

SCHOLARSHIP ABOUT INTERDISCIPLINARITY: SOME POSSIBILITIES AND GUIDELINES

by

Marcia Bundy Seabury
University of Hartford

Abstract: This article proposes some guidelines for scholarship about interdisciplinarity. They are both inductively and deductively generated, drawing on a collaborative book project at the author's institution as well as on Glassick, Maeroff, and Huber's *Scholarship Assessed*. The intent is to encourage more faculty to write about interdisciplinarity for scholarly publication, propose some suggestions for the process, and consider how this scholarship might be evaluated.

Given the enormous diversity of interdisciplinary practices in higher education and of the scholarly writing based on them, is it possible to propose a set of guidelines for some of this writing that offers principles of good practice but also acknowledges and encourages the enormous variety and creativity of such work? The comments to follow attempt this combination. They arise from a foray by faculty at my university into interdisciplinary scholarship. They speak to questions facing faculty across the country: at a recent Association for Integrative Studies (AIS) conference session on scholarship,¹ for example, attendees eloquently raised a variety of concerns about whether to pursue scholarship exploring issues of interdisciplinarity, how to do it, and how to know whether it is good. The intent of this guidelines experiment is thus at least threefold:

- to encourage faculty to write about issues of interdisciplinarity for scholarly publication.
- to propose some suggestions for the process.
- to consider how this scholarship might be evaluated.

The intent is to be generative and provocative, not constraining or prescriptive.

The Need

The nationwide increase in interdisciplinary programs and courses both in general education and in the major has been well documented. Faculty and administrators widely profess belief in the value of “answering a question, solving a problem, or addressing a topic that is too broad or complex to be dealt with adequately by a single discipline or profession,” Klein and Newell’s definition of interdisciplinary studies (1997). But we also know that “interdisciplinary” can become something of a buzzword, more easily bandied about than understood. As we acknowledge the complexity of the issues we want our students to confront, and as we busily design more and more interdisciplinary curricula and courses to address them, we owe it to ourselves and our students to understand interdisciplinary processes more fully. In a great many cases, however, faculty’s interdisciplinary teaching does not connect directly with their scholarship; their own convictions or their institution’s “nudges” draw them into interdisciplinary teaching, but they continue to research and publish exclusively within their own disciplines. This dichotomy can create a lack of coherence in faculty activities, and further the sense that the demands of general education are tangential to ongoing professional activities, while also leaving interdisciplinary processes unexamined.

In many other cases the interdisciplinary teaching of faculty does connect directly with their scholarship: they may, for example, teach environmental studies or women’s studies and publish in journals in these fields. But in such cases interdisciplinary processes may or may not come into focus. Further, articles that do explore interdisciplinary processes typically appear in journals of particular interdisciplinary fields. Even as many faculty are interested in important border crossings, the dispersal of these writings in specialized outlets and to specialized audiences means that conversations about border crossings ironically take place in relatively enclosed territories. Weimer (1993) has similarly noted that much scholarship about teaching and learning would be useful to faculty across disciplinary boundaries, but

faculty do not typically read or write across those boundaries. Even so, much scholarship based on interdisciplinary work that appears in journals of particular disciplines or interdisciplines could be useful to faculty more broadly. We can learn from each other not only across disciplines but also across interdisciplinary fields as we talk to each other in professional as well as informal venues about interdisciplinary processes. If we believe in and are to justify large-scale curricular ventures on the basis of their integrative nature, these conversations become essential. This article is intended as a contribution to such conversations.

The Higher Education Context

Several intersecting developments in higher education make this contribution particularly timely. Already noted above is the ongoing growth of interdisciplinary studies nationwide, as documented in the second edition of *Interdisciplinary Undergraduate Programs: A Directory* (Edwards, 1996), with general education by far the most common type of undergraduate interdisciplinary program, prominent at both public and private institutions. Accompanying this trend is the growth of the so-called “First-Year Experience,” now the focus of its own professional organization. Part of this organization’s impetus is to bring first-years into integrated rather than fragmented experiences, for example, through linked courses or curricular/co-curricular connections; a greater understanding of ways to provide certain kinds of integrative experiences can assist these efforts. The growth as well in interdisciplinary graduate programs (see the new AIS online *Directory of Interdisciplinary Doctoral Programs*) means that some faculty will come to undergraduate teaching with background in discipline-crossing content areas, if not necessarily in interdisciplinary processes. But the former growth still clearly entails a great many discipline-trained faculty doing interdisciplinary teaching. Meanwhile, of course, calls for more discipline-crossing, integrative education continue in prominent publications ranging from the Boyer Commission’s (1998) study on undergraduate education at research universities to the Association of American Colleges and Universities’ three-volume *Academy in Transition* series and then *Greater Expectations* (2002), with its now well-known emphasis on creating “intentional learners.”

A second development during recent years, paralleling the first, is a series of calls for expansion of the notion of “real” scholarship. The Carnegie Foundation’s publication of Boyer’s *Scholarship Reconsidered* (1990) and Glassick, Huber, and Maeroff’s follow-up volume *Scholarship Assessed*

(1997) have spurred a great deal of attention to expanded definitions of scholarship and ways of evaluating that scholarship (also see Diamond & Adam, 1995, 2000). Early in his analysis, Boyer notes increasing divisions among disciplines and departments and asks whether scholarship can be redefined to give “more recognition to ... integrative work” (p. 2). He urges that “a broader range of writing,” including writing for non-specialists, be given more recognition and evaluated with rigor (p. 35), and adds that “those who help shape a core curriculum or prepare a cross-disciplinary seminar surely are engaged in the scholarship of *integration*,” activity that should be recognized and rewarded (pp. 35, 36). Writing that explores issues of interdisciplinarity can arise within any of the four categories of scholarship Boyer discusses – the scholarship of discovery, integration, application, or teaching. Writing for an audience of those interested in boundary crossings can be a part of the broadened range of writing Boyer recommends.

The growing attention to faculty careers and rhythms in Boyer’s volume and elsewhere has included consideration of stages within a faculty member’s career. This flexibility bears particular relevance to faculty engaged in interdisciplinary activities, since their interests and commitments may cause involvement in these activities to wax and wane in relation to involvement in more specifically disciplinary ones (acknowledging as well the increasing permeability of disciplines). Thus writing about interdisciplinary processes might emerge at quite different stages. One variable can be age: Younger faculty pursuing tenure and promotion may be interested in ways to frame the interdisciplinary work they are already doing so as to make it publishable. More experienced faculty used to publishing within their specialties may have gained the broader experience and vision to put those specialties in larger contexts, so that as they teach, research, or ponder beyond their usual territory, their publications may expand in range.

Paralleling the drive for more coherence in undergraduate education during recent decades is Boyer’s emphasis on coherence within a faculty member’s professional activities. As faculty increasingly engage in interdisciplinary activities, a part of coherence for faculty can clearly be connectedness between their interdisciplinary teaching or administering and their scholarship, with interdisciplinary scholarship fully encouraged and accepted. The only way for that to happen is for faculty themselves to view interdisciplinary scholarship as being fully as rigorous as disciplinary research, and for faculty evaluation processes to follow suit. Faculty will not spend time doing scholarship they or their professional communities view

as “soft” or second-class, concerns addressed further in subsequent sections of this paper.

A third development, directly related to Boyer’s emphases, is the emergence of a more developed and coherent conversation across disciplines about teaching and learning. The Carnegie Academy for the Scholarship of Teaching and Learning (CASTL) project has been encouraging a scholarship of teaching and learning (acronym SOTL) wherein faculty across the disciplines engage in a more conscious exploration of those processes within their areas of expertise. Until recently, faculty have worked in relative isolation to produce such scholarship. Weimer (1993) comments that faculty who have written about teaching have often seemed unaware of a tradition of scholarship to which they are contributing. Little wonder such pieces have been given less weight at promotion and tenure time. She argues that such discussions need not take place in a vacuum, oblivious of context; every article need not offer an exhaustive literature review and ponderous footnotes, but “a recognition is in order.” The Carnegie Academy’s website and Hutchings (2000) offer useful introductions to this emerging scholarship. Scholarship that explores interdisciplinary processes and the scholarship of teaching and learning, each of which can be seen as a subset of the other, clearly face similar challenges. Faculty may be stretching in some new ways, asking some new questions, seeing through new lenses. At the same time, they can be bringing to bear the rigors of their training. The new scholarship needs the strength, vitality, and rigor of the scholarship to which they are more accustomed.

