Writing Centers and Academic Advising: Towards a Synergistic Partnership

by Brenton Faber and Catherine Avadikian
Clarkson University

Introduction: Why Examine Academic Advising?

When considering forms of academic writing and, more broadly, the kinds of advice academic writing centers provide students, we usually think about academic communication, disciplinary forms of writing research reports, pedagogical approaches, and perhaps, on a good day, providing students with assistance on making presentations at academic conferences. Unfortunately, student mentoring, in the form of academic and professional advising, is rarely considered as a potential outcome or role of an active writing center. This article introduces academic advising as an important and useful role academic writing centers can fulfill. Academic advising can not only influence students' academic and career choices but can also play a critical role in creating and facilitating a productive academic culture within a departmental and university-wide context.

In this article, we examine the role academic advising plays within colleges and universities and we hope to start a dialogue about the connections we see between academic advising, writing instruction in academic discourse, and the mentoring roles faculty and students can play within university departments. Our introduction begins by locating advising practices within the mentoring literature. While this section is "borrowed" from outside the writing center and writing studies literature we hope it provides a useful introduction and background to our larger discussion of academic advising.

Next, we introduce our research. We surveyed faculty in business and humanities programs at six institutions about their attitudes towards academic advising, the role advising plays within their institution's reward structures, and the outcomes of academic advising. In summary, our respondents reported that they are required to advise students as part of their day-to-day job responsibilities, they find advising to be time consuming, and they believe that advising is important to the academic, social, and career success of their students. However, our respondents also reported that they received no formal training as advisors, they receive no compensation or rewards for their work as advisors, and their institutions have no mechanisms to ensure that students are receiving appropriate advice or feedback from their advisors. In short, academic advising was seen as an important academic service; yet, at many schools, such practices have not been institutionalized or "housed" within academic sites on campus.

In our discussion, we argue that academic advising is an important but under-utilized component of a student's university experience. We note that like academic writing courses, and writing center support, effective, proactive academic advising can help students better understand their respective academic disciplines and enable them to better

participate as members of their academic communities. We also argue that, like a well-integrated WID or WAC program, advising plays a direct role in forming an institution's instructional and academic culture.

We conclude by formally aligning this comparison between academic writing programs and advising programs noting that the issues facing writing programs are similar to those facing advising. Thus, we recommend that writing programs consider formally integrating aspects of academic advising. Such integration would create greater opportunities for students to learn about disciplinary cultures, academic life, and the university's larger institutional culture within an academic rather than an administrative context.

We are interested in the role faculty-student advising plays within universities because our general experience has suggested that advising is educational and that the advising process helps to construct a proactive and student-oriented organizational culture within educational institutions. What we mean here is that typically, advising or mentoring is conducted in businesses, by an experienced colleague, to teach younger/newer members "the ropes" or the culture of their new organization. We see academic advising to be a similar process within universities in which faculty and senior students work one-to-one with students to relay important cultural beliefs and values about the university and about the student's chosen academic discipline. Like their counterparts in business settings, mentors may also advocate on behalf of protégés, point out potential problems protégés may face, or help students through new and challenging professionalizing experiences.

Describing Academic Advising and Professional Mentoring Programs

Successful professionals know the value of an effective mentor. Formal and informal mentoring programs can introduce new recruits into an organization and can socialize these members into organizational cultures. As Kathryn Egan (1996) has shown, mentoring relationships often provide new members with greater job success, increased job satisfaction and "perceptions of personal power and influence within their organizations" (p. 402). Egan also notes that mentoring has become an important component of creating successful workplaces wherein women have entered traditionally male careers (401). In these environments, mentors serve as role models, provide guidance and advice, and look out for the interests of their protégé.

We view faculty-student and student-student advising as a component of the mentoring role faculty play. Although not all advisors are true mentors, all mentors regularly advise their protégés. According to King (Editor's notes), academic advising is primarily a developmental process in which, over time, students clarify life and career goals and make educational choices that will help them realize these goals (1). In this way, advising is a communicative process tied to actual decisions and real implications for students and faculty. Raushi (1993) explains that academic advising "impacts both on the student and on the college community" (p. 5), since advising enables students to develop an educational plan that matches their own interests, backgrounds, successes, and future

expectations. Raushi argues, "quality advising fosters student development and at the same time enriches the academic community, the adviser, and the society at large" (p. 5). Thus, as Raushi notes, faculty advising contributes to students' perspectives of the university and to the university's larger image of the university as an educational institution. In other words, as mentors in a business relationship teach the cultural ropes of the workplace, so to do mentors in an academic context teach the cultural ropes of their specific university.

