

# BECOMING INTERDISCIPLINARY

## The Student Portfolio in the Bachelor of Interdisciplinary Studies Program at Arizona State University

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**Abstract:** This paper serves as a case study on the use of student portfolios at a large undergraduate interdisciplinary program at Arizona State University. The paper addresses the following question: How can student portfolios improve student learning, IDS teaching, and IDS curriculum assessment? The history of the Bachelor of Interdisciplinary Studies (BIS) program, its features, its partnership with ASU Career Services, and the process of student portfolio implementation into its curriculum are reviewed in order to demonstrate how the BIS program student portfolio requirement has contributed to the program's success as an undergraduate interdisciplinary studies degree program.

I am not just an interdisciplinary studies student now. I have an  
interdisciplinary *life*  
—Alicia Gilbert (2004, p. 181)

### Introduction

The Bachelor of Interdisciplinary Studies program (BIS) at Arizona State University (ASU) is an interesting example of how undergraduate interdisciplinary studies degree programs can be successful in large metropolitan public research universities with minimum administrative support for faculty and students alike. In a relatively short time, the BIS program has become

one of the most popular majors on campus, greatly exceeding all university expectations. Original projections estimated that BIS would serve four hundred students by its fifth year (ARBOR 1995, p. 4); in actuality there were more than 1500 pre-BIS and BIS majors during fall 2001 semester. By fall 2003 the BIS program had grown to about 1800 students.<sup>1</sup>

As a case study for student growth, the BIS program is exemplary: its continuing, overwhelming popularity among students is its biggest defense against many of its critics. These critics have ranged from entire colleges at ASU to high-level administrators at the same institution. They have done little or less to improve what one interdisciplinarian scholar would categorize as the program's "across the street status" (Schilling 1999, qtd. in Field & Stowe 2002), although this situation may begin to change in the near future.<sup>2</sup> The purpose of this essay is neither to discuss why there are those who have not adequately supported the BIS program at ASU nor to speculate on the reasons for what can perhaps be best termed as benign neglect, as criticisms lodged against interdisciplinary studies (IDS) have already been articulated elsewhere, most notably in Benson (1982). Rather, it will focus on one of the most distinctive features of the BIS program, its student portfolio requirement. In so doing, it will serve as a case study pertaining to the use of student portfolios at a large undergraduate interdisciplinary studies program to answer the following question: How can student portfolios improve student learning, IDS teaching, and IDS curriculum assessment? The history of the BIS program, its features, its partnership with ASU Career Services, its process of student portfolio implementation into the curriculum, and its efforts at assessment will be reviewed in order to demonstrate how the student portfolio requirement has contributed to the BIS program's success as an undergraduate IDS degree program.

## **Approaches to Student Portfolios**

As Banta (2004), Trice (2000), and Zubizarreta (2004) have each observed, academic interest in student portfolios over the past fifteen years has been substantial and noteworthy. Although the interest in portfolios has been greater in the K-12 arena, portfolios "are beginning to attract significant attention in college and university settings" (Zubizarreta 2004, p.7).

The literature on student portfolios has had the tendency to fall within the following three categories: 1) assessment literature, 2) literature on teaching practices, and 3) literature on student learning. For example, Cole, Ryan, Kick, and Mathies (2000); Palomba and Banta (1999); and Trice (2000) con-

sider student portfolios in terms of “authentic” or direct performance-based assessment. The literature on teaching practices tends to focus on how portfolios can be used to improve the instruction of specific courses, curriculum outcomes, or skills such as writing or math (see Cambridge et al. 2001; Zubizarreta 2004, for course-specific instruction, skills, and curriculum outcome-based examples). The more recent learning-centered literature has tended to focus on what was missing or not emphasized enough in the earlier scholarship: student learning. According to Zubizarreta (2004), “what is left out of the formula in student portfolios is an intentional focus on the learning piece, the deliberate and systematic attention not only to skills development but also to a student’s self-reflective, metacognitive appraisal of how and, more importantly, why learning has occurred” (p. 4). These three genres are not rigid, leaving room for informative and innovative overlaps. For example, although Zubizarreta (2004) may claim to take a learning focus approach, in actuality, his approach is much more holistic as he includes discussions of specific teaching practices and assessments from practitioners, practical materials such as grading rubrics and guidelines, and sample student portfolios and reflections.

The questions that inevitably arise for those who teach in IDS programs are as follows: how can we as instructors use portfolios in our courses, and for what purpose(s)? While Klein and Newell (1997) have included “course learning portfolios and academic career portfolios” as among “a number of mechanisms” that “facilitate integration” (p. 13), little can be found on the links between student portfolios and interdisciplinarity. There are two kinds of exceptions. The first exception worth noting include those discussions that address portfolios but are more concerned with general education assessment than interdisciplinarity. For example, Amiran, Schilling, and Schilling (1993) recount how student portfolios were used to assess general education within an interdisciplinary core curriculum at the Western College Program of Miami University of Ohio. Wehlburg (2004) reports that Stephens College requires an assessment of interdisciplinary thinking as part of the student general education portfolio. Truman State University has developed a detailed “Interdisciplinary Thinking” prompt for its university-wide “Portfolio Project,” which is a summative (final) assessment for its university programs and undergraduate experiences. The prompt is part of the student portfolio that is required from all of its graduating seniors regardless of their majors (See Liberal Arts and Sciences Task Force 2004).<sup>3</sup>