A fourth significant recent development in higher education is the growth of the professional literature of interdisciplinary studies (IDS). A great many faculty have written and published articles about interdisciplinary experiences, as about teaching and learning more broadly, without any reference to the literatures of IDS. And indeed, as Newell (1998) has pointed out, that literature has been scattered, not easily accessible, and often contradictory. Faculty can now draw on a more developed tradition and join a more coherent conversation (see the list of publications on the AIS website for a sample, and Newell’s 1998 anthology for some exemplars). Harald Sandström, a contributor to the book project described next, speaks for many of us in commenting that he had been doing “interdisciplinarity by accident”; he found himself teaching and writing better as he became aware of issues raised in the interdisciplinary literature.

The Project

The Association for Integrative Studies aims to promote an interchange of ideas among scholars and administrators on a wide variety of issues related to interdisciplinary study. It strives as well to “establish standards of excellence for the conduct of integrative studies in both teaching and research.” Each of these aims becomes especially relevant to faculty and administrators across the country as their work not only draws them across disciplinary boundaries but also becomes part of their professional dossiers. This guidelines project follows upon recent AIS work to formulate suggestions for good practice: in particular, a “Guide to Interdisciplinary Syllabus Preparation” (AIS & Institute in Integrative Studies, 1996) and more recently *Interdisciplinary Studies in General Education Guidelines* (Fiscella, Jacobsen, Klein, Seabury, & Field, 2002). The project is informed by these reports, as well as Newell’s (1998) “Professionalizing Interdisciplinarity: Literature Review and Research Agenda” and a variety of voices from the AIS community of scholars. As a fuller sense of the literature of interdisciplinarity emerges, faculty should be able to use the Association for Integrative Studies and its various publications as added voices to validate their work’s contribution to a national conversation.

The guidelines proposed here have been both inductively and deductively generated. They draw on the experience that thirty colleagues from my university and I shared of contributing collaboratively to the scholarship of interdisciplinarity (Seabury, 1999a).² The focusing question for our book project was, “How do interdisciplinary courses help to build students’ integrative skills?” We engaged – both individually and collectively, and with varying degrees of success – in a lengthy process of attempting to stay focused on issues of interdisciplinary process. We attempted to connect our teaching with the emerging literature of interdisciplinary studies, and we discussed with each other what we found helpful and less helpful within this literature. We welcomed models, some of which we found in prepublication copies of Newell’s (1998) anthology. But faculty also asked for guidelines of some kind to ease the transition to writing for a different purpose and audience than those to which they were accustomed. As we moved forward, we received extensive feedback at multiple stages from a College Board advisory committee, editors, and an anonymous outside reviewer. In the process not only did we learn, but also it became clear that the principles underlying this work and the feedback we received could be of use to others.

A preliminary formulation of guidelines turned out, not surprisingly, to intersect with a nationally generated set of guidelines for good scholarly practice more broadly. Glassick, Huber, and Maeroff's *Scholarship Assessed* (1997) is based on research about criteria used by 51 granting agencies, 31 scholarly journals, and 58 university presses. The authors note that the key to the commonalities within the guidelines of these various sites is "the process of scholarship itself" (p. 24): whether the scholarship is primarily of discovery, integration, application, or teaching, its quality can be judged in terms of clear goals, adequate preparation, appropriate methods, significant results, effective presentation, and reflective critique (esp. see summary, p. 36). Given the natural connections, I have reformatted the inductively generated guidelines to draw on the nationally generated list. In a few places the listing applies wordings from the Carnegie volume.³

The resulting guidelines are designed to gather some issues of interdisciplinary scholarship into a useful form for busy faculty entering it, rather than to break new theoretical ground. Thus experienced interdisciplinarians will find familiar and sometimes contested issues, presented within what became an experiment to see whether application of the Carnegie guidelines could assist in bridging the gap between the theoretical literature of interdisciplinarity and the widening circle of practitioners. With regard to examples: Since these guidelines arose out of a project involving faculty across the disciplines discussing pedagogy in interdisciplinary courses, examples will be drawn from that kind of scholarship, including our chapter drafts and some articles reviewed for *Issues in Integrative Studies*. Two assumptions accompany the choice of examples: first, that these represent only a subset of the kinds of articles welcomed for *Issues in Integrative Studies*, as indicated in the Call for Papers in each edition of the journal; second, that the points made should apply to a wider range of scholarship, including scholarship based on integrative research, the work of interdisciplinary project teams, or other aspects of interdisciplinary education. This second assumption is justified in part by the wide research base of *Scholarship Assessed* with which the points are correlated, and by the intent of this article to be a step toward further discussion.

Let us take a moment for definitions before proceeding. This article assumes Klein and Newell's widely-used definition of interdisciplinary studies excerpted earlier:

interdisciplinary studies [IDS] may be defined as a process of

answering a question, solving a problem, or addressing a topic that is too broad or complex to be dealt with adequately by a single discipline or profession. ... IDS draws on different disciplinary perspectives and integrates their insights through construction of a more comprehensive perspective. (1997, pp. 393-94)

“Scholarship” itself is, of course, a contested term and can be defined more narrowly or more broadly (e.g., see Diamond & Adam, 1995, 2000). This article works with a definition of scholarship as a contribution to knowledge that is “*public, susceptible to critical review and evaluation, and accessible for exchange and use by other members of one’s scholarly community*” (Shulman, 1998, p. 5). The article will focus on scholarly writing for publication among peers, addressing issues of taking an idea, a brown-bag lunch contribution, or a conference presentation and turning it into a publishable journal article. But the issues raised, if applied to other venues or other audiences, could assist a range of conversations.

By the “scholarship of interdisciplinarity,” this article means a contribution to knowledge about interdisciplinary activities that explicitly addresses their interdisciplinary features. One could, of course, write about such activities in other ways. Issues of audience and purpose are the keys. A biologist addressing a journal audience of health educators might explore ways in which non-science majors can learn the basic science involved in the transmission of an epidemic; an interdisciplinary course focuses the discussion but interdisciplinary processes are not necessarily explored. Another article, which could address a wider range of readers, might draw on the same site to examine service-learning projects intended to guide students to integrate concepts from multiple disciplines.

Thus scholars may well want to consider multiple publications coming out of a particular inquiry, with varying audiences and purposes: perhaps one for an audience within the writer’s subject area and another for an audience interested in interdisciplinary processes (such as this journal), emphasizing interdisciplinary aspects of the inquiry. Explicitly raising issues of interdisciplinarity opens up additional questions for examination.

This article focuses on the latter approach. Discussion of issues of interdisciplinary process will often be of interest to audiences across the disciplines – audiences interested not only, or even not primarily, in the interdisciplinary content area discussed, but also in interdisciplinary study more broadly. Indeed, a key aim of this journal and of AIS as an organization is to “identify common elements in diverse conceptions of interdisciplinary

study and research” and common elements in diverse practices, in addition to exploring significant differences and distinctions. However, the suggestions in this article, which promote more explicit discussions of interdisciplinary processes, could assist the conversation within journals in particular disciplines and interdisciplines as well. A great many articles, for example, still use “interdisciplinary” to describe such activities as faculty in multiple disciplines meeting to discuss a particular pedagogy – forums where integration of disciplinary perspectives is not at issue – or seminars in which students hear a series of speakers from different disciplines. Terms, as Berthoff (1981) emphasizes, are ways of seeing, ways of opening up the concepts and questions of an area of inquiry (pp. 116-17). As the term “interdisciplinary” is better understood – for example, as it differs from “multidisciplinary” (additively setting perspectives side by side) – the conversation in journals of particular content areas can advance and new issues unfold.

Possibilities and Guidelines

Some proposed seed questions for scholarly writing about interdisciplinarity are summarized in Table 1 and discussed further below.

TABLE 1

Some Guidelines for Scholarship About Interdisciplinarity

A. Goals

- Does the article highlight interdisciplinary aspects of the inquiry? If the article is in essay form, does it feature an argument about and analysis of such aspects: i.e. does it have a clear thesis that relates to the interdisciplinarity of the site/activity discussed? Does the article identify important questions related to interdisciplinary study? [The authors might consider the possibility of multiple, varying publications from a particular interdisciplinary activity – one intended for an audience of experts in the content area discussed, another for a broad academic audience and featuring issues of interdisciplinary study.]

B. Preparation

- Is the article grounded in the professional literature(s) relevant to its focusing question? Has the author(s) given careful thought to what those literatures are? Is the scholarship current?
- Does the article draw on (and/or extend, question), as useful, the growing professional literature of interdisciplinary studies itself? Does it draw on (and/or extend, question) a clear conception of interdisciplinarity?