An important component of Raushi's argument is the assumption that advising is comprised of more than simple course selection. For Raushi, advising is a process based on a relationship between the advisor and the advisee in which an advisor serves "as the hub of a student's learning experience" (p. 8). Quality advisors do not legislate courses or advice, but present choices and challenges for students who must then make informed decisions. Manuel Ramos (1993), president of the National Academic Advising Association, notes that good academic advising generally has a positive impact on students' academic performance and on students' personal satisfaction with their college experience. As a result, Ramos argues that there is a positive relationship between good student advising and student retention rates at colleges.

The above claim, that good academic advising integrates the student's social, academic, and professional interests, is not new to writing instructors who are keenly aware of the ways writing transcends subject area boundaries to include cultural issues, social issues, and professional issues. For example, Patricia Bizzell (1992) has talked about the personal implications academic writing has for students. Bizzell argues that the kinds of academic writing instruction writing programs support "work on ways of making the ethos of academic discourse more accessible to our students" (p. 35). This kind of instruction transcends issues of grammar and spelling, Bizzell notes, by requiring students to ask, "what kind of person the intellectual work of college seems to be asking them to be" (p. 35). It is in this space, where students' academic learning encounters their personal and professional learning, that advising and mentoring can be effective. In positioning writing centers as places that teach "Really Useful Knowledge," Marilyn Cooper (1996) has advocated that writing centers are "essential places where students can go to continue the conversations about ideas begun in class and in electronic conferences" (p. 97). In a description that could easily apply to academic advising personnel, Cooper argues that writing center tutors are best positioned to integrate students' academic experiences with their lived experiences and their institutional constraints.

Research Method

In an attempt to better understand the world of academic advising beyond our own institutional context, in August 1999 we mailed a survey to 192 faculty members in schools of business and humanities at 6 regional colleges in the northeastern United States. Colleges selected had small student populations, were residentially based, integrated teaching and research, and had programs in business and the humanities. Participants were randomly selected from university telephone directories. Participants included all areas of specialization within schools/colleges of business and

humanities/liberal studies (or equivalent programs). By October 1999 we received 73 responses. Of this 73, 15 were disqualified (returned to sender, not faculty member) leaving us with a data pool of 58 surveys. This number provides a return rate of 30%. A copy of the survey is included as Appendix A. Results were compiled by both researchers working together.

Results

We divided the results into 5 sections: Respondent demographics, Total time spent advising students, Level of training and perceived level of preparedness, Relationship between advising and reward structure within universities, and Perceived importance of academic advising. After reviewing our own data, we compared our results to similar national surveys conducted by Habley (1983), Habley and Morales (1998), King (1993), and Raushi (1993). In this next section we will briefly report our findings and what we learned about academic advising practices on these college campuses. We will then return to our larger discussion of writing centers and academic advising.

1. Respondent Demographics:

The majority of respondents had spent more than 20 years on faculty and had spent more than 10 years at their current institution (see Figure 1). In addition, the majority of respondents (34.5%) were full professors, with other rankings declining in order: 32.8% associate professor, 24.1% assistant professor, 6.9% instructor, 1.7% adjunct instructor (see Figure 2). This division is close to national statistics on faculty rank. The Chronicle of Higher Education (Chronicle) reports that in 1995, 29% of faculty were full professors, 23% were associate professors, 24% were assistant professors, and 12% were lecturers. The vast majority of respondents (94.8%) are required to advise students as part of their positions as university faculty (p=