The second approach to student portfolios is found in the existing IDS literature. In what Klein and Doty (1994) categorize as the first published

article on interdisciplinary assessment, Field, Lee, and Field (1994) report the usage of “portfolio analysis” at both the Western College Program at Miami University and at Wayne State University. Field and Stowe (2002) in a seminal article on interdisciplinary assessment consider the numerous performance-based assessment techniques as a means of “transforming interdisciplinary teaching and learning.” They regard student portfolios, along with senior projects, as “promising interdisciplinary authentic assessment techniques.” With portfolios, students can “actively demonstrate their learning rather than simply select a response on a standardized test” (p. 266). According to Field and Stowe (2002),

the value of portfolio assessment for interdisciplinary outcomes lies in the longitudinal nature of the process. Not only does the portfolio provide an authentic snapshot of the beginning and ending of the academic experience, it also offers a look at what happened along the way. Portfolio examination can provide rich and expressive evidence of experiences and development while furnishing compelling evidence of developing knowledge and skills . . . This information can be used effectively to validate the interdisciplinary process and to communicate the process to internal and external audiences. (p. 268)

Other contributions to the IDS literature on portfolios include Augsburg (2004), who focuses on implementation from mostly the instructional perspective, and Thomas (2004), who underscores interdisciplinary skills from primarily the student learning perspective. Both of these authors explain how they have incorporated student portfolios into the interdisciplinary studies curriculum at ASU. Three of the fourteen student portfolio sample selections included in Zubizarreta (2004) are those of Augsburg’s former BIS students (Gilbert 2004; Rosenberg 2004; Teel 2004). Gilbert (2004) and Rosenberg (2004) incorporate journey metaphors in their respective reflections about their interdisciplinary educations to stress intellectual growth and self-development. Rosenberg (2004) in particular explicitly links his portfolio with interdisciplinary learning and self-development:

My goal for the BIS 301 class portfolio is to try to tie my two concentrations of business and communication together and . . . find a way to integrate the areas into a successful job. I have come a long way so far, and there is no turning back. I know that some more mistakes lie ahead in my future, although hopefully not too many. Day by day, my future becomes clearer through my portfolio

reflections and my collected materials, and with the combination of the skills that I have already and what I have yet to learn, my future seems to be getting brighter. (p. 202)

The student portfolio samples by Gilbert (2004) and Rosenberg (2004) point to what has yet to be adequately considered in both the literature on student portfolios and the IDS literature: the links between student portfolios and student development. As the rest of this essay will try to demonstrate, the ways in which student portfolios were developed and implemented in the BIS program have had some unexpected benefits for its students in terms of IDS learning and student development that break new ground for future research.

### **The BIS Program's History and Curriculum Features**

Before the BIS student portfolio and its implementation can be further explained, some historical background and explanation of the BIS program and its curriculum are necessary. The original *motivations* behind the BIS program's creation were unlike those listed by Klein and Newell (1997), although the outcomes are similar: general and liberal education; professional training; social, economic, and technological problem solving; social, political, and epistemological critique; faculty development; financial exigency (downsizing); and production of new knowledge (p. 394). The BIS program was initially and primarily designed to meet student needs; its creators were particularly motivated to address student needs that were manifesting themselves as two related administrative problems: the phenomenon of "stalled students" and a lower than expected graduation rate. "Stalled students" referred to those students who had enough credit hours to graduate yet still found themselves without a major. They tended to belong to one or more of the following cohorts (listed in no particular order): returning students; transfer students; students who kept changing majors; students who did not get accepted into the highly competitive business school; or students whose grade point averages were above the minimum 2.0 necessary to graduate from ASU, but below the required 2.5 that many departments and programs require for their majors. Because ASU's mission includes the obligation to graduate its qualified students, something had to be done both to serve these students and to improve their graduate rate.

A university-wide committee was formed in 1993, charged with creating a new student-centered IDS degree. The BIS advisory committee designed the

degree to allow maximum student flexibility, choice, and expediency, while securing program viability, efficiency, and integrity. The initial features of the curriculum are currently still in place. BIS students must meet the general requirements and minimum graduation requirements of the university. BIS majors choose two disciplines or concentration areas and take six courses in each discipline approved by each discipline's corresponding department or degree-granting program. Additionally, BIS majors are required to take four BIS core courses designed to help students learn how to integrate. Several hybrid disciplines or double concentrations, such as organizational studies, have developed as alternatives to choosing two disciplines. The overwhelming majority of students continue to select two disciplines, with business and communication constituting the most popular combination. An increasing number of BIS students opt to add a minor into the mix.

The four BIS courses were designed to be taken in sequence. As Newell notes (1998), "since interdisciplinary study builds directly on the disciplines while offering a holistic counterbalance to the reductionist perspectives they afford, a curriculum that intersperses disciplinary and interdisciplinary courses allows each to build on the strengths of the other" (pp. 59-60). The BIS four-course sequence is as follows:

Foundations of Interdisciplinary Studies (BIS 301): In this introductory course students are introduced to "the concepts and methods of interdisciplinary study by critically examining anticipated 21<sup>st</sup>-century workplace and civic trends" (BIS Faculty, "BIS 301 Curricular Guidelines" n. d.). Its learning objectives as developed by the BIS faculty are as follows:

- Understand interdisciplinary studies.
- Understand disciplines in general and concentration areas in particular from an interdisciplinary perspective.
- Assess individual strengths and opportunities for improvement with respect to future success in increasingly interdisciplinary workplace and societal settings. (n.d.)

The BIS Advisory Committee instilled BIS 301 with three required core assignments: 1) a personal statement/intellectual autobiography that reflects on one's educational experience and interests, 2) a plan or program of study that includes a reflection of the skills and knowledge contents one has learned in the classes one has taken as well as a prospectus of one's remaining classes, and 3) the BIS portfolio. The BIS faculty subsequently added two suggested assignments: a concentration areas paper and an informational interview

assignment for which students interview individuals currently working in the career or business of their interest.

Collectively the assignments function as the foundation of a developmental curriculum: students begin their interdisciplinary educations by reflecting on themselves (their experience, their identities, and their values) with writing their personal narratives. As they begin to learn definitions and concepts about interdisciplinary education, they reflect on their educational past and future in their plans of study. To prepare for their plans of study, students must gain foundational knowledge in at least two disciplines by identifying disciplinary concepts, theories, perspectives, insights, and research methods for each discipline. Some faculty assign the suggested concentration areas paper, while others, including myself, have incorporated disciplinary research into the plan of study. Regardless of format, all BIS faculty require students in BIS 301 to do research on their disciplines of choice. As Klein (1990), Newell (1998), and Gardner (1999) have each pointed out, disciplinary competence is a prerequisite for doing interdisciplinary work.