TABLE 1 *continued**C. Methods*

- Does the article apply a methodology(ies) appropriate to its key questions (assuming that interdisciplinary inquiry can be conducted and communicated in a wide variety of modes)? Does the article draw on kinds of evidence appropriate to its claims (a rich variety of kinds possible in interdisciplinary studies, quantitative and qualitative)?
- Does the article give explicit attention to interdisciplinary processes, rather than just summarizing intentions or sequential disciplinary contributions? Does it consider how the activity's analytical framework draws on perspectives from multiple disciplines? Does it consider how, specifically, these are integrated to form a more holistic understanding? e.g., does it unpack its abstractions and generalizations, so that any such terms as "work together," "bring together," "explore," "integrate," or "synthesize" are made concrete and problematized?

D. Results

- Does the article clarify how it advances existing interdisciplinary practice/theory, how it helps its readers to re-see? Does the article contain a productive interplay of interdisciplinary theory and practice? i.e., does it explore not only its abstractions, but also the implications of its details (using local experience to probe issues of interdisciplinarity that extend beyond the local and particular)?
- Does the article suggest what future questions and research about disciplinary or interdisciplinary studies arise from its findings? e.g., does it serve as an impetus for ongoing exploration of interdisciplinary processes?

E. Presentation

- For publication in a journal with broad readership, is the article written so as to be of interest to readers with diverse backgrounds, from multiple disciplines and interdisciplines? Is it written so as to be understood by educated readers across the disciplines, with needed terms and concepts defined?

F. Critique

- Does the article offer reflection and evaluation of the work discussed, including exploration of assumptions and limitations not only of disciplinary contributions but of its interdisciplinary approaches? Does the article draw on an appropriate range of evidence for its evaluation, including multiple perspectives as appropriate?

A. Goals

As indicated in the preceding definition, a scholarship of interdisciplinarity focuses clearly on interdisciplinary aspects of the activity discussed, whether program, course, pedagogy, research, or project. What difference does it make that the activities discussed are taking place in an interdisciplinary rather than in a disciplinary context? The scholar's argument features issues of interdisciplinarity in an explicit, self-conscious way, acknowledging that other kinds of arguments might be featured in a paired publication arising from the same activity. If the article is in essay form, it typically has a clear thesis related to those issues rather than presenting a straight summary or report of the activity (but also see section C on the possibility of diverse methods and genres).

The article should identify important issues of interdisciplinary study. Glassick, Huber, and Maeroff (1997) note that "a master scholar is a master question-raiser," and that basic to graduate training is "learning how to see and state an intellectual problem" (p. 26). The first part of this comment relates well to interdisciplinarians, driven as they so typically are by the big, messy boundary-crossing questions of our world. The second part of the comment can be more problematic, since so many faculty engaged in interdisciplinary activities are and will continue to be trained within traditional disciplines. Within conference presentations and publications about interdisciplinary courses and programs, discussions have often been more descriptive than exploratory of issues of interdisciplinarity. What provocative questions might a newcomer to this scholarship put to interdisciplinary studies? Many will arise from our particular content areas; others from issues of teaching and learning, or course and curriculum development and support. The structure of the definition of IDS cited above offers newcomers two kinds of questions basic to IDS: exploration of ways of drawing on disciplines and of integrating their insights. Newell's "Professionalizing Interdisciplinarity" (1998) provides accessible, more detailed lists that formulate questions within the areas of definition, assumptions, consequences, and the hows and whys of drawing on disciplines and working toward synthesis.

Out of the context of an effective course, for example, one might explore what criteria are appropriate for evaluating student projects in an interdisciplinary course. Will a single discipline often provide the criteria? Or in what ways can there be a negotiated agreement among team members on appropriate interdisciplinary criteria? How can students become aware of and receive coaching toward success with those criteria? Scholars can learn

from emerging best practices in the scholarship of teaching and learning by examining why and how an interdisciplinary approach works rather than by only summarizing it.

Indeed, since interdisciplinarity entails a *process* of inquiry, pursuing questions about process can especially help to advance the discussion. Process entails moment-to-moment interactions as well as interactions over the course of a project or semester or more. A few examples: To what extent and how do students become aware not just of the findings of the different disciplines but also of how those disciplines work, how they look at the world, their underlying assumptions, and their limitations, as Newell has often recommended? To what extent and in what ways can disciplinary perspectives be made explicit and explored as students compare and contrast different viewpoints and positions found in assigned readings? To what extent and how do students identify and compare the different perspectives that shape the players' strategies and actions in a particular public conflict under study? What can we learn about the nature of interdisciplinary activity, or teamwork, or student learning from multiple offerings of a particular course? To what extent and how should reflection on interdisciplinary processes be made an ongoing explicit activity?

The "Guide to Interdisciplinary Syllabus Preparation" (AIS & IIS, 1996) can be used to suggest issues about teaching and learning for scholarly inquiry, including issues of handling "disciplinary methodologies and epistemologies," "recognizing similarities and differences in [the disciplines'] interpretations of data, methodologies, or assumptions," and "collaboration between students and faculty in forging a synthesis/integration." Looking further, discussions of interdisciplinary education have centered on teaching, on instructional delivery, with less focus on the learner. Nelson's (2000) listing of some of the genres of the scholarship of teaching and learning could serve as stimuli for further scholarship of interdisciplinary teaching and learning: for example, reports on particular classes that include qualitative or quantitative inquiry "before & after"; "reflections on several or many years of teaching experience, ... informed by other scholarship on teaching" (e.g., including "integration of larger frameworks with classroom and curriculum practice"); "comparisons of courses & comparisons of student change across time"; formal research; and "summaries and analyses of sets of prior studies." Significantly, of the five main categories with their thirteen subsets Nelson lists, the scholarship of interdisciplinary teaching and learning has centered on the first subcategory: the teacher's own impressions that "it worked!" Faculty can explore other kinds of recurring questions in the scholarship of teaching

and learning, including what learning processes are like, what teaching and learning processes can become, and what new conceptual frameworks can shed light on them, as suggested in Hutchings' (2000) taxonomy of questions (pp. 4-5). Linkon's (n.d.) online portfolio offers an example-in-process of exploration of student learning in interdisciplinary courses.

B. Preparation

Scholarship about interdisciplinary processes has often emerged in relative isolation from relevant literatures in which it would be appropriately grounded, as noted earlier. Faculty may, for example, write with enthusiasm about an experience they have had with interdisciplinary teaching, a sharing of ideas and experiences that definitely has its place in the academy and in the national conversation. But when faculty members want to take such sharing of ideas to the next level, treating it as scholarship on a par with scholarship within their own disciplines, it needs to be grounded in the relevant professional literatures, so that it gives the clear sense of contributing to an ongoing conversation rather than offering an isolated voice unaware of the conversations around it. This "contextualizing" can, of course, be more complicated for the scholarship of interdisciplinarity than for the scholarship of discovery within one's discipline, where the needed research may be more clearly defined. The extent to which the writer needs to know the literatures of the constituent disciplines, the literature of the interdiscipline under discussion, the varying literatures of teaching and learning, and more – and particular intersections among these – will be determined by the focusing question the writer is asking. In any case, this research should be current.

Possible ways of addressing part of this need to contextualize one's argument are, of course, co-authoring across disciplines, with each collaborator responsible for bringing the appropriate areas of her/his disciplinary literature to bear on the specific focus at hand, or collaborating more informally, with team members or colleagues contributing their suggestions from the relevant literatures. Cross-disciplinary campus CASTL (Carnegie Academy) groups have done a great deal to provide bibliographies and informed discussion of the recent scholarship of teaching and learning.

In particular, the writer should be aware that there is an emerging literature of interdisciplinary studies itself (see, e.g., website bibliography cited above). An anonymous reviewer of our collaborative book noted that we have had "isolated but self-reflective practitioners each attempting to

start a conversation. Now there is a genuine discussion underway; writers should position what they have to say with respect to the substance of that ongoing professional discussion.” Does all of this contextualizing raise yet another hurdle, and perhaps a too-high one, for faculty who want to share their interdisciplinary work? Not if faculty want to share ideas in more casual modes, both local and national, in person, in print, or on the web (as one attendee commented at an AIS conference session, “I just want to write a piece describing my program”). And, on the other hand, also not if faculty want to do published scholarship at the level to which they have become accustomed in their disciplines. The resultant awareness will help us see more, see through new lenses, as we see more clearly what in specific we are adding to the national conversation.