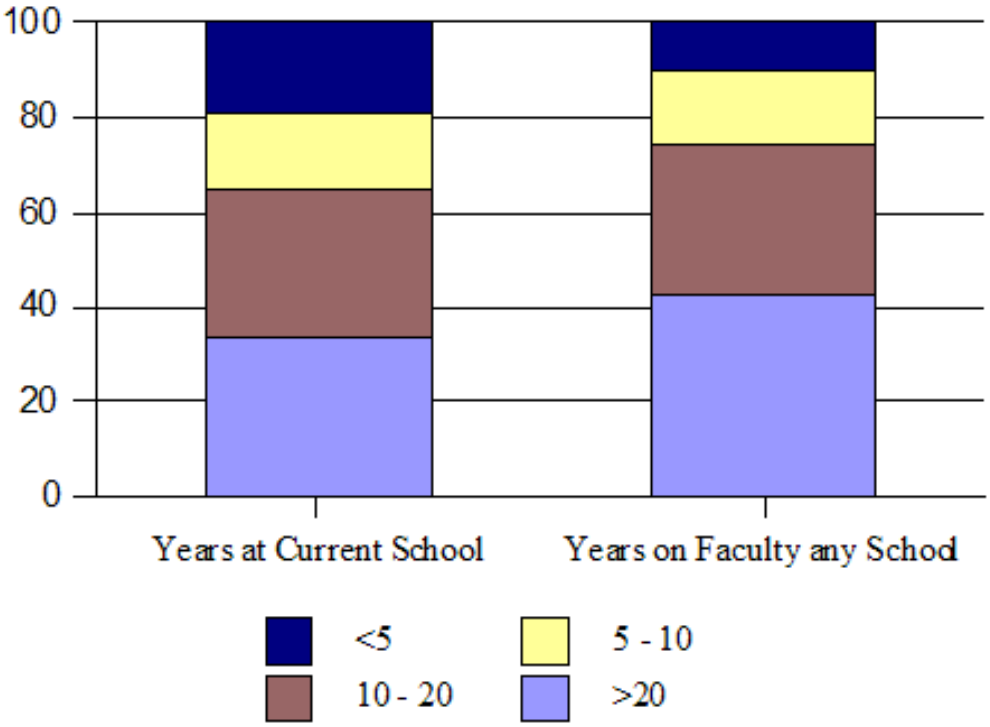

Figure 1. Faculty History

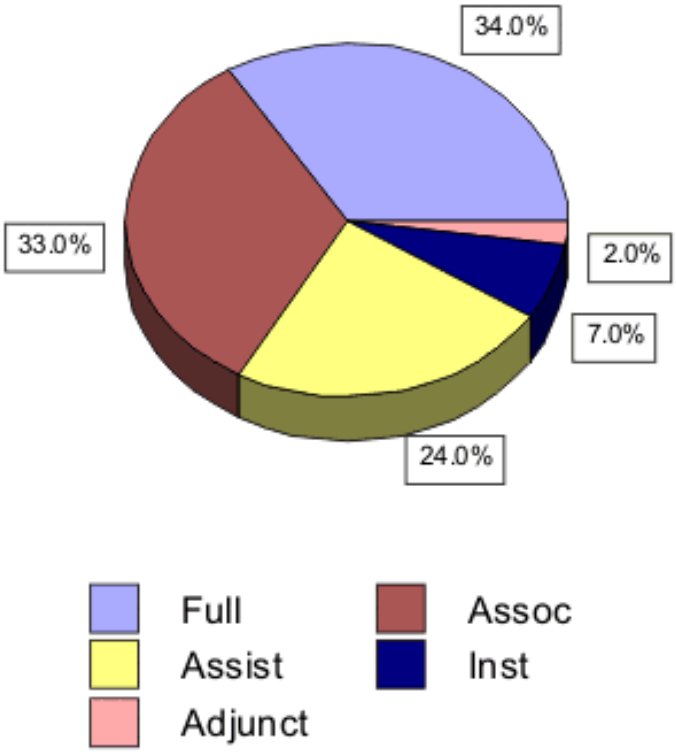

Figure 2. Faculty Rank

2. Total time spent advising students

The survey found that respondents spend a considerable amount of their time each week advising students (see Figure 3). In some cases, respondents spend more time advising students than writing or researching. The survey found that 79% of respondents spend between 10-20% of their time each week advising students. Respondents spend less time advising than on teaching but many respondents spend as much time advising as they do on their research. In addition, many respondents claimed to spend a considerable amount of time with each student. The majority of respondents (88%) spend between 15-45 minutes in each advising session: 56% spend 15-30 minutes in each session and 32% spend between 30-34 minutes in each advising session (p=<.001).

