of secondary appointment: For Assistant or Associate Professors, a fixed term must be specified. For faculty without tenure, the term should not exceed the maximum probationary period, and is subject to non-reappointment. For full Professors only, the term may be "continuous"; no formal renewal is then required and either department or the faculty member can terminate the arrangement at will. Check if continuous and indicate the start date.	From: _____ To: _____ <small>month/day/year month/day/year</small> <input type="checkbox"/> Continuous Normally, start dates should be either September 1 or January 1 and termination dates should be either December 31 or August 31.

	PRIMARY SCHOOL & DEPT./ PROGRAM	SECONDARY SCHOOL & DEPT. /PROGRAM
1. School and Dept.		
2. Teaching Load	Specify teaching load (at least half-time) : <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 10px; text-align: center;">%</div> <div style="border: 1px solid black; padding: 2px 10px; text-align: center;">.</div> <div style="border: 1px solid black; padding: 2px 10px; text-align: center;">%</div> </div> <p align="center">or</p>	Specify teaching load (up to half-time) : <input type="checkbox"/> Check here if teaching will be renegotiated each <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 10px; text-align: center;">%</div> <div style="border: 1px solid black; padding: 2px 10px; text-align: center;">.</div> <div style="border: 1px solid black; padding: 2px 10px; text-align: center;">%</div> </div> <p align="center">or</p> <div style="border: 1px solid black; padding: 2px 10px; text-align: center; width: fit-content; margin-left: auto;">course(s)/units per year</div>
3. Faculty Meetings and Voting	The faculty member attends meetings and votes.	Specify arrangements. Generally the faculty member will neither attend nor vote: Attends: <input type="checkbox"/> No <input type="checkbox"/> Yes Votes on non-personnel issues: <input type="checkbox"/> No <input type="checkbox"/> Yes Votes on personnel issues: <input type="checkbox"/> No <input type="checkbox"/> Yes
4. Merit Evaluation and Salary Changes	Merit evaluation is to be conducted by the primary department. Normally, salary increases will be determined within the primary academic unit and by regular procedures followed within that unit.	The secondary department will forward its recommendation for consideration by the primary department. Specify any other arrangements:

5. Tenure and Promotion Reviews	Tenure is held in the primary department, if the individual is tenured. The primary department conducts promotion and tenure reviews.	The secondary appointment is at the rank set in the primary department. Tenure is not held in the secondary department. The secondary department should forward its recommendation for consideration by the primary department at the time of promotion/tenure review and it will be included in the promotion/tenure dossier. If there is non-reappointment in the primary department, the secondary appointment terminates at the same time. Specify any other arrangements:
6. Office Space & Secretarial Support	Provided by the primary department.	Specify arrangements. Any space and secretarial support should reflect the faculty member's participation in the secondary department.
7. Service and Responsibilities	Major service responsibilities	Specify expectations. The total service should not exceed that expected of faculty having single appointments.

	PRIMARY SCHOOL & DEPT./ PROGRAM	SECONDARY SCHOOL & DEPT. /PROGRAM
8. Guidance/ Dissertation Comm.	Faculty member is considered 'internal'.	
9. Renegotiation	This joint appointment is subject to review and possible renewal at the end of the period covered by this agreement, or if continuous can be terminated by either department or the faculty member at will.	
10. Faculty contract and payment	The annual contract will be issued by the primary school as home department, and include the title and any contractual agreements on compensation or duties relating to the secondary appointment.	The secondary school will transfer funds to cover its share of compensation. The secondary school will not issue any separate letter or contract, but will coordinate as needed with the primary department on the wording of the annual contract.