Students then continue to reflect on themselves and their education while starting to learn how to integrate disciplines with their portfolio. By assembling their portfolios, students have to identify interdisciplinary research topics and complete integration exercises (which will be discussed in more detail later in this essay). Through the process of completing various research and reflective assignments that are designed for inclusion in the BIS portfolio, students inevitably learn how to do interdisciplinary studies. In effect, by requiring the three core assignments for the introductory course, the BIS Advisory Committee built into the interdisciplinary studies curriculum a model of student intellectual development.

Introduction to Human Inquiry (BIS 302): In this research methods course, students “explore interdisciplinarity and integration as applied to various approaches of human inquiry” (BIS Faculty, “BIS 302 Curricular Guidelines,” n. d.). Its learning objectives are as follows:

- Relate interdisciplinary studies to different assumptions about the ways in which knowledge is organized.
- Introduce students to different approaches to human inquiry—including qualitative, quantitative, and interdisciplinary analysis—representative of thinking associated with three major domains of knowledge: the natural and physical sciences, social sciences, and humanities.
- Give students experiences in both defining and resolving problems. (BIS Faculty n. d.)

Required assignments include qualitative analysis, quantitative analysis, and interdisciplinary analysis. Often BIS 302 is problem focused, as students conduct different kinds of research during a semester on a topic such as music or the elderly.

Applied Interdisciplinary Studies (BIS 401): This course “applies interdisciplinary problem-solving skills in internships, service learning, or research.” It “may involve individual or group projects combining both concentrations” (BIS Faculty, “BIS 401 Curricular Guidelines” n. d.). Students typically work 125 hours during the course of a semester at a learning site where they conduct academic research integrating disciplines. The learning objectives are as follows:

- Provide opportunities to see concepts/ideas from their subject-area concentrations at work in an applied setting.
- Conduct independent research related to applied study site.
- Make connections between course content/program of student and the applied study setting. (n. d.)

Required assignments include time sheets, a supervisor evaluation, a descriptive/reflective journal, a “Focusing on People” paper, and a problem/issue analysis paper.

Interdisciplinary Studies Senior Seminar (BIS 402): In this problem-focused capstone senior seminar, students are expected to do advanced interdisciplinary research on a topic decided by each instructor according to his or her area(s) of expertise. Recent BIS 402 courses have included such topics as “Globalization”; “Money and Meaning”; “Fostering Innovation and Creativity in Interdisciplinary Efforts”; “Thinking through Sports”; “Identity Conflicts”; “Construction of Female Identity”; “Multicultural America”; “It’s the Law”; “Beyond the Bottom Line: Corporations, Society, and Our Work Lives”; “Performance Studies”; and “Interdisciplinary Approaches to Contemporary Art.”

Its learning objectives include the following:

- Analyze at least one topic from multiple perspectives.
- Demonstrate ability to integrate knowledge from subject-area concentrations. (BIS Faculty, “BIS 402 Curricular Guidelines” n.d.)

The BIS Faculty added both required assignments, which include the student portfolio and a portfolio presentation, and a suggested assignment—an applied study presentation.



Students are able to complete the four-course sequence in three semesters because they can take BIS 401 and BIS 402 concurrently. Since BIS 301 and BIS 402 are both considered written literacy courses, BIS students automatically fulfill ASU's general education requirement of two literacy courses by completing their BIS core classes.

In addition, the program advisory committee specified that the BIS portfolio would be more than just a BIS 301 assignment. The BIS portfolio was to be a *program portfolio*, which, according to Yancey (2001), "is a model that draws from several classes, from extracurricular activities, and/or from internships, service-learning, and other experiential learning" (p. 18). BIS thus would be a portfolio-based program that would require its students to track and reflect upon their progress as interdisciplinary learners throughout their education. More specifically, in the process of creating and completing their portfolios, students would engage in the following tasks that expand upon Yancey's (2001) and Zubizaretta's (2004) respective conceptions of student portfolio characteristics:

1. Gather materials from their education;
2. Select material for inclusion;
3. Review what they have learned;
4. Reflect on what they have learned;
5. Plan their educational and professional goals;
6. Organize their material in a way that "makes sense";
7. Present their material in an attractive manner;
8. Collaborate with others, particularly their peers and instructors about their portfolios; and
9. Communicate with others about their portfolio contents.

It was left to the BIS faculty to determine the contents of these student portfolios. This task turned out to be extremely complicated for the faculty, who were responsible for most of the curriculum and program development. Paradoxically, the BIS portfolio requirement, which was instilled as a precautionary measure by the BIS advisory committee and has been viewed as challenging to incorporate into the curriculum by most BIS faculty members, has become among the most distinctive and attractive features of the BIS program to its majors.

## Differing Views Regarding BIS Student Portfolios

The differences between how BIS faculty and BIS students view the portfolio are considerable enough to warrant further consideration. BIS faculty members typically regard the BIS portfolio primarily as a pedagogical tool and secondarily as a means of summative assessment (i.e., in terms of educational purposes). From the BIS faculty perspective, the BIS portfolio is similar to most student learning portfolios insofar as it fosters in students a sense of individual responsibility and accountability for one's education. Not surprisingly, BIS faculty members firmly believe that to be able to produce effective portfolios students need to be fully vested in their education.