As contributions to the scholarship of interdisciplinary studies gain the grounding that advocates of the scholarship of teaching and learning also seek, the Carnegie Foundation’s argument for a broadening of our sense of “real” scholarship will become more fully realized. True, life is too short and time too limited for a person to give full attention to each of multiple intellectual communities. But now that there is an increased sense of a professional community of interdisciplinarians, and that its literature is becoming easier to locate, faculty can follow a rhythm of activity that takes them into the literature of interdisciplinarity (and perhaps the literature of teaching and learning as well). They can address how their interdisciplinary inquiry connects with or challenges what they find in the professional literature. As scholars expect within their disciplines, and as Weimer (1993) urges that we expect of the scholarship of teaching and learning, their interdisciplinary work can be presented within “a context and a history.”

A part of positioning one’s writing within an ongoing conversation is, of course, awareness of the language of that conversation. Contributions to the scholarship of interdisciplinarity need to be grounded in a clear conception of interdisciplinarity and/or complicate or contest common understandings of it. Similarly, the concept of multidisciplinary (plus perhaps cross-disciplinary or transdisciplinary) can be useful to advance the conversation, either in existing or revised definitions (see, e.g., AIS & IIS, 1996). These sometimes strike newcomers to IDS as unnecessary jargon, but just as each of our disciplines contains terms that advance its conversations, terms to discuss interactions among disciplinary perspectives can advance IDS conversations. In particular, awareness of the complexity in the literature of terms like “integrate,”

rather than simply use of those terms, is essential, as discussed in the next section.

C. *Methods*

Even as disciplinary scholarship in many fields has become open to an increasing variety of methodologies and of genres of presentation, all the more so interdisciplinary inquiry might be conducted and communicated in a wide variety of modes: ethnographies, dialogues, comparative studies, statistical analyses, theoretical analyses, case studies and analyses, longitudinal studies, textual analyses, hypertext, and more. Thus kinds of evidence can vary greatly, from qualitative to quantitative, from interviews to close analysis of student work (e.g., see Bass, 1999, pp. 7-8).

Many prominent voices in interdisciplinary studies have come from social science backgrounds, with humanities perspectives also prominent. Even the choice of reference form – currently APA for this journal – sends a message about what approaches contributors may find most natural. Conversations among Carnegie Scholars have raised the question of whether “we all have to be social scientists” to do the scholarship of teaching and learning with integrity – with the answer, “No” (Huber, 2002, p. 37). Many faculty are neither trained nor interested in social science traditions. Faculty can draw on the diverse methods and genres of their disciplinary expertise, from experimental designs to discourse analysis (e.g., see Kelly, 2000; Hutchings & Shulman, 1999). Rigor, as CASTL scholars are concluding, need not always be based on the sciences (e.g., Phillips, 2000; cf. Conrad & Gunter, 2000) – though, on the other hand, bringing such training to discipline-crossing scholarship can yield rich insights. A part of the potential richness of the scholarship of interdisciplinarity is the diversity of approaches appropriate to explore it.

Particularly with regard to teaching, “methods” as used in *Scholarship Assessed*, seems to refer a bit ambiguously both to the activity itself and to the activity of writing about it. On the latter, Weimer (1993) comments that faculty have typically used the single perspective of the reflective practitioner. That perspective has likewise dominated the scholarship of interdisciplinary teaching and learning and did, as well, throughout our collaborative book. Other modes of data gathering could only expand the potential of interdisciplinary scholarship. Since a key to much interdisciplinary process is conversation and teamwork across disciplinary boundaries, we will gain all the more from including multiple voices in the

data gathering, as appropriate. Until recently, students in particular have typically been silent voices in the literature of interdisciplinarity, as Fried & McCarthy (1999) point out. “Presentational” language dominates: “we presented ...,” “we showed students ...,” “we used ...,” “we looked at ...,” “we found ...” Linkon (2000) aptly expresses surprise, upon setting out to explore students’ understanding of interdisciplinarity, that “interdisciplinary studies [hadn’t] already done the kind of work I’m imagining”: she found many teaching stories but little about “what’s going on for students” (p. 64; cf. Vess, 2002).

Scholars discussing interdisciplinary methods within an activity – whether teaching, research, or application – are often not able to draw on a common understanding of what a particular methodology entails as they can within many disciplines. That can yield a good deal of fuzzy talk. When writing about an innovative course for our collaborative book, for example, we found it all too easy to assert “faculty and students took an interdisciplinary approach to learning” and move on. What did that mean, in specific, in this particular case? Granted, the topic under study was complex. And yes, students read material addressing it from the perspectives of multiple disciplines. But to what extent and in what ways were students moving beyond multidisciplinary study to integrative, interdisciplinary study? Faculty teams found themselves saying such things as “We created a common middle ground,” or “we merged disciplinary insights toward a common goal.” Such statements do not connect easily to either theory or practice.

Indeed, unexplored abstractions and generalizations easily proliferate in the literature of interdisciplinary studies, as Miller (1999) charges they do in the AAC&U’s Academy in Transition series. As IDS matures, an important step will be scholars’ unpacking of these high-level wordings and statements. Authors can work to be more explicit about what they are doing. This process of unpacking abstractions and generalizations about interdisciplinarity, when carried through consistently, will give more complexity and clarity to ongoing local and national conversations. Some further examples of kinds of statements that call for concretizing: “The course integrates ideas from diverse readings.” “As instructors we model the interdisciplinary process.” “Through study of x, y, and z, students develop higher-order thinking skills.” How, in each case? And how do we know? “We took a strenuous and methodical look at...” What specifically, in terms of interdisciplinary process, does strenuousness mean in this case? What method?

Discussions can thus move beyond the purely sequential (“and then we... and then we...”) to a more detailed presentation of drawing upon and

integrating disciplines. For example, disciplines are complex entities focusing on “a historically linked set of problems” and distinguished in part by “the questions they ask about the world, by their perspective or world view, by the set of assumptions they employ, and by the methods which they use to build up a body of knowledge (facts, concepts, theories) around a certain subject matter” (Newell & Green, 1982, 25; see, e.g., Klein, 1996, and Salter and Hearn, 1996, for extended discussions of the multiple dimensions of disciplines). In a given interdisciplinary inquiry, what in particular are faculty and students bringing together? And how are they doing so? Many faculty hear these as rather obvious questions, but the questions often proved quite difficult during our book project, entailing a level of reflection beyond what the typical team had done during their planning of course topics and readings. In a draft of our book, for example, we wrote, “We brought to the table different theoretical models”; but are the contributions of the disciplines in a particular context conflicting or complementary? In what ways? And, acknowledging that the formation and operation of a multidisciplinary team is no guarantee that a course becomes interdisciplinary (“Members of the team introduce students to various frameworks for analyzing ...: first, ..., ..., and ...”), how in practice does the course move beyond juxtaposition to integrative approaches? How are students integrating the diverse perspectives of the course to form a more holistic understanding? In particular, does the activity’s analytical framework bring together perspectives from multiple disciplines, a key to interdisciplinary rather than cross-disciplinary work? Again, see Newell (1998) for further discussion of the relationship of disciplines to interdisciplinary activity, including issues of defining disciplinary contributions, exploring interactions, and maintaining disciplinary integrity while also moving beyond disciplines; and of the possible integrative approaches of “both/and thinking, dialectical thinking, metaphor construction, and metalanguage development” (p. 560; also see AIS & IIS, 1996).

D. Results

Conference attendees and journal readers find appeal, to be sure, in presentations of courses, programs, projects. But ultimately they are interested in how these advance existing interdisciplinary theory and/or practice. How do they help their readers to re-see? Does the presentation help us explore our assumptions, either disciplinary or interdisciplinary? develop our theories of interdisciplinary studies? improve our practices? understand the problems and potentials of different types of integration? or...?

The emerging literature of interdisciplinarity needs further productive interplay of theory and practice. As noted above, abstractions and generalizations about process need to be explored rather than assumed. “The final project measured students’ ability to synthesize.” What results specifically allowed you to judge that? What did successful attempts look like? How well did students understand what was expected of them and what they had/had not accomplished? Such statements, then, can serve not as conclusions about an activity but as openers to further discussion. Former *Issues in Integrative Studies* editors Jay Wentworth and David Sebberson have indeed commented that they often found themselves wishing writers would use their conclusions as their starting point.