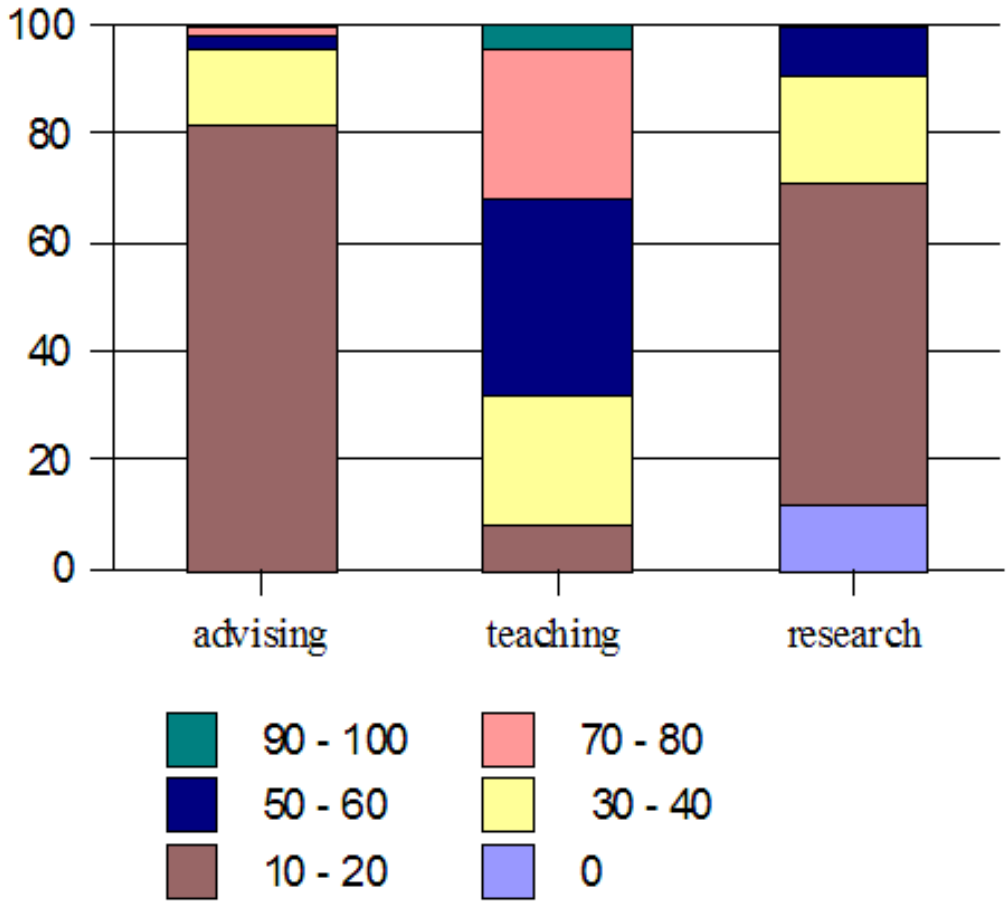

Figure 3. Time Spent Advising, Teaching, Researching each Week (advising: p = <.001, teaching p=<.01, researching p=<.001)

3. Level of Training and Perceived Level of Preparedness

As a whole, the faculty we surveyed did not think they were adequately trained to become academic advisers (see Figure 2). In addition, few respondents claimed that they were well prepared to advise students. Respondents received no significant formal training in graduate school. Some respondents had attended seminars or conferences

where they received some training and a few respondents noted that they received training from a mentor or other colleague.

The most significant source of training for faculty was informal, on-the-job training. Seventy-two per cent (72%) of respondents claimed they received significant training while on the job. This finding is important when compared to the number of respondents who claimed they received "significant training" in graduate school (0%), in seminars (6%), conferences (8%), or from mentors (8%) (p=<.001). Most of the faculty we surveyed took on their roles as faculty advisors with no training whatsoever. When asked if they felt adequately prepared to be an academic advisor, 21% of respondents claimed they felt "not at all prepared." Most faculty felt that they were either "somewhat" (33%) or "moderately" (31%) prepared for their roles as academic advisors. Only 15% felt that they were "very much" prepared for this role (p=<.001).

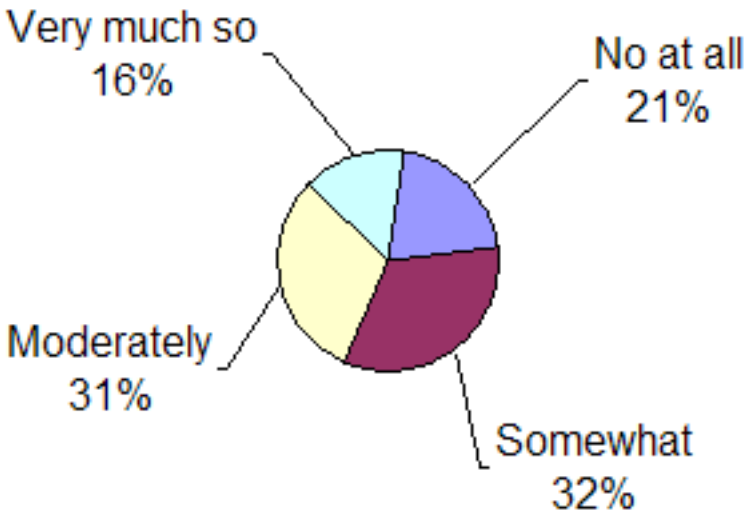

Figure 4. Perceived Preparedness for Advising

4. Relationship between advising and reward structure within universities

The majority of respondents reported that academic advising plays a minor role in tenure decisions (61%), performance evaluations (65%), salary increases (53%), and university or college awards (45%) (see Figures 5 and 6). Academic advising appeared to play the least significant role in salary increases and university or college awards. Twenty-nine per cent (29%) of respondents claimed that advising plays "no role" in salary increases and twenty-nine per cent (29%) claimed that advising plays "no role" in university or college awards.