*Signatures:

*Deans' approval is mandatory

Faculty Member: _____

Primary Dept./Program

Secondary Dept./Program

Chair: _____

Chair: _____

For Deans' Use Only

	PRIMARY SCHOOL & DEPT./ PROGRAM	SECONDARY SCHOOL & DEPT. /PROGRAM
<p>1. Budgetary Obligations</p> <p>Complete only if appointments are in different schools.</p>	<p>The primary unit is responsible for the faculty member's total compensation at the end of this agreement term, if either the secondary unit or individual decline to renew. If the term is continuous, then the specified allocation will remain in effect until either department or the individual terminates the arrangement.</p>	<p>1a. Specify the amount or percentage of salary and fringes covered by the secondary school:</p> <p style="text-align: center;"> <input type="text"/> \$ <input type="text"/> </p> <p><input type="checkbox"/> Check here if secondary school's obligation is conditional (and specify conditions in 1b)</p>
	<p>1b. Revenue from courses taught in the secondary school are _____ secondary under 1a, then _____ (specify).</p>	<p><input type="checkbox"/> Credited to <input type="checkbox"/> Split 50%-50%. Used first to cover <input type="checkbox"/> school's obligation <input type="checkbox"/> split 50%-50%. <input type="checkbox"/> Other arrangement</p>
<p>2. Indirect Cost Recovery on Grants</p> <p>Complete only if appointments are in different schools.</p>	<p>Indirect cost recovery will be: _____ by the school.</p>	<p><input type="checkbox"/> Split in proportion to the percentage of salary paid <input type="checkbox"/> Credited to primary school. <input type="checkbox"/> Other arrangement (specify).</p>
	<p>Unless specified otherwise, primary department will provide the costs of research including lab space, communications, grant management and university indirect changes.</p>	

Signatures:

Primary Dept./Program

Secondary Dept./Program

Dean: _____

Dean: _____

****Provost:** _____

Date: _____
month/day/year

**File copy with Provost's office. Provost approval is required for changed title at Associate Professor or Professor Level, otherwise filing is for information.

Appendix IV: Sample Interdisciplinary Advertisement: Macalester College

Environmental Studies – Environmental Policy and Politics

The Macalester College Environmental Studies Department invites applications for a tenure-track position in international or comparative environmental policy/politics at the assistant or associate professor level to begin Fall 2005. PhD in Environmental Studies, Political Science, International Studies, Public Policy, or comparable field required. The successful candidate will be expected to share responsibility for teaching the Environmental Studies core courses (Environmental Analysis and Problem Solving and the Senior Seminar); will assist in the development of the Environmental Studies curriculum; will offer topics courses cross listed in Environmental Studies and Political Science; and will have the opportunity offer one additional course per year in the Political Science Department. The successful candidate may also be expected to contribute to the broader College curriculum by offering courses that support the First-Year Seminar program or other interdisciplinary programs such as American Studies, International Studies, or Women's and Gender Studies.

Environmental Studies – Environmental History

The Macalester College Environmental Studies Department invites applications for a tenure-track position in environmental history at the assistant or associate professor level to begin Fall 2005. PhD required. The successful candidate will be expected to share in the teaching of core courses for Environmental Studies majors (Environmental Analysis and Problem Solving and the Senior Seminar); will assist in the development of the Environmental Studies curriculum; will offer topics courses cross listed in Environmental Studies and History; and will have the opportunity to offer one additional course per year in the History Department. The successful candidate may also be expected to contribute to the broader College curriculum by offering courses that support the First-Year Seminar program or other interdisciplinary programs such as American Studies, Humanities and Cultural Studies, International Studies, or Women's and Gender Studies.

The Environmental Studies Department emphasizes an interdisciplinary approach to the study of environmental issues. We seek applicants who are committed to excellence in teaching and research in an interdisciplinary, liberal arts setting. We are especially interested in candidates committed to advancing the College's mission of educational excellence with a special emphasis on multiculturalism, internationalism, and civic engagement. We strongly encourage applications from women and minority candidates. Send letter of application, CV, three letters of reference, examples of recent professional work, pedagogical statement, statement of research interests, and student evaluations to Dr. Brett Smith, Acting Chair of Environmental Studies, Macalester College, 1600 Grand Avenue, St. Paul, MN 55105. Applications received by 15 October 2004 will receive first consideration.