Conversely, many discussions of interdisciplinary studies remain stuck in their details, whether of research, curricular, administrative, or pedagogical practice: “At my school we . . .” Conference attendees can be left with the sense of “Here’s another interesting course/program. And another. And another.” Sharing such information can be a welcome and useful function of many forums, such as the *Association for Integrative Studies Newsletter*. But as faculty move toward more effective conference presentations and toward preparing a conference presentation for publication, they can also tease out the implications of their statements, using local experience to explore issues of interdisciplinarity beyond the particular and the local. What assumptions underlie the approach they discuss? What are its implications? What understanding of interdisciplinary practice and/or theory emerges from the immediate example and local context? How do the specific examples “inform, challenge, render more precise or more nuanced, or probe the boundaries of the incautious generalizations, fuzzy theories, and imprecise abstractions that abound in the literature?” – to quote a reviewer of our book. Practice informed by theory, in interdisciplinary as well as in disciplinary inquiry, will lead not only to a stronger literature but to stronger practice.

A few further comments about that combination, with implications that cross the other categories of these guidelines: Faculty diverge on which part of the theory/practice spectrum they would emphasize within their own disciplines. Some object to particular journals in their fields as overly abstract and jargon filled, while others argue against the “soft” scholarship of practice uninformed by theory. Even so, some faculty strenuously object that they neither want to nor have the time to become expert in a new “field” of interdisciplinarity, with its own perceived jargon and its abstract analysis of various forms of disciplinary commingling – especially as they are already stretching themselves across disciplinary boundaries to address particular

content to which they are committed. Others object to too many unreflective “show-and-tell” presentations and publications that do little to advance the national conversation.

Given the ongoing differences within our disciplines, we should not expect to find a balance within the scholarship of interdisciplinarity that will suit all. While work pushing both ends of the spectrum will be useful to many, conference attendees will continue to chafe at both ends, some objecting that particular presentations are abstruse and unenlightening, others objecting that certain sessions are mired in “here’s what we did” as if the presenters were the first ever to think of inventing an interdisciplinary course or program. AIS membership surveys over the years have revealed similarly mixed requests that *Issues* move further toward one end of the spectrum or the other.

Getting stuck at either a high or a low level of abstraction should be seen as predictably problematic. Semanticist S.I. Hayakawa (1972) notes that “whether at higher or lower levels, dead-level abstracting is, as [Wendell] Johnson says, always dull” (p. 162). A reviewer of our book commented similarly that “too little of the literature moves back and forth between theory and practice, the abstract and the concrete.” Doing more to develop theory informed by practice, as well as practice informed by theory, will advance the now both national and international conversation. Each can continue to connect with and test the other.

Implicit within this discussion of results is not just contribution but provocation: If an article is part of an ongoing conversation about interdisciplinary studies, it will likely serve to provoke further conversation. Effective scholarship of interdisciplinarity may suggest explicitly what future questions and research arise from its findings. How, for example, does it serve as an impetus for ongoing exploration of interdisciplinary processes? Glassick, Huber, and Maeroff (1997) note that each of the four scholarships can lead to further developments not only within its own realm but also within the other scholarships (p. 30). Thus, as noted above, further understanding of disciplinarity and interdisciplinarity can emerge from scholarship originating in any of Boyer’s four categories of discovery, integration, application, and teaching, and a scholarship of interdisciplinarity could serve as an impetus for further exploration within each of those.

Interdisciplinary scholarship might open up questions not only about ways that disciplines combine to shed light, but also about ways that interdisciplinary study sheds light back on the disciplines. Multiple contributors to our book noted that their course concepts not only drew on disciplines but shed new

light on the disciplines. Members of a particular interdisciplinary team “learned something about how our disciplines ground our thinking and our teaching.” Instead of moving on to another point, we could take the time to explore such a statement and what insights and implications it contains. How specifically does study of creativity across the arts shed light on work within creative writing; what questions does it open up? Or how does study of symmetry in physics shed light on symmetry in music? What underlying disciplinary metaphors become apparent as a result of interdisciplinary study? As Gunn (1992) illustrates with ethics and literature and also with American studies, interdisciplinary inquiry “reconfigures the constituent disciplines that compose it” (p. 242).

E. Presentation

Any scholarly presentation needs to be well written and clear. But those seemingly obvious terms become particularly tricky when doing interdisciplinary scholarship. The issue is already tricky for interdisciplinary scholarship intended for readers who work in a shared content area such as environmental studies or women’s studies but come from diverse areas of expertise. When scholars write beyond those borders as well, they need to give particular attention to audience throughout. Readers of a journal such as *Issues in Integrative Studies*, for example, come from a wide variety of disciplinary and interdisciplinary backgrounds. What they share is an interest in boundary crossings, and in the plethora of creative processes and results of those crossings.

The necessity of a strong presentation is arguably greater in the scholarship of interdisciplinarity than in disciplinary scholarship simply in that faculty will wade through all kinds of material to stay on top of developments in their field. True, in interdisciplinary studies a community of scholars is evolving whose primary loyalty is to interdisciplinarity, as reflected in their education, teaching appointments, and/or primary professional communities. But generally faculty participate in interdisciplinary activities while continuing their primary academic loyalties to their discipline and its professional communities, or to their particular interdisciplinary content area. If a scholarship extending across those areas is not accessible, faculty will not take the time to read it.

Within a discipline, faculty internalize relevant considerations of vocabulary and background knowledge over long years of practice. For a journal with a well-educated but not expert readership, faculty need to define

any specialized terminology, whether disciplinary or interdisciplinary, and the sense(s) in which it is used. As noted above, they can bring the depth of their disciplinary languages and approaches to bear on the interdisciplinary inquiry but need to take the time to clarify their moves. Clarification of usage of terms – of the familiar but possibly ambiguous as well as the less familiar, and of subtle or not-so-subtle differences in usage across disciplines – can shed good light on interdisciplinary processes. Indeed, developing language not “owned” by any one of the contributing disciplines may well have been a part of the process of creating common ground.

Balancing this expansion of the discussion for a broad audience, some detail that might be needed in an inclusive report on the activity, or in an argument toward other purposes, might be subordinated or sometimes even omitted in order to highlight the interdisciplinarity of the activity, as authors work within the ongoing dialectic of balancing depth, breadth, and synthesis.

Corresponding to these choices for an *Issues* audience, writing for an audience of a disciplinary journal will require particular attention to clarifying interdisciplinary terminology and processes – interdisciplinary “moves.” And worth further discussion, of course, are issues of writing for broader publics: articles in general-interest journals, public media, catalogs of museum exhibits, and so on. As Glassick, Huber, and Maeroff (1997) encourage recognition of integrative scholarship in multiple genres, they note that these occasions too call for careful and honest handling of “evidence, analysis, interpretation, and argument” (pp. 33, 38).

A final note here: Recent ongoing work by Wolfe and Haynes (2003a, 2003b) on assessing interdisciplinary writing by students raises useful issues for faculty doing interdisciplinary scholarship. These include issues of presentation while also crossing importantly into the other categories of the Carnegie guidelines, since their project focuses on ways to evaluate a product. The authors note that criteria for effective presentation of interdisciplinary work will vary depending on the dimension considered – some dimensions characteristic of disciplinary writing as well as interdisciplinary, others more specifically applicable to interdisciplinary writing. They detail elements of presentation entailed in “drawing on disciplinary sources,” “critical argumentation,” “multidisciplinary perspectives,” and “interdisciplinary integration.” Their work offers support for the stance that such general words as “well-written” or “clear” can carry specific meaning in discussing interdisciplinary writing.

F. Critique

In interdisciplinary scholarship as in disciplinary, readers expect explicit reflection and commentary on the activity discussed. But the writer on interdisciplinarity has multiplied opportunities and challenges for critique. Central to interdisciplinary inquiry and thus to interdisciplinary critique is a critical look at the assumptions and limitations of particular disciplinary contributions to the work at hand. And writers would do well to revisit and explore assumptions and limitations of their interdisciplinary approaches, which draw attention to the particular challenges and difficulties of interdisciplinary work. For example, might there be better ways to balance the combination of breadth, depth, and synthesis so as not to sacrifice too much of any one of those? If team members disagree, to what extent might those apparently individual struggles be disciplinary struggles? What approaches, beyond those used in disciplinary classrooms, might improve the function of cross-disciplinary student project groups?

Scholars can critique an interdisciplinary endeavor with the care that we would give within our own disciplines, whether humanistic or scientific; and when discussing our teaching, with the care that advocates of the scholarship of teaching and learning are encouraging. Few disciplinary journals on teaching would value an article that discusses a course and concludes, “x% of the course members found the course of value” (as did an article sent to *Issues*). Let us hope we are all teaching courses of value, whether disciplinary or interdisciplinary. How could the course be critiqued in such a way as to generate conclusions that bear more weight? (Again, see Hutchings, 2000, for some examples.)