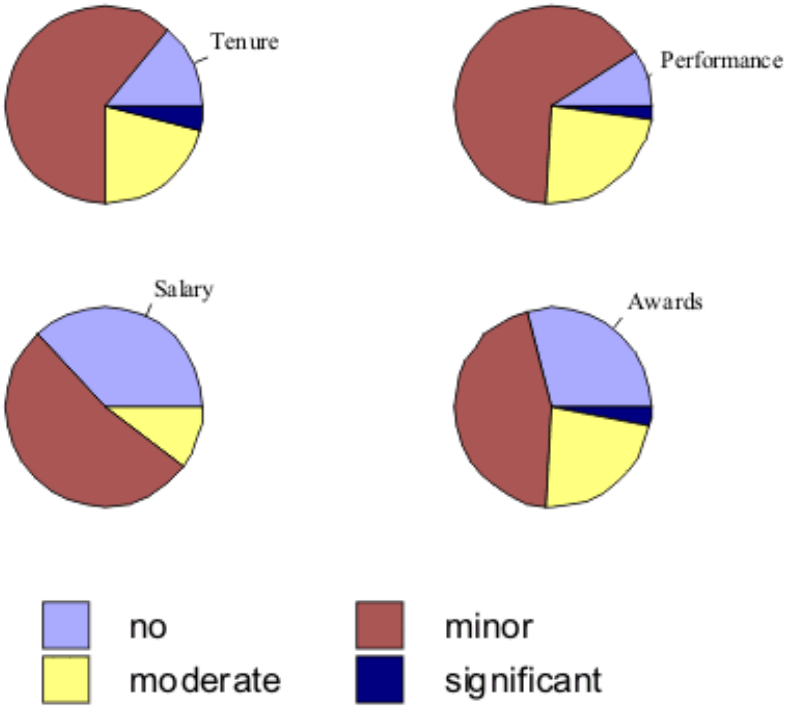

Figure 5. Role of Advising in University Rewards (tenure p=.001, Salary p=.001, performance p=.001, awards p=.001)

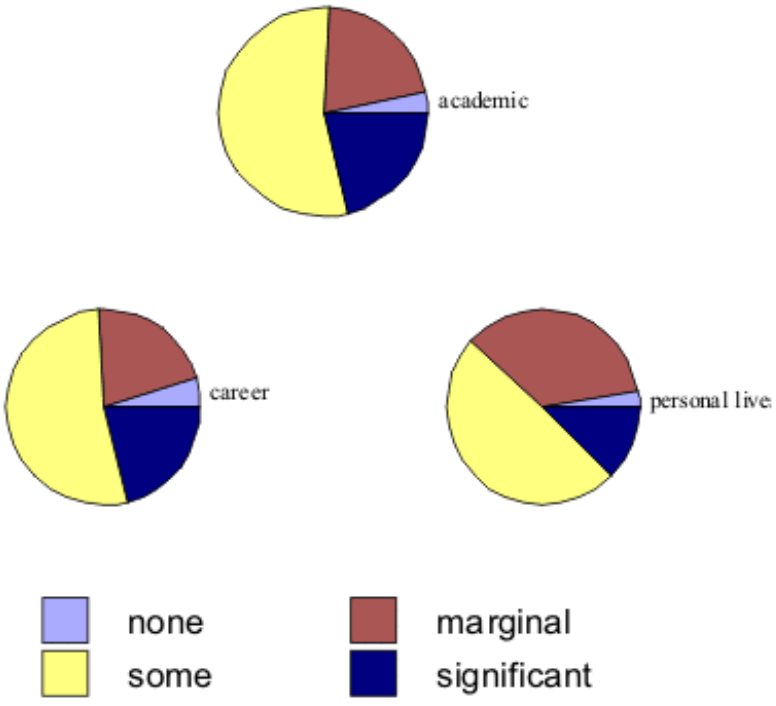

Figure 6. Perceptions about academic advising and student success (p=<.001)

5. Perceived importance of academic advising

To briefly review our survey findings, we found that even though faculty spend considerable time advising students, they receive little or no training as advisors and many feel under-prepared to advise students. We also found that there is minimal connection between academic advising and the reward structures at the universities we surveyed.

When asked to indicate the level of influence advising has on students, respondents reported positively, suggesting that advising has some beneficial influence on students' academic performance, career success, and personal lives. Fifty five per cent (55%) of respondents claimed that academic advising has "some" influence on students' academic performance. An equal percentage of respondents claimed that advising has "marginal" influence and "significant" influence on students' academic performance (21%). Only 3% felt that advising had "no" influence (p=

However, we also found that advising is not a university priority. We did not find any institutional mechanism to ensure that students are receiving appropriate advice or feedback from their advisors. More problematically, many advisors are not graduates from their current institutions, have not worked outside of the university, and have not been undergraduates themselves for some time. Together, these findings point to a haphazard, and potentially inadequate advising process. Although most universities, as organizations, claim to offer positive student experiences, student-centered education, and a supportive learning environment, a low level of commitment to student advising, coupled with fragmentary delivery mechanisms, appears contradictory to stated organizational goals.