In contrast, students tend to view the BIS portfolio three ways. First, they regard the BIS portfolio as a means for self-legitimization. The BIS portfolio enables students to demonstrate with artifacts and reflection exercises what they have learned and focused on throughout their education. More specifically, by integrating the personal, the educational, and the professional by means of the BIS portfolio, BIS students can visually exhibit and communicate to others the skills and knowledge that they have learned in their personal explorations, in the classroom, in their co-curricular experiences (such as residential living), in their extracurricular activities, in their internships, and in their work experience. In other words, BIS students tend to consider the BIS portfolio requirement as a personal marketing tool that is essential for life after graduation, whether they plan to apply to graduate school or enter the job market. Not surprisingly, the results of a BIS cyber-workshop survey conducted in the summer of 2002 from 242 prospective BIS students revealed that many prospective BIS majors consider the degree because they believe that it will help them become better prepared for their lives after graduation (Potts 2002). My experience teaching in the program has led me to conclude that the BIS portfolio plays a significant role in student beliefs and expectations about the program, a view that is supported by Potts's finding (2002) that many first learn about the program from other ASU students.<sup>4</sup>

Second, BIS students view the portfolio as a means of demonstrating interdisciplinary skills and thinking. Students are introduced in BIS 301 to Klein and Newell's (1997) definition of interdisciplinarity:

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 disciplinary perspec-

tives and integrates their insights through construction of a more comprehensive perspective. (p. 3)

From this definition, students learn to appreciate the values of problem-solving and embracing multiple perspectives in one's education—particularly for career preparation. “Embracing multiple perspectives” can often translate to “cross training” outside of academia. The majority of BIS students work,<sup>5</sup> so they know on a practical level the importance of problem-solving and cross-training. Students realize that in the 21<sup>st</sup> century workplace, many jobs require knowledge in more than one area as well as versatility in applying that knowledge. BIS students use their portfolios to document their ability to approach problems from multiple perspectives as well as their cross training experience, which can include instances of working in interdisciplinary projects, teams, or both.

Third, students utilize their BIS portfolio as a means to document the uniqueness of the internship experience gained in BIS 401, the applied IDS course. Students not only gain crucial professional experience by means of experiential learning, but they also have to document their activities as well as do academic interdisciplinary research on their learning sites. Assignments in BIS 401 include keeping a detailed journal and writing a problem/needs assessment, which includes identifying an existing interdisciplinary problem at their learning site and determining possible solutions that utilize interdisciplinary approaches and perspectives. Students must describe both the problem and solutions as interdisciplinary, incorporating at least three academic sources into the discussion. Most, if not all, of their work for BIS 401 is included by the time they complete their BIS portfolios. By including their BIS 401 coursework in their BIS portfolios, BIS students learn not only how to conceptualize their experiential learning experiences but also how to analyze and articulate them in both professional and scholarly manners.

Having briefly explained BIS and how faculty and students regard its portfolio requirement, I would next like to recount briefly how its faculty incorporated the BIS portfolio requirement into the BIS curriculum—through its partnership with ASU Career Services. This unique and innovative collaboration has been critical for the development of BIS portfolio assignments and for the development of the BIS program as a whole. It is unique for the ASU campus. It is innovative because it fosters the actualization of two proposed items by Baxter Magolda (1999, 2001) of educational reform. The first is her call for further developing a constructive-developmental pedagogy, “a form of pedagogy that promotes self-authorship in addition to subject mastery”

(1999, p. 6). “Self-authorship,” a term she borrows and expands upon from developmental psychology (Kegan 1994), “extends beyond critical thinking or making informed judgments because it is not a skill; it is, rather a way of making meaning of the world and oneself” (1999, p.6). Thus, a constructive-developmental pedagogy for Baxter Magolda “is more than letting students talk and generate their own ideas. It is a matter of creating the developmental conditions that allows them to generate their own ideas effectively, in essence to develop their mind, their voices, and themselves, (1999, pp. 7-8).

The second reform, which builds from the first, is Baxter Magolda’s (2001) call for providing contexts that could not only promote student self-authorship, but also “enhance graduates’ ability to be productive citizens” as it can promote a better understanding of “a major missing piece to the career success puzzle—themselves” (p. 303). Indeed, it is not a stretch to say that another distinctive feature of the BIS program is its successful partnership with ASU Career Services that has promoted the incorporation of a holistic constructive-developmental approach to interdisciplinary learning into its curriculum.

## One BIS Faculty Member’s Perspective

The primary reason that BIS faculty found the implementation of the BIS portfolio requirement into the curriculum challenging was because the idea of integrating student portfolios into the undergraduate curriculum was and remains a relatively untested concept—at least at ASU. None of the four BIS faculty members hired in Spring 1998 were familiar with student learning portfolios when they began teaching in the program, yet they were told by administration that they were required to assign them. With little time to prepare for summer 1998 classes, they turned to ASU’s Career Services for assistance, having heard that its advisors offer workshops in career planning portfolios. Because the fledgling faculty members at the time did not feel sufficiently prepared to explain the theory and rationale behind portfolios to students, they requested that ASU Career Services advisors conduct portfolio workshops in the initial classes they taught.

ASU Career Services advisors presented, and to this day continue to present, two portfolio workshops that utilize a learning-centered developmental approach to student portfolios. An introductory workshop is presented in BIS 301. The introductory portfolio workshop introduces five concepts. First, it introduces the concept of portfolios as a place for storing things. Second, it describes various types of portfolios useful to college students. These in-

clude the personal discovery portfolio, the educational portfolio, the career development portfolio, the showcase portfolio, and even a wellness portfolio. Although students are introduced to the idea that there are many different types of portfolios, the type of portfolio ASU Career Services emphasizes during this introductory portfolio workshop is the personal discovery portfolio since personal discovery is the first step in the career development process. This emphasis works especially well in BIS 301. It reifies the course's developmental approach to interdisciplinary studies insofar as it underscores the necessity of discovering one's intellectual and academic interests before one can plan for one's career.