Toward such reflexive critique, interdisciplinary practitioners and theoreticians can draw in particular on additional voices, for example, voices of students and of colleagues across the disciplines. The issue of “looking at a project from multiple perspectives” emphasized in *Scholarship Assessed* is clearly particularly appropriate for interdisciplinary scholarship, as that language speaks to the multi-perspectival nature of interdisciplinary studies itself. As scholars engage in and share such reflection, gather such multiple perspectives, and explore what is “unique and unexpected” (Glassick, Huber, & Maeroff, 1997, p. 35) in their work, they can make genuine contributions to the research.

The Passion and the Possibilities

This document overall, then, argues for an approach to the scholarship

of interdisciplinarity that is grounded in the professional literatures of the appropriate fields and in the literature of interdisciplinarity. It argues for a reflective scholarship that makes explicit how a piece advances existing practice or theory: how it can help its readers to re-see. Theoretical pieces need to appeal to practitioners; otherwise, busy faculty will not read them, and theory will not inform and improve practice. More practical pieces, when contextualized, can move beyond the “show-and-tell” level to advance the national conversation and appeal to, inform, and provoke readers both inside and outside the specific content area of the activity. We struggled toward this mix in our collaborative book – again, sometimes more successfully than others. The occasions when we succeeded became the best and also most satisfying parts of each of our chapters (as I can personally attest from my own).

But lest this article end with the “show-and-tell” phraseology that interdisciplinary studies reviewers often use negatively, we might take a moment to reflect on its underlying metaphor. If scholarship resembles show-and-tell, inquiry stalls. Even back in show-and-tell days, we got bored as peers talked on about their experiences. But many of us also remember the moment when the student who had been sitting quietly through all the tellings stood up, stuck her hand in her pocket, and said, “Look at the snake I found!” We need to ensure that there is room in interdisciplinary scholarship for effective *showing*: that is, sharing stories of interdisciplinary processes in action, in the classroom, on a faculty or student team, in a college/community project, in a professional research setting. Even as our disciplines increasingly contain multiple modes of inquiry and of communicating the results of those inquiries, even more so we should be encouraging multiple modes within interdisciplinary studies. Rigorous analysis is obviously a key. But as in fields where ethnographies, stories, and conversations both face-to-face and electronic all now appear in top journals, we need to encourage multiple modes of exploring interdisciplinarity. This openness needs to prevail both in journals with cross-disciplinary readership and in disciplinary journals open to scholarship about interdisciplinarity. Let us not say or imply that a good story, or a provocative piece of theoretical analysis, is not useful because it fails to meet each of the criteria listed above. The literature of interdisciplinarity needs to be open and evolving, adapting diverse genres to exploration of issues of interdisciplinarity.

Thus writers can draw on or depart from particular guidelines here as appropriate to their particular project, purpose, and passion. (George Orwell, in “Politics and the English Language,” concludes his list of rules with “Break any of these rules sooner than say anything outright barbarous.”)

We need, ultimately, to approach the scholarship of interdisciplinarity in the spirit that brought us into interdisciplinary studies in the first place: a spirit, as Kavaloski (1979) defines interdisciplinary studies, marked not only by integration but also by freedom of inquiry and by innovation (pp. 224-225). Even as formal a report as *Scholarship Assessed* (1997) ends its discussion of standards of scholarly work with reference to “the playful, anarchic, and unpredictable aspects of the life of the mind” (p. 35) – particularly appropriate wording for interdisciplinary scholarship. Halliburton (1981) argues that part of the promise of interdisciplinary study is to introduce “more healthy play” into the curriculum, so that students “do a little less marching and a little more dancing” (p. 464). Can we allow ourselves some of that energy in our interdisciplinary scholarship?

Toward Further Discussion

This project adds a voice to the many over the years that have advocated increased scholarly attention to what we mean when we speak of and practice interdisciplinary studies. The proposed guidelines do not advocate one particular kind of interdisciplinary scholarship over another: quantitative or qualitative, more theoretical or practical, based on experiences on research teams, project teams, or teaching teams. The guidelines so far lean toward interdisciplinary education, pedagogy in particular, as noted above. Others are invited to add voices to adjust/alter the balance, especially to take more account of interdisciplinary research and application. Indeed, a large part of the purpose of the article is to encourage further discussion of the issues it raises. Responses – for example in such venues as *Issues in Integrative Studies*, the *AIS Newsletter*, or the INTERDIS listserv – are most welcome, to deepen, extend, complicate, or contest what appears here. A set of guidelines embodying accumulated AIS wisdom would need to be a broad-based collaborative effort, as were the syllabus preparation and general education documents and as was the National Women’s Studies Association’s (2000) application of the Carnegie guidelines. A next step would be to adjust and disseminate such a set of guidelines to broader audiences, toward the goal that editors and referees of journals in particular disciplines, interdisciplines, and beyond increasingly welcome informed discussions of interdisciplinarity.

On the other hand I know some readers will heartily object that what we need at this point is not these guidelines – or even a better set of guidelines – but rather exemplars. They may prefer instead to work in an opposite

direction: to select outstanding exemplars of interdisciplinary thinking within the domains of their expertise and explore their dynamics, explicating what those reveal about interdisciplinary processes. A series of such studies of exemplars from different domains would be a wonderful initiative, for example, for this journal or an edited collection.

A wide range of faculty can make valuable contributions to the scholarship of interdisciplinary studies. Some of us will devote our careers to interdisciplinary issues and activities. Many others of us will move into and out of the scholarship of interdisciplinarity according to variables of evolving individual interests, teaching and administrative assignments, stages of our career, kinds of institutions within which we are working, and more, in the kinds of generative rhythms Boyer recommends. Professional scholars of interdisciplinarity and “the rest of us” can each open up lines of inquiry to the other (an observation also made about educational researchers vis-à-vis the diverse faculty interested in exploring processes of teaching and learning, e.g., Hutchings, 2000, p. 9). An avenue for future interdisciplinary scholarship, of course, would be to explore further how various institutional structures and incentives can allow faculty to engage in such interdisciplinary scholarship within discipline-based promotion and tenure systems.

Boyer (1990) urges that faculty themselves take responsibility for shaping the purposes of a broadened view of scholarship and for forming policies to support it (pp. 78-79). Rice (1996) adds that the new American scholar needs associational ties, professional critique, and recognition for varied forms of scholarly work, including work that crosses disciplines (pp. 13, 29). This document works in these directions, encouraging faculty from a wide range of starting points to expand their options for exploring interdisciplinary activities in scholarly writing. Boyer’s vision, while encouraging diversity of scholarship, ultimately is of “a *shared* vision of intellectual and social possibilities – a community of scholars – ... scholarship at its best should bring faculty together” (p. 80). The Carnegie Foundation is working to bring together faculty within their own institutions and nationwide who are interested in the scholarship of teaching and learning. Likewise, the Association for Integrative Studies has been working to bring together diverse faculty interested in the practices and scholarship of interdisciplinary education and research. Presentations and articles exploring the nature of interdisciplinary processes can help bring faculty together not only across disciplines but also across interdisciplinary content areas, thereby improving both understanding and practice.

In a volume of views on contemporary politics and processes of

scholarship, Gebhardt (1995), former editor of a premier journal, argues his belief that “the evaluation of research and scholarship will increasingly stress the *relationship* of research and publishing to the faculty members’ teaching; to the mission of the institution (university, college, department); and to the needs and expectations society has of higher education” (p. 14). A scholarship of interdisciplinarity – arising as it does from scholars’ commitment to activities aiming to “answer a question, solve a problem, or address a topic that is too broad or complex to be dealt with adequately by a single discipline or profession” – promises to serve as an exemplar of such connected scholarship.

Biographical note: Marcia Bundy Seabury is Professor of English in Hillyer College at the University of Hartford. She has directed the university’s interdisciplinary general education program (the All-University Curriculum), is a long-term member of one of its interdisciplinary teaching teams, and serves as the program’s faculty development coordinator. She edited a book about interdisciplinary general education co-authored by thirty of her Hartford colleagues and has published a variety of chapters and articles on issues of interdisciplinary teaching and learning, writing, and program administration.