Despite claims that indicate a positive relationship between good student advising, student retention rates, and overall student experience, few faculty reported that they were adequately prepared or trained for their roles as student advisors. Most respondents indicated that they received no formal training while in graduate school and only a few respondents noted that they received some form of training from a mentor or colleague.

Integrating Academic Writing and Academic Advising

We believe that WAC/CAC programs, WID programs, and writing centers address similar issues and educational opportunities as academic advising initiatives. By enfolding academic advising into current academic writing programs and uniting resources and practices, writing centers can provide a home for a university-wide need that is poorly met in many schools. In addition, by integrating academic advising into writing centers, writing center specialists may be able to improve the poor institutional conditions, low status, and lack of support advising receives on many campuses.

In our research and thinking about academic advising programs, we noted that many of the institutional issues facing advising such as resource allocation, training, assessment, and campus-wide buy-in are similar to issues facing writing programs and campus-wide

writing projects. At the same time, we noted that many academic writing programs strive to achieve a similar kind of campus-wide yet discipline-specific acculturation as the best advising programs. For example, academic writing programs will teach students about academic culture, about the different ways academic departments value and structure knowledge, and about the ways academic writers integrate their own findings within their academic communities. These rhetorical aspects of academic life are valuable to students beyond the writing classroom as they teach students ways to think about and navigate through their larger university experiences. Such lessons are equally the goals of academic advising programs.

Thus, we believe that a richer relationship and connection is possible between academic writing instruction and academic advising. Such a connection can be made by integrating advising issues into the writing program, using academic writing research to help students identify disciplinary knowledge and practices, and blending the rhetorical needs of students with their academic and career-related needs as emerging professionals. For example, writing assignments can integrate common advising issues and problems as ways to ask students to consider the larger personal and professional issues they are facing in their academic learning. At a larger level, writing centers and advising centers could merge into larger student-focused centers that can address multiple academic needs in a way that integrates rather than fragments the students' experiences. Writing centers can keep course listings and provide impartial advice to students on majors and minors, career options, and other academic issues. Academic advising centers can provide tutoring, writing tutorials, and writing workshops in addition to workshops on study skills, resume preparation, and career preparation.

Finally, academic writing research can help to fill the significant knowledge gap in the field of academic advising. Empirical work needs to be done to better determine the effects advising has on student socialization and retention, on disciplinary knowledge formation and socialization, and on the larger academic culture created by a university. Such research would be informed by the constructivist nature of rhetorical work in academic writing while simultaneously providing academic disciplines and departments useful ways to better mentor and prepare a new generation of students.

Learning about academic writing, as both a social and an intellectual rhetoric, plays a powerful role in a student's university experience. Similarly, academic advising can play an equally powerful role in a student's academic and professional development. Through more creative attempts to build advising practices across campus, university faculty and staff can help to create a more student-centered learning culture within their departments and campuses. In addition, by integrating academic advising topics, issues, and discussions in academic writing courses, writing faculty can emerge as campus-wide leaders in providing academic and professional support for students. This is an informal role many writing faculty already play. We suggest that by officially combining activities, projects, courses, and consultations, the writing faculty's advising role can become more formalized and more rewarding.

Strength in our marginal positions

This proposal is not without its challenges. As our research shows, academic advising is not well supported, at most schools, it is not given significant resources, and few mentors are appropriately rewarded for their advising work. Thus, combining writing centers and advising centers would not necessarily bring significantly more resources to the writing center. In fact, some could argue that this proposal would only further marginalize an already marginal part of many campuses. At the same time, writing centers are emerging as more central academic spaces on campus and as James Bell notes in his essay, "When Hard Questions are Asked," writing center directors and faculty have found compelling ways to evaluate the writing center and argue for the value the writing center brings to the larger campus. Writing centers bring a strong academic and practical discourse to the table, one that can teach advising programs how to not just survive but flourish in their 'marginal' positions. For example, Lil Brannon and Stephen North (2000) have argued that the writing center's strengths lie in this very marginality. Brannon and North claim that the writing center may need its "precarious position" (9) to do viable work. As academic spaces "positioned within and against the literacy demands of higher education" (p. 9), writing centers offer "straight talk, informal conversation, someone who cares, someone who can demystify the institution without making the student feel dumb" (p. 10). Brannon and North encourage writing centers to "exploit their marginal position" (p. 10) and use this position to their advantage. We wonder if the experiences, literature, and practices developed by writing center specialists could benefit the status and role of advising on campus. By helping to institutionalize advising, and by providing a central academic role for advising services, the writing center would expand its student focus and significantly improve an important but often neglected area of student support.