Third, the introductory portfolio workshop addresses organization strategies. For example, students consider whether they should organize their portfolios longitudinally or according to skills they have been obtaining. Fourth, the workshop places emphasis on skills. One workshop activity, for example, involves students breaking down into groups and making lists of skills involved in various types of activities. Students are always amazed to learn how many skills they learn from their freshman writing composition class as well as from waiting tables. Fifth, the workshop introduces the concepts of artifacts and includes activities that facilitate active learning where students decide for themselves what constitutes an appropriate artifact for inclusion in their portfolios. For example, what kinds of artifacts would document a volunteer activity? What kinds of artifacts would demonstrate teamwork?

Overall, the ASU Career Services introductory portfolio workshop has been extremely effective in introducing general idea regarding student portfolios to BIS students. Nonetheless, at first I ran into some major difficulties explaining the BIS portfolio requirements to students after the ASU Career Services workshop. Students let me know immediately that they were confused as to how to proceed with completing the BIS 301 portfolio assignment. Even though the ASU Career Services introductory portfolio workshop does emphasize a holistic approach to both education and career planning, students needed more clarification and guidance from the instructor, especially in terms of interdisciplinary learning and assessment. First, they needed to know exactly what elements were expected of them for their BIS 301 portfolio assignment. While the focus of the ASU Career Services introductory portfolio workshop is on doing exercises and creating artifacts critical for decision making and career planning, the exercises and artifacts required for the BIS 301 portfolio assignment are designed to facilitate integration. Second, students needed to know how exactly they were to be evaluated and graded. Third, students needed to comprehend that the BIS 301

portfolio is in fact a hybrid portfolio based on several of the portfolios described during the ASU Career Services presentation. In BIS 301, the portfolio is an integration of the personal discovery portfolio, the educational portfolio, the career development portfolio, and what could be termed an interdisciplinarity portfolio—a collection of IDS artifacts and reflection exercises about interdisciplinarity. Fourth, students needed to realize that the nature of the BIS portfolio requirement transforms as students progress throughout the program. By the time students are in BIS 402, the senior seminar, there is a shift of emphasis, as the personal discovery elements are somewhat minimized and the educational and career development elements are underscored. Furthermore, by BIS 402, students are expected to have in their BIS portfolios many examples of integration from their coursework. To avoid any possible further confusion, I began to supplement the career service portfolio workshops with my own material. In the following sections, I relate how I approach the BIS 301 portfolio, the BIS 402 portfolio, the showcase portfolio, the showcase portfolio presentation, and the BIS 402 electronic portfolio assignments.

## BIS 301 Portfolio Assignment

I begin BIS 301 by introducing the title of the course and adding my own subtitle: “Becoming Interdisciplinary.” I tell students on the very first day that they will create a student portfolio and that all the other assignments for the course are designed for eventual inclusion in their portfolios. In effect, students know from the beginning that by the end of the course they will have created individualized BIS 301 portfolios.

Later in the semester (usually after the ASU Career Services workshop), I begin explaining the BIS 301 portfolio assignment by reviewing five types of portfolios helpful to college students and the different statements of each: the personal discovery portfolio, which answers the question, “Who am I?”; the education portfolio, which says, “Look how far I have come in my education”; the career development portfolio, which asserts, “This is where I have been and this is where I am going”; the showcase portfolio, which announces, “Look how fabulous I am!”; and the electronic portfolio, which proudly proclaims to the world, “Look how super-fabulous I am!”

After providing some historical background regarding portfolios and some context to the growing trend of the “portfolio professional,” I give very strict guidelines on how the BIS 301 portfolios should look. Sixty percent of the BIS 301 portfolio assignment grade is based on content, and the other forty

percent is based on presentation. An excellent effort will yield an excellent to good grade; a good effort will yield an average grade, and an average effort may not receive a passing grade. I explain my grading beforehand by telling students that the BIS portfolio in general is a representation of themselves and how they view their education. They certainly all worked for their degrees; therefore, their BIS portfolios are to represent visually the effort and pride they have put into their education. For this reason, an excellent effort is essential, and students cannot, and in general do not, question such reasoning. Once the students realize that the BIS portfolio requirement makes sense, not only does any student resistance disappear but also enthusiasm for doing the BIS 301 portfolio assignment abounds.

I am usually able to bring to class a former student's portfolio to show as a visual aid. To ensure an even playing field, I provide a list of required and optional elements for the BIS 301 portfolio. Required elements include a three-ring large binder, dividers, and plastic sheet covers to insure that pages do not rip. Others include a title page, a table of contents, a thoughtful mission statement, certain ASU-specific advising documents, and sample work from BIS 301. I also require elements that I have incorporated from working with ASU Career Services: a values checklist, a one-page reflection on the value checklist, a general skills list, a description of one's five top skills, a list of skills one has learned from one's coursework, and a list of skills one has gained from life/work/extracurricular/volunteer activities. I place heavy emphasis on students being able to recognize their skills and to articulate how they have developed them utilizing concrete examples. I also require students to reflect on a short summary (James 1996, pp. 179-185) of Gardner's multiple intelligence theory that I assign to supplement class discussion by including a personal strength and weakness inventory.

Additionally, I provide students with nine discovery options including personal discovery exercises, academic discovery exercises, professional exploration exercises, and integration exercises. Personal discovery exercises include taking personality assessments such as the Meyers-Briggs. Academic discovery exercises include investigating academic literature for interdisciplinary sources or analyzing an academic article in terms of its contribution to interdisciplinary research. Professional exercises include creating a professional resume that highlights one's interdisciplinary education and experience. Integration exercises vary and are modifications of actual BIS 301 class activities. They include analyzing a project or career as interdisciplinary or engaging in exercises designed to bridge one's two concentration areas. They also include analyzing a problem (e.g., sexual harassment) or

concept (e.g., time) from two or more perspectives, and then summarizing areas of overlap and conflict before concluding how the two perspectives can be integrated. The latter exercise is my adaptation of Hursh, Haas, and Moore's model of the interdisciplinary process (1983) as discussed by Klein (1990), which has been more recently reconsidered and modified by Newell (2001). Students can choose any three of the numerous options provided; thus, students decide for themselves in which of the areas they would like to do more investigation.