Notes

¹ This project has been presented, in different forms, at the 2001 AIS conference at Virginia Polytechnic Institute and State University and at the 2002 AIS conference at Drury University, as well as at several other conference and consulting venues. The author thanks the AIS Board for encouraging the project. It draws on multiple voices of expert interdisciplinarians who have generously shared their experience and insights: in particular, I am grateful to Carolyn Haynes and Rick Szostak, who responded to an earlier draft of this article; to Bill Newell, Julie Klein, and Stan Bailis; and to the College Board advisory committee and anonymous outside reviewer of *Interdisciplinary General Education* (Seabury, 1999a) for useful input of many kinds.

² Description of this book project has appeared in *Issues* (Seabury, 1999b). Thirty faculty from my university – the University of Hartford, in West Hartford, Connecticut – created a collection of essays based on more than a decade of shared experience in a general education curriculum bringing together faculty, students, and ideas from across our comprehensive university. We explored questions such as these: What differences do we make for students by bringing them into interdisciplinary courses early in their college careers? How in practice do these courses work to develop integrative skills? What are the processes of interdisciplinary teaching and learning during a semester? And what do faculty learn over time about interdisciplinary general education: what works, what doesn’t, what should be done differently?

Authors addressed these questions from within the context of their particular interdisciplinary courses.

³For another example of application of the Carnegie guidelines, which came to my attention after this article was drafted, see “Defining Women’s Studies Scholarship,” composed by a large task force of the National Women’s Studies Association (2000). This chapter, from a useful pair of volumes on defining and rewarding faculty’s work, provides an excellent set of suggestions for documenting and evaluating scholarship, teaching, and service; it extends productively to interdisciplinary studies more broadly and could assist faculty in promotion and tenure procedures.

References

- Association of American Colleges and Universities. (2002). *Greater expectations: A new vision for learning as a nation goes to college*. Washington, DC: AAC&U.
- Association for Integrative Studies. (n.d.). *Directory of IDS doctoral programs*. Retrieved March 1, 2004, from <http://www.units.muohio.edu/aisorg/phd/graddirectoryintro.html>.
- Association for Integrative Studies. (n.d.) *AIS-connected publications on interdisciplinarity*. Retrieved March 1, 2004, from <http://www.units.muohio.edu/aisorg/pubs/reports/aisbib.html>.
- Association for Integrative Studies & Institute in Integrative Studies. (1996). Guide to interdisciplinary syllabus preparation. *Journal of General Education* 45(2), 170-73.
- Bass, R. (1999). The scholarship of teaching: What’s the problem? *Inventio*, 1(1). Retrieved June 21, 2001, from <http://www.doit.gmu.edu/Archives/feb98/rbass.htm>.
- Benson, T. (1982). Five arguments against interdisciplinary studies. *Issues in Integrative Studies*, 1, 38-48.
- Berthoff, A. (1981). *The making of meaning: Metaphors, models, and maxims for writing teachers*. Upper Montclair, NJ: Boynton.
- Boyer, E.L. (1990). *Scholarship reconsidered: Priorities of the professoriate*. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.
- Boyer Commission on Educating Undergraduates in the Research University. (1998). *Reinventing undergraduate education: A blueprint for America’s research universities*. Retrieved June 21, 2001, from <http://notes.cc.sunysb.edu/Pres/boyer.nsf>.
- Carnegie Academy for the Advancement of Teaching. (1997-2003). *Carnegie academy for the scholarship of teaching and learning (CASTL)*. Retrieved March 1, 2004, from <http://www.carnegiefoundation.org/CASTL/>.
- Conrad, C.F., & Gunter, R. (2000). To be more useful: Embracing interdisciplinary scholarship and dialogue. In A. Kezar & P. Eckel (Eds.), *Moving beyond the gap between research and practice in higher education* (pp. 49-62). New Directions for Higher Education, No. 110. San Francisco: Jossey-Bass.

- Cross, K.P., & Steadman, M.H. (1996). *Classroom research: Implementing the scholarship of teaching*. San Francisco: Jossey-Bass.
- Diamond, R.M., & Adam, B.E. (Eds.) (1995). *The disciplines speak: Rewarding the scholarly, professional, and creative work of faculty*. Washington, DC: AAHE.
- Diamond, R.M., & Adam, B.E. (Eds.) (2000). *The disciplines speak II: More statements on rewarding the scholarly, professional, and creative work of faculty*. Washington, DC: AAHE.
- Edwards, A.F. (1996). *Interdisciplinary undergraduate programs: A directory* (2nd ed.). Acton, MA: Copley.
- Fiscella, J.B., Jacobsen, C.R., Klein, J.T., Seabury, M.B., & Field, M.J. (2002). *Interdisciplinary studies in general education guidelines* (revised). Retrieved March 1, 2004, from <http://www.units.muohio.edu/aisorg/pubs/reports/genedaccred.html>.
- Fried, R., & McCarthy, H.D. (1999). What is school? The art of interdisciplinary engagement. In M.B. Seabury (Ed.), *Interdisciplinary general education: Questioning outside the lines* (pp. 49-68). New York: College Entrance Examination Board.
- Gebhardt, R.C. (1995). Avoiding the 'research versus teaching' trap: Expanding the criteria for evaluating scholarship. In J.M. Moxley & L.T. Lenker (Eds.), *The politics and processes of scholarship* (pp. 9-17). Westport, CT: Greenwood.
- Glassick, C.E., Huber, M.T., & Maeroff, G.I. (1997). *Scholarship assessed: Evaluation of the professoriate*. San Francisco: Jossey-Bass.
- Gunn, G. (1992). Interdisciplinary studies. In J. Gibaldi (Ed.), *Introduction to scholarship in modern language and literature*. New York: Modern Language Association.
- Halliburton, D. (1981). Interdisciplinary studies. In A. Chickering (Ed.), *The modern American college* (pp. 453-471). San Francisco: Jossey-Bass.
- Hayakawa, S.I. (1972). *Language in thought and action* (3rd ed.). New York: Harcourt.
- Huber, M.T. (2002). Disciplinary styles in the scholarship of teaching: Reflections on the Carnegie Academy for the Scholarship of Teaching and Learning. In M.T. Huber and S.P. Morreale (Eds.), *Disciplinary styles in the scholarship of teaching and learning* (pp. 25-43). Washington, DC : American Association for Higher Education.
- Hutchings, P. (Ed.). (2000). *Opening lines: Approaches to the scholarship of teaching and learning*. Menlo Park, CA: Carnegie Foundation for the Advancement of Teaching.
- Hutchings, P., & Shulman, L.S. (1999). The scholarship of teaching: New elaborations, new developments [Electronic version]. *Change*, 31(5), 10-15.
- Kavaloski, V.C. (1979). Interdisciplinary education and humanistic aspiration: A critical reflection. In J. J. Kockelmans (Ed.), *Interdisciplinary and higher education* (pp. 224-243). University Park: Pennsylvania State University Press.
- Kelly, T.M. (2000). For better or worse? The marriage of web and classroom. In P. Hutchings (Ed.), *Opening lines: Approaches to the scholarship of teaching and learning* (pp. 53-61). Menlo Park, CA: Carnegie Foundation for the Advancement of Teaching.