Growing the writing center into a larger center that enfolds writing instruction with academic advising, career counseling, and other forms of academic support services may be a bold move beyond the confines of marginality. And, the details of this proposal are admittedly still vague and dependent on local conditions at individual university sites. However, when looking at writing centers and academic advising practices we see many opportunities for synergistic partnerships - partnerships that we think are worth pursuing.

Works Cited

Bizzell, Patricia. (1992). *Academic discourse and critical consciousness*. Pittsburgh: University of Pittsburgh Press.

Bell, James. (2000). When hard 2uestions are asked: Evaluating writing centers. *The Writing Center Journal 21*(1), 7-28.

Brannon, Lil, and North, Stephen. (2000). The uses of the margins. *The Writing Center Journal 20*(2), 7-12.

Cooper, Marilyn. (1996). Really useful knowledge: A cultural studies agenda for writing centers. *The Writing Center Journal 14*(2), 97-111.

Egan, Kathryn. (1996). Flexible mentoring: Adaptations in style for women's ways of knowing. *Journal of Business Communication 33*, 401-425.

Habley, Wes. (1983). Organizational structures for academic advising: Models and implications. *Journal of College Student Personnel 24*, 535-540.

Habley, Wes. (1993). The organization and Effectiveness of academic advising in community colleges. In Margaret King (Ed.), *Academic advising: Organizing and delivering services for student success* (pp. 33-45). San Francisco: Jossey-Bass.

Habley, Wes and McCauley, Michael. (1987). The relationship between institutional characteristics and the organization of advising services. *NACADA Journal 7*, 27-39.

Habley, Wesley and Ricardo Morales (Eds.). (1998). *Current practices in academic advising: Final report on ACT's Fifth National Survey of Academic Advising*. National Academic Advising Association & Act Inc. Monograph Series No. 6.

King, Margaret (Ed.). (1993). Editors notes. In *Academic advising: Organizing and delivering services for student success* (pp. 1-3). San Francisco: Jossey-Bass.

King, Margaret. (1993). Advising models and delivery systems. In Margaret King (Ed.), *Academic advising: Organizing and delivering services for student success* (pp. 47-54). San Francisco: Jossey-Bass.

Ramos, Manuel. (1993). Evaluation, recognition, and reward of academic advising. In Margaret King (Ed.), *Academic advising: Organizing and delivering services for student success* (pp. 63-74). San Francisco: Jossey-Bass.

Raushi, Thaddeus. (1993). Developmental academic advising. n Margaret King (Ed.), *Academic advising: Organizing and delivering services for student success* (pp. 5-20). San Francisco: Jossey-Bass.

Appendix A: Research Questionnaire on Academic Advising

August 1999

Dear Colleague:

Please take a brief moment to complete this survey on faculty perceptions of academic advising. Your participation will make this a successful research project. **To encourage a quick response, we will give dinner for two coupons to the first 5 completed surveys we receive.**

Survey Procedures and Confidentiality Information:

Your responses to the following questions will help us develop a better understanding of the role academic advising plays within the larger system of the university. You were randomly chosen to receive this questionnaire and your responses will be held in strict confidence. Our mailing list has been coded and both the code and the list will be destroyed at the conclusion of this research. Only the supervising faculty has a copy of the research code. Once your responses have been returned, your identifying number will be removed from the survey.

Your participation in this project is entirely voluntary and has no effect whatsoever on any possible performance evaluation or review. Your answers will be kept confidential and will not be shared. If you have any questions or concerns about this research project you may contact the researcher, the supervising faculty, or Clarkson University's Office of Research at:

Ms. Cathy Avadikian (researcher)
University Studies Program
Clarkson University
Potsdam, NY 13699
Email: avadikic@clarkson.edu
Phone: (315) 268-6571

Dr. Brenton Faber (supervising faculty)
Department of Technical Communications
Clarkson University
Potsdam, NY 13699
faber@clarkson.edu
Phone: (315) 268-6466

Dr. Gina Lee-Glauser
Division of Research
Box 5630
Clarkson University
Potsdam, NY 13699
Email: leeglaug@clarkson.edu
Phone: (315) 268-6475

Thank you for your assistance.
If you have any questions or comments please do not hesitate to contact us.

Research Questionnaire on Academic Advising
Questionnaire page 1 of 5

For the purposes of this survey, we define faculty-student academic advising as an activity in which a faculty provides an individual student advice or assistance regarding one or more of the following subjects:

- academic administrative progress and completion (scheduling, course selection, major/minor requirements)
- study skills, study habits
- post-graduation opportunities (career goals, graduate school, professional school)
- personal difficulties influencing academic progress

We would like to know the amount of time you spend advising compared to your other responsibilities as a faculty member.