Students have complete freedom over what to include, for one of the goals of the portfolio is to help "students take responsibility for their own learning" (Trice 2001, p. 234). For this reason, I also encourage students to include portfolio "extras." The "extras" are extra insofar as they are external to the BIS program; students can include sample work from other classes, academic transcripts, write-ups of volunteer work, samples of artwork, as well as awards, certificate of merits, and letters of recommendation. If students fulfill all of the required and optional elements, the highest grade they can receive is a 95; to be able to receive a perfect grade of 100, they have to provide five "extra" elements or artifacts. The extras additionally enable students to express their individuality, which is also encouraged by the importance of appearance for assessment purposes. Some students create portfolios that have a scrapbook appearance as they include photographs and other personal material; others assemble very professional looking portfolios that are straightforward with no included "extras." Most students elect to include extras whenever possible.

### The BIS 402 Portfolio and the Showcase Portfolio Assignments

Students are asked to revisit the portfolios they created in BIS 301, BIS 402, and the senior capstone seminar course. Often BIS 402 is the last course students take before graduation, although many students take BIS 402 concurrently with BIS 401, the applied studies course. BIS 402 instructors create assignments in which students must integrate or bridge disciplines by utilizing interdisciplinary methods such as concept borrowing to solve particular interdisciplinary research problems or topics that the students themselves must identify.

As an assignment, the BIS student portfolio's emphasis changes somewhat as the BIS 301 portfolio transforms into a hybrid of the educational portfolio, the career development portfolio, and the showcase portfolio. As mentioned previously, the personal discovery aspect of the BIS 301 portfolio



becomes minimized in BIS 402 as the expectation is that students will be more focused on their post-graduation goals. Since students are expected to update and add to their portfolios after they take BIS 301, by the time they get to BIS 402, their BIS portfolios become rather hefty and unwieldy tomes. Although building a complete albeit bulky BIS portfolio makes sense in terms of the BIS program's curriculum, the idea of students possessing huge portfolios at graduation was both excessive and deficient in terms of student needs.

I realized these inadequacies through the BIS program's partnership with ASU Career Services. I invited ASU Career Services advisors to present their second student portfolio workshop in my initial BIS 402 classes, not comprehending that the second portfolio workshop emphasizes the concept of the student showcase portfolio. The showcase portfolio, which is a slim portfolio containing only those artifacts that I call a student's "greatest hits," is vastly different in appearance, philosophy, and function than the BIS 402 portfolio. In other words, the BIS 402 portfolio represents the entire process of the student's interdisciplinary undergraduate education. The showcase portfolio, in contrast, is a highly selective summative product of the student's interdisciplinary education; it should be limited specifically to those artifacts the students need to illustrate their achievements and necessary qualifications to prospective employers or graduate school admissions committees. Accordingly, the ASU Career Services showcase portfolio workshops instruct students how to design showcase portfolios and how to incorporate them in job or graduate school admission interviews.

Because the information provided during the ASU Career Services showcase portfolio workshop was incommensurate with my specifications for the BIS 402 assignment, students in my initial BIS 402 classes wondered what the point was of the Career Services workshop. I thought I resolved the problem the following semester when I assigned two portfolio assignments in BIS 402: the BIS 402 portfolio assignment and a showcase portfolio assignment. Students responded to my attempt at curriculum improvement by vehemently expressing their view that two portfolio assignments were excessive as they had three major research assignments (a literature review of an interdisciplinary problem, an interdisciplinary critical analysis of a photographic portrait that integrated concepts and insights from their concentration areas, and a team qualitative research project on an interdisciplinary research topic). I found myself in a dilemma torn between what I thought was best for the students conceptually and what was best in terms of actual learning experience. In my judgment, students need to complete their BIS

402 portfolio before they can put together a showcase portfolio, since the showcase portfolio is clearly the result of completing the developmental process of the BIS portfolio requirement. I was unable to decide which portfolio to drop from my syllabus, so I left it up to the students to decide by a class vote.

To my surprise, the class vote became among the students' most favorite class activity of the semester: Students engaged in a lively, impromptu class debate as they weighed the pros and cons of two portfolio assignments. Because students told me at the end of the semester that the experience of discussing the significance of the two portfolios among themselves was invaluable, I have included the class vote and class discussion in every subsequent BIS 402 I have taught. Not surprisingly, every class has voted unanimously to submit only the showcase portfolio assignment, even though I do warn them prior to the actual vote that, by so doing, the showcase portfolio assignment's worth in the course doubles. To their credit, students have been adamant about their preference: students have repeatedly told me that the showcase portfolio assignment's increased importance in the course motivates them to produce exceptional showcase portfolios that they can utilize during interviews.

## The Showcase Portfolio Presentation Assignment

To help students prepare even more for their lives after graduation, I developed a complement to the showcase portfolio assignment that subsequently was adopted as a required BIS 402 assignment: the showcase portfolio presentation. Other BIS 402 faculty have freely adapted the assignment according to what they believe works best for their course material and teaching styles. Students are to present themselves and their undergraduate education as interdisciplinary succinctly while using the showcase portfolio as a visual aid. As part of the showcase portfolio presentation requirements, students must preface their presentations by describing to the class the presentation scenarios, specifying exactly who the audience is for each presentation and for which position each student is applying. By researching specific organizations and institutions, students can better select what type of artifacts they wish to showcase during their presentations.

If a student is applying to graduate school, the audience becomes an admissions committee. Students then give showcase portfolio presentations that simulate their responses to open-ended questions during job interviews or interviews for graduate school. They are required during the presentation to

explain their degree, why they chose their degree, how they integrated their chosen disciplines, and for what purpose(s). They are encouraged to write out their answers beforehand, memorize them, and rehearse with their showcase portfolios. I grade both the showcase portfolio and the showcase portfolio presentation simultaneously as each student gives his or her presentation.