- Klein, J.T. (1996). *Crossing boundaries: Knowledge, disciplinarity, and interdisciplinarity*. Charlottesville: University Press of Virginia.
- Klein, J.T., & Newell, W.H. (1997). Advancing interdisciplinary studies. In J.G. Gaff & J.L. Ratcliff (Eds.), *Handbook of the undergraduate curriculum* (pp. 393-415). San Francisco: Jossey-Bass.
- Linkon, S. (2000). Students' perspectives on interdisciplinary learning. In P. Hutchings (Ed.), *Opening lines: Approaches to the scholarship of teaching and learning* (pp. 63-71). Menlo Park, CA: Carnegie Foundation for the Advancement of Teaching.
- Linkon, S. (n.d.). *Learning interdisciplinarity: A course portfolio*. Retrieved March 1, 2004, from <http://www.as.yosu.edu/~amerst/CoursePortfolioHome.htm>.
- Miller, R. (1999). The Academy in Transition: An exercise in positive thinking. *Association for Integrative Studies Newsletter*, 21(4), 1-4.
- National Women's Studies Association. (2000). Defining women's studies scholarship. In R.M. Diamond & B.E. Adam (Eds.), *The disciplines speak II: More statements on rewarding the scholarly, professional, and creative work of faculty* (pp. 153-178). Washington, DC: AAHE.
- Nelson, C.E. (n.d.). *How could I do the scholarship of teaching & learning?* Retrieved June 21, 2001, from <http://php.indiana.edu/~nelson1/GENRES.html>.
- Newell, W.H. (1998). Professionalizing interdisciplinarity: Literature review and research agenda. In W.H. Newell (Ed.), *Interdisciplinarity: Essays from the literature* (pp. 529-563). New York: College Entrance Examination Board.
- Newell, W.H., & Green, W.J. (1982) Defining and teaching interdisciplinary studies. *Improving College and University Teaching*, 30(1), 23-30.
- Phillips, M. (2000). A case study of theory, voice, pedagogy, and joy. In P. Hutchings (Ed.), *Opening lines: Approaches to the scholarship of teaching and learning* (pp. 73-79). Menlo Park, CA: Carnegie Foundation for the Advancement of Teaching.
- Rice, R.E. (1996). *Making a place for the new American scholar. Inquiry #1*. Washington, DC: AAHE.
- Salter, L., & Hearn, A. (1996). *Outside the lines: Issues in interdisciplinary research*. Montreal: McGill-Queen's University Press.
- Seabury, M.B. (Ed.). (1999a). *Interdisciplinary general education: Questioning outside the lines*. New York: College Entrance Examination Board.
- Seabury, M.B. (1999b). Venturing into interdisciplinary tasks: Common challenges for faculty and students. *Issues in Integrative Studies*, 17, 71-85.
- Shulman, L. (1998). Course anatomy: The dissection and analysis of knowledge through teaching. In P. Hutchings (Ed.), *The course portfolio: How faculty can examine their teaching to advance practice and improve student learning* (pp. 5-12). Washington, DC: American Association for Higher Education.
- Vess, D., with Linkon, S. (2002). Navigating the interdisciplinary archipelago: The scholarship of interdisciplinary teaching and learning. In M.T. Huber and S.P. Morreale (Eds.), *Disciplinary styles in the scholarship of teaching and learning* (pp. 87-106). Washington, DC : American Association for Higher Education.

- Weimer, M.E. (1993). The disciplinary journals on pedagogy. [Electronic version]. *Change*, 25(6), 44-51.
- Wolfe, C.R., & Haynes, C. (2003a). Assessing interdisciplinary writing. *Peer Review*, 6(1), 12-14.
- Wolfe, C.R., & Haynes, C. (2003b). Interdisciplinary writing assessment profiles. *Issues in Integrative Studies*, 21, 126-169.

APPENDIX

SAMPLE SUGGESTIONS FOR FURTHER SCHOLARSHIP

For faculty getting started in a scholarship of interdisciplinarity, some suggestions are presented in Table 2 and discussed a bit below.

TABLE 2

Some Ideas for Further Scholarship

1. Check the list of invited topics presented in the general call for papers in each edition of *Issues in Integrative Studies*.
2. See questions for further research in William Newell's essay "Professionalizing Interdisciplinarity: Literature Review and Research Agenda."
3. A few sample approaches:
 - test the claims for interdisciplinary activities.
 - examine the processes of interdisciplinary work.
 - propose and analyze models and resources for interdisciplinary work.
 - investigate changes in interdisciplinary practice, e.g., as a result of new technologies.
 - explore issues of power and resistance.
 - discuss integration of faculty and student interdisciplinary activities.
 - consider what doesn't work.
 - envision future possibilities for interdisciplinary activities.
 - develop a conceptual framework that sheds light on interdisciplinary activities.

The suggestions in Table 2 should be read in the light of earlier comments

about multiple audiences, purposes, and genres for scholarship based on interdisciplinary activities. In accordance with the scope of this article, examples come from classroom sites, but the points apply more broadly; other writers are invited to take up the challenge of expanding the lists and examples.

1. An obvious starting point is the list of topics printed on the inside back cover of each edition of this journal.
2. Next are the provocative lists of seed questions ending each section of Newell's (1998) essay "Professionalizing Interdisciplinarity: Literature Review and Research Agenda."
3. Following is the author's compilation of some topics that could be of interest.

a. Test the claims for interdisciplinary activities.

As noted above in the comments on methods and evidence, much interdisciplinary scholarship has naturally drawn on the enthusiasm of its practitioners who have liberated themselves from what they perceived as constrictive, reductive, fragmentary thinking or curricula. As the literature of interdisciplinarity matures, one direction of development will be an exploring and testing of its claims, through a wide variety of approaches (e.g. see Wolfe & Haynes, 2003a, 2003b) – though with the reminder from experts in classroom research of how difficult it is for traditional research studies to prove the value of an educational innovation (see esp. Cross & Steadman, 1996, p. 73; cf. Conrad & Gunter, 2000, p. 49).

b. Examine the processes of interdisciplinary work.

While some of the Carnegie scholars, for example, have embraced a scholarship that involves "proving something," others, such as Linkon and Phillips, explicitly reject that kind of scholarship. "Instrumental" questions are indeed useful – "does this new method I'm trying lead to more or better learning than the traditional one?" – and, we might note, particularly useful in interdisciplinary studies as large-scale decisions are being made about curricula. But as Hutchings and Shulman (1999) continue, "what" questions are likewise useful, "in which the task is not to 'prove' but to describe and understand an important phenomenon more fully" (§22-23). Understanding interdisciplinary learning is certainly among these: what does it look

like in an interdisciplinary course when a student “gets it”? One might focus on “best practices” – those instructors who seem to be “getting it right” – and explore questions of what they are doing, *why* it is working, and what limitations remain (Kelly, 2000, p. 58, commenting on the work of Samuel Wineburg).

c. Propose and analyze models and resources for interdisciplinary work.

Both faculty and student practitioners of interdisciplinary study have often operated either without effective models or without reflection on models. Rather than beginning with guidelines, as noted above, faculty could learn from detailed explication of a variety of exemplars of first-class interdisciplinary scholarship. At the same time, rather than simply being asked to synthesize various disciplinary materials, students can gain from a variety of exemplars of such thinking by both professionals and students within the content area under study. Faculty entering interdisciplinary teaching are often faced with the necessity of pulling together a wide-ranging course pack, with all the time and attendant complications that process entails. Some of this process is, of course, open and exciting. But faculty can also benefit from learning of emerging resources that collect and perhaps also integrate in various ways the contributions of the disciplines to the particular interdisciplinary inquiry. (And as a broadened definition of scholarship increasingly takes hold, let us hope more interdisciplinary scholars take up the challenge of creating new interdisciplinary texts – writing that, as Boyer notes, also deserves full professional recognition when informed by the best of current research.)

d. Investigate changes in interdisciplinary practices, for example, as a result of new technologies.

Search engines bring up material from here, there, and everywhere. As students increasingly do their research on the Internet (and are sorely tempted to research only there), they cross disciplinary boundaries with the click of a mouse. Disciplinary contributions can be leveled to “I found it on the web,” so that web research can create “nondisciplinary learners” unaware of the powerful disciplinary lenses that have yielded the insights they happen upon. In what ways are faculty helping students to become aware of, and to compare and contrast, those lenses?

e. Explore issues of power and resistance.

Interdisciplinary scholarship would do well to parallel the composition

literature, where “self-evident” goals of helping students learn to write well, and supposedly liberating pedagogies, have been explored for the concomitant issues of power and resistance they embody. How are these issues playing out in our interdisciplinary programs, classrooms, and teams, and how are we dealing with them?

f. Discuss integration of faculty and student interdisciplinary activities.

Interdisciplinary activities are increasingly part of faculty’s work of discovery, integration, application, and teaching. As faculty seek to integrate their research and their teaching, and as principles of good practice for undergraduate education increasingly urge faculty to involve students in research and community work, perhaps directly related to their own (e.g., Boyer Commission, 1998), we would do well to explore the many and varied intersections between faculty’s and students’ interdisciplinary activities.

g. Consider what doesn’t work.

Some of the more useful theoretical and practical examples of interdisciplinary scholarship have abandoned the self-congratulatory tone of many early examples in the literature and taken an adversarial stance that complicates our understandings of interdisciplinary studies (e.g., Benson, 1982). Even as we need to deepen our understanding of the virtues of interdisciplinary studies and explore evidence for our claims, we also need to explore the limitations and complexities of those claims.

h. Envision future possibilities for interdisciplinary activities.

This is the visionary aspect of interdisciplinary scholarship that some readers have asked to see more of in *Issues*. What can interdisciplinary studies become? Fruitful inquiry can begin with “visions of the possible,” as Shulman terms it (Hutchings, 2000, p. 4). This kind of scholarship may draw on the intense personal commitments to the kinds of connectedness that drew many faculty into interdisciplinary studies to begin with.

i. Develop a conceptual framework that sheds light on interdisciplinary activities.

As Hutchings (2000) notes, this kind of work is particularly needed in the scholarship of teaching and learning (p. 5).