1.0 During a typical school year, what percent of your total work time do you spend advising students? (Please circle the appropriate number below)
0 10 20 30 40 50 60 70 80 90 100

1.1 During a typical school year, what percent of your total work time do you spend teaching students? (Please circle the appropriate number below)
0 10 20 30 40 50 60 70 80 90 100

1.2 During a typical school year, what percent of your total work time do you spend on your research/writing? (Please circle the appropriate number below)
0 10 20 30 40 50 60 70 80 90 100

1.3 What is the average length of time you spend when meeting with a student for advising purposes? (Please circle the appropriate number below)
<15 minutes 15-30 minutes 30-45 minutes 45-60 minutes >60 minutes

1.4 When you meet with students in an advising capacity do you regularly discuss (please check all that apply):

___student's schedule (preparation) ___student's academic progress
___potential majors/minors ___future academic plans
___career options and planning ___student's personal problems

1.5 Of the total time you spend with a student in an advising capacity what percent do you spend discussing (please indicate % below):

___student's schedule ___student's academic progress
___potential majors/minors ___future academic plans
___career options and planning ___student's personal problems

We are interested in any training you may have received in academic advising.

2.0 On a scale of 0-3 (0=no information learned, 1=marginal information learned, 2=some information learned, 3=significant information learned) please rank any **formal** training you may have had in academic advising. (For example, a 3 score in "graduate school" indicates that you took formal courses about advising in graduate school).

___Graduate school ___Conference, Workshop
___Seminar ___Mentor
___No training
___Other_____

2.1 On a scale of 0-3 (0=no information learned, 1=marginal information learned, 2=some information learned, 3=significant information learned) please rank any **informal** ways you learned about academic advising. (For example, a 5 score in "graduate school" indicated that you had informal experiences in graduate school which taught you about academic advising).

___Graduate school ___Conference, Workshop
___Seminar ___Mentor
___On the job ___No training
___Other_____

2.2 Do you feel you were adequately prepared to become an academic advisor?
___not at all ___somewhat ___moderately___very much so

2.3 Are you required to advise students as part of your job?
___yes ___no

2.4 Is there an academic advising center at your school?
___yes ___no

2.5 Are there regular advising sessions offered at your school?
___yes ___no

We are interested in any perceived connections between your teaching and your advising.

3.0 Do you think your **undergraduate classroom teaching:** (please check one)
___Replaces the need for individual advising?
___Is a supplement to individual advising?
___Has no relation to individual advising?

3.1 Do you think your **graduate teaching:** (please check one)
___Replaces the need for individual advising?
___Is a supplement to individual advising?
___Has no relation to individual advising?

___Not applicable, I don't teach graduate students

3.2 Do you think your **graduate students' research programs:** (please check one):
___Replace the need for individual advising?
___Is a supplement to individual advising?
___Has no relation to individual advising?

___Not applicable, I do not have any graduate student researchers.

3.3 What role does academic advising play in your:

3.3.0 Tenure Review
No role Minor role Moderate role Significant role

3.3.1 Performance evaluations
No role Minor role Moderate role Significant role

3.3.2 Salary increases
No role Minor role Moderate role Significant role

3.3.3 University/College Awards
No role Minor role Moderate role Significant role

We are interested in your perceptions about academic advising and student success.

4.0 On a scale of 0-3 (0=no influence, 1=marginal influence, 2=some influence, 3=significant influence) please rate the influence you believe your academic advising has on your students'

4.0.1 Academic Performance
0 1 2 3

4.0.2 Career Success
0 1 2 3

4.0.3 Personal Lives
0 1 2 3

Please tell us a little bit about yourself:

5.0 Faculty Rank: _____Instructor _____Assistant Professor
_____Associate Professor _____Full Professor

5.1 Years at current school: _____<5 _____5-10
_____10-20 _____>20

5.2 Years on faculty (total): _____<5 _____5-10
_____10-20 _____>20

Thank you for your insights. Would you be willing to be interviewed about your academic advising experiences? This would require approximately a one-half hour interview.

___yes (please fill out information on next page)
___no thanks

Please return survey in the attached self-addressed, stamped, envelope. Thank you.

Research Questionnaire on Academic Advising

Yes, I am willing to be interviewed about my academic advising experiences.

(To preserve the confidentiality of the survey, this page will be detached from the survey before your survey responses are recorded)

Name_____

Address_____

Phone:_____ Email:_____

I would prefer to be interviewed (please check one)

_____ in person

_____ by phone

_____ via email

Publication Information: Faber, Brenton, and Avadikian, Catherine. (2002). Writing Centers and Academic Advising: Towards a Synergistic Partnership. *Academic.Writing*. http://aw.colostate.edu/articles/faber_avadikian2002/
Publication Date: May 7, 2002

Contact Information:
Brenton Faber's Home Page: http://www.clarkson.edu/~faber/
Brenton Faber's Email: faber@clarkson.edu
Catherine Avadikian's Email: avadikia@clarkson.edu