I facilitate class participation and civic responsibility by requesting that students evaluate each other anonymously on small slips of paper. Students indicate whether or not they would “hire” or “admit” the presenter, and explain the reasons why. To expedite the distribution of the peer evaluation forms, I provide a file folder for each presenter. I simply lay out all the file folders on a table once all the presentations are finished, and the students do the rest. Once the distribution is completed, the presenters pick up their file folders, replete with a considerable amount of feedback.

### The BIS 402 Electronic Portfolio Option

My interest in all things emerging and innovative led to my teaching BIS 402 online. The BIS portfolio requirement has posed some unforeseen challenges for online students. The majority of online students take the course locally. Most of them can drop off and pick up their portfolios from my office without any problems. Some online students elect to take the senior seminar elsewhere. To require out-of-state students to send even showcase portfolios via overnight mail and to provide me with the return postage would be an expensive proposition and almost punitive. I have thus given students the alternative of doing their BIS 402 portfolios, their showcase portfolios, or both, electronically. Electronic showcase portfolios in particular can be extremely effective for job searching, but admittedly electronic student portfolios remain problematic due to security and privacy issues, as Banta (2004), Cole et al. (2000), Springfield (2001), Yancey (2001), and Zatalan (2001) have each pointed out. Some BIS 402 students opted to create electronic portfolios only for their assignments, while others did in fact incorporate electronic showcase portfolios in their interviews. I have advised students to give out the website addresses for their electronic portfolios sparingly as anyone could download their documents, which include student work and personal information.

Overall, my BIS 402 students have been extremely enthusiastic about creating electronic portfolios and have succeeded in creating attractive electronic portfolios quickly even with little or no previous web page design experience. There are currently numerous free sites on the web where students can create

their own home page; an electronic portfolio can be easily created by linking documents to the home page.<sup>6</sup> Despite growing security concerns, students have expressed enough excitement over electronic portfolios for me to continue to offer it as an option. Indeed, I have been amazed by my students' positive responses to the electronic portfolio assignment option: many students have expressed feeling a tremendous sense of accomplishment from creating a complex and professional looking website about themselves for the first time. I strongly urge students to consider, however, a less problematic alternative to electronic portfolios on the Internet: electronic portfolios saved on CDs.<sup>7</sup> This way students can bring their CDs to show during interviews, and, if they should choose, leave it with prospective employers to review at their leisure. While putting one's electronic portfolio on a CD does not completely eliminate security risks, it does seem to minimize them.

## Evaluating Student Portfolios

The appendices for this essay are available online and include my grading rubrics for the BIS 301 portfolio assignment (Appendix A), the BIS 402 portfolio assignment (Appendix B), the BIS 402 showcase assignment (Appendix C), and the BIS 402 showcase portfolio presentation assignment (Appendix D). They are all available at <http://www.asu.edu/duas/bis/faculty/Augsburg>. I distribute these rubrics prior to the assignment due dates. The checklist format helps students fulfill the assignment requirements. The checklist format also allows for quick but thorough grading, which is essential for faculty members in the BIS program, who, as multi-year lecturers, teach four courses, and on average have 90 to 120 students per semester. There are other reasons that prompt grading is critical, some of which have been identified as "serious drawbacks" to using portfolios by both Trice (2000) and Banta (2004). First, portfolios are quite heavy. (I used to bring in a cart to the classroom to transport portfolios back and forth, but even with a cart, the portfolios were too cumbersome; I now require that students drop off and pick up their portfolios from faculty offices.) Second, they take up a great deal of space, raising Banta's (2004) question, "Where and how will the portfolios be stored?" (p. 3). (In the BIS program faculty must store the portfolios in their own offices.) Third, portfolios are valuable. Students are anxious to have their portfolios returned to them as they often include originals of important artifacts even though they are instructed to insert only copies of the originals.

The biggest disadvantage to the checklist format is that it does not lend

itself to careful or detailed assessments of students' integration skills. For the integration portfolio options, I give partial or even no credit for inadequate or careless attempts at integration or reflection, full credit for adequate or superior efforts. I do, however, provide detailed feedback on students' abilities to integrate in other assignments, particularly in BIS 401 and BIS 402, which are supported by detailed grading rubrics developed for each individual assignment.

## Two BIS Student Testimonials

Students often tell me in person the successes they have with portfolios. Occasionally, a student will send me an email about his or her experiences with portfolios. For the sake of brevity, I will only quote from two without comment.<sup>8</sup> The first testimonial was written by Melissa Rodgers, a BIS 301 student during summer 2001:

In BIS 301, the most influential and rewarding project was the portfolio. It allowed me as a person, and as a student, to portray areas in my life and characteristics about myself, that I was most proud of, and it also helped me to market my areas of emphasis, so that potential employers will be able to spot my talent/strengths more efficiently and faster, compared to a regular application and resume. The portfolio assignment will be kept with me for a long time to come, and it will be used until I am settled in a profession that I know I will be involved in for a long time. I found out more about myself within that week of working on the portfolio than I have my whole life. It FORCED me to strain, stretch, and search for qualities that I wouldn't have acknowledged beforehand. It was a growing experience that has helped me in getting a job in only a few weeks after the class ended. This portfolio was and is a very influential tool for work purposes, as well as in personal areas of your life.

The second one was written by R.M., a BIS 402 student, in the summer of 1999:

Hi Dr. Augsburg. This is [...] from your summer 402 class. I wanted to email you sooner but I had two more interviews yesterday, and I did another presentation too. Over the summer on my first presentation it went very well. I presented the portfolio and gave my speech version

of class. They were very impressed with the speech as well as the portfolio. They commented on the style, organization, and content of the portfolio. The vice president also showed the president the portfolio. They both took turns reading excerpts from various papers. They felt it was outstanding that a person can include academic and personal accounts of life events and be able to share them with a complete stranger. This gave them an insight as to who I was and what has happened to me thus far. I interviewed with these individuals for two hours and was offered a job on the spot. After declining that job I started working at [...] as a temporary. Yesterday I had my second interview for a full time position and did another portfolio presentation. I presented and gave the speech again. The interviewers were very impressed with the layout of the portfolio, the content, and various quotes I stated in the speech. They said it was very professional and had never been seen before. Other co-workers also viewed my portfolio and were fascinated by what I put together and how professional it was. After the interview I was the topic of conversation, as they were very impressed. I hear next week on the full time position. I hope this email gives you enough input. No matter how much students grumble about the assignment it is well worth it. I had to start from scratch and was able to put a fabulous portfolio together.<sup>9</sup> (October 14, 1999)

## Assessment, Interdisciplinarity, and BIS Student Portfolios

There can be no denying that students like to complain about a BIS portfolio assignment's amount of work immediately prior to the due date. Afterwards, BIS students are typically very appreciative of having had the opportunity to create a meaningful portfolio, and many do express their appreciation in course evaluations. Although student testimonials such as the two quoted above are helpful to individual faculty members, there is no question that the BIS program would greatly benefit from a systematic assessment of student portfolios in terms of learning outcomes and interdisciplinarity. For example, BIS students' abilities to integrate (or lack thereof) have become increasing concerns among faculty. While BIS faculty members are in complete agreement that comments such as "In order to do business, one has to communicate effectively," do not qualify as acceptable examples of integration, the faculty has a difficult time reaching a consensus of what constitutes competent, good, or excellent examples of integration. Such lacks of consen-

sus among interdisciplinarians regarding integration, notes Field and Stowe (2002), are not uncommon.

This difficulty additionally points to possible weaknesses of the developmental model to interdisciplinary studies curriculum development. With at least some class time spent on student development, less time is spent on questions involving interdisciplinarity and integration. Possible consequences include student confusion regarding differences of quality in interdisciplinary efforts, and inconsistency among faculty members' assessment of students (which only adds to student confusion). With its longitudinal approach, the student portfolio at least facilitates students to recognize progress in their ability to integrate, and it prompts faculty members to recognize improvement in students' abilities.

Between 1999 and 2001, the faculty attempted to overcome possible weaknesses and difficulties by conducting assessments of each of the BIS core courses. The results of the assessments included the learning outcomes for each class mentioned previously, and a list of learning competencies for BIS 301. Nevertheless, due to a constant shortage of faculty, other assessment projects have been postponed. For example, BIS faculty have yet to fulfill their plans to design an assessment tool that will provide more information, both qualitative and quantitative, about the efficacy of the BIS portfolio for student learning. Another future research project would conduct surveys sent to BIS graduates to learn how effective BIS student portfolios have been in helping students integrate their education with their personal and professional goals.

## Conclusion

The BIS program and the BIS student portfolio requirement continue to evolve. A case study for student growth, the BIS program is furthermore a case study for student portfolio development, implementation, and use. Its innovative partnership with ASU Career Services facilitated the implementation of the constructive-developmental aspects of the curriculum—particularly the BIS student portfolio. Although more research needs to be done to understand more fully the reasons for the program's rapid growth, the student portfolio as a performance-based authentic assessment instrument appears to have been effective for improving both student development and student learning. More assessment needs to be performed in order to determine exactly how effective, other than by virtue of its longitudinal approach, the student portfolio is in developing advanced integration skills. For the

time being, the BIS faculty at Arizona State University continue to rely on overwhelmingly positive student feedback and partnerships with other academic units in further developing, implementing, and assessing what BIS majors clearly appreciate about their degree: the BIS student portfolio requirement.

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## Notes

<sup>1</sup> Before students can declare BIS as a major, they must have completed sixty credits and have completed two classes in each of their concentration areas. Students who intend to declare BIS as their major can declare themselves as pre-BIS. As of September 2003, there were 1159 declared BIS majors and 596 pre-BIS majors, totaling 1793 students.

<sup>2</sup> To date, the BIS program has been located in the Division of Undergraduate Services, which is a unit of academic support and houses academic support programs such as service learning and writing across the curriculum. In Spring 2004, plans for ASU’s reorganization were announced, which included the creation of a University College that would include a School of Interdisciplinary Studies. The BIS program will be placed within this school. It remains to be seen how this move will change the program and attitudes towards it.

<sup>3</sup> Truman State University seniors must additionally include in their student portfolios samples of critical thinking, historical analysis, scientific reasoning, and aesthetic analysis. For more information regarding Truman State University’s Portfolio Project, see <http://www.truman.edu/pages/179.asp>.

<sup>4</sup> According to Potts (2002), forty percent of prospective students first learned about the BIS program from a fellow ASU student. In answering the question, “Why do you want to declare BIS as your major?” thirty-seven percent of the prospective students considered the BIS major because it “allowed the opportunity to combine multiple interests.” Twenty-three percent answered, “To increase marketability, and ten percent answered, “To become well rounded.” Nine percent chose the degree because they believed it would help them graduate quickly; five percent



were considering BIS because they were denied admission to an ASU professional program, and only four percent, because they believe its requirements are less stringent than for other majors.

<sup>5</sup> According to Wells (2002), who conducted a survey in his Summer 2002 BIS 302 classes, eighty-four percent of BIS majors worked during the Spring 2002 semester, and fifty percent reported working 25 or more hours.

<sup>6</sup> There is an increasing number of colleges and universities that either offer or require students to create electronic portfolios on sites made available by the schools themselves. Zubizarreta (2004) includes a list of resources on electronic portfolios (pp. 45-46).

<sup>7</sup> Both Jenkins (2001) and Zatalan (2001) suggest that students should also keep a copy on a zip disk or a rewritable CD for their own personal use, so that they can subsequently update their portfolios.

<sup>8</sup> These quotations appear in Augsburg (2004).

<sup>9</sup> The student had to “start from scratch” because the student’s BIS 301 instructor went against policy (something that did occur in the early days of the program) and did not give a portfolio assignment.

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