Understanding College Generational Status in the Undergraduate Research Mentored Relationship

Jeanne Mekolichick, Michael King Gibbs *Radford University*

A web-based survey we administered to undergraduate researchers who made presentations at the spring 2011 meetings of five regional sociology associations revealed that while the 265 respondents largely found their mentored research experiences to be beneficial, there were statistically significant differences based on "college generational status." That is, our data suggest that first-generation students approach the mentoring relationship from a more utilitarian perspective than do students from families with college backgrounds. The latter students hold a broader view of the mentoring relationship, seeking to capitalize on the social networking opportunity it provides.

These findings can be explained by referring to the extensive research literature on cultural capital, which supports the importance of social class as it relates to students' educational outcomes. Cultural capital, consisting of a "…matrix of perceptions, appreciations and actions," generally aligns with class status and functions in the educational institution as an invisible resource that promotes the success of some students and hinders the achievements of others (Bourdieu 1973, 83; Stuber 2011). Differences in parenting styles between privileged families and working-class families make socioeconomically advantaged students more likely to have parents involved in their schooling and to live in home environments that foster a child's cognitive growth. By deliberately engaging them in culturally enriching activities and encouraging academic achievements, more-privileged parents are cultivating cultural capital. Conversely, working-class parents are more likely to stress obedience and tangible, work-related skills, less valued in the educational system driven by middle-class values (Lareau 2002; Lareau and Weininger 2003). Thus, children with at least one college-educated parent, termed "continuing generation students," are more likely to go to college and graduate, and ultimately, to enjoy more economic and professional success than children without college-educated parents—the first-generation students—because of the implicit cultural skills acquired from their parents. Indeed, research demonstrates that students construct the meaning of their educational experiences in ways consistent with their social class: working-class students view their schooling as a credential for subsequent careers, while middle-class students view their college careers as a time of "self-development" (Aronson 2008; Thering 2012).

Other important advantages more-privileged students possess as a result of cultural capital are increased confidence and sense of entitlement, which reveal themselves as tacit knowledge about the functioning of, and a sense of belonging in, higher education (Lareau 2002). Conversely, students who feel either intimidated or alienated by college culture may experience anxiety about approaching professors for help or involving themselves in extracurricular activities. Students who lack cultural capital are less integrated in both academic and social aspects of college life and may lack the support networks that other students can rely on as they learn to navigate higher education (Stuber 2011).

Tinto (1975, 1993) outlined a model for understanding college student success by focusing on academic and social integration. These variables, closely related to cultural capital, can forecast student success in academic environments, particularly for first-generation college students who may have fewer resources to draw on. Students who possess cultural capital, and as a result are better integrated both socially and academically, are more likely to actively seek engaging and stimulating opportunities scholastically and among their peers. These students reap the rewards of their involvement, creating wider social networks and earning more praise for their scholarly activity. Looking through the lens of cultural capital beyond college, we see these same students entering the workforce more confidently, obtaining preferred positions or pursuing advanced degrees since they recognize the value-added benefits of further education (Lareau 2002; Hill 2011; Pascarella, Pierson, Wolniak, and Terenzini 2004). Ample research supports the importance of academic integration as key to retention, persistence, and academic success among college students, as well as the challenges institutions face accommodating students with varied backgrounds, especially those who may be less readily equipped for success (see for example Pascarella et al. 2004; Pike and Kuh 2005; Terenzini, Springer, Yaeger, Pascarella, and Amaury 1996; Bourdieu 1973). Indeed, research demonstrates that first-generation students increase their stock of cultural capital, making greater gains than their continuing-generation counterparts, as they engage in collaborative learning and interactions with faculty (Filkins and Doyle 2002; Kuh, Pace, and Vesper 1997; Pascarella, et al. 2004).

A highly effective method of programmatically increasing students' academic integration has been the use of undergraduate research experiences (UREs), pairing faculty and students on research projects from conception to final product (see for example Association for the Study of Higher Education 2007; Mogk 1993; Tomovic 1994). Studies consistently report benefits of such experiences, including familiarity with the research process, increased persistence in the pursuit of an undergraduate degree, increased likelihood of graduate study, development of critical-thinking skills, and

Jeanne Mekolichick, Associate Professor at Radford University, and Research Associate Michael King Gibbs discuss their findings in the Center for Social and Cultural Research.

the ability to communicate information effectively in formal settings (Bauer and Bennett 2003; Crawford, Suarez-Balcazar, Reich, Figert, and Nyden 1996; Hunter, Laursen, and Seymour 2007; Lopatto 2004, 2007; Seymour, Hunter, Laursen, and Deatoni 2004; Shellito, Shea, Weissman, Mueller-Solger, and Davis 2001). Moreover, the aptitudes developed during the mentored URE, such as the ability to work independently, increased self-confidence, greater understanding of ethics in research, and a tolerance for obstacles can continue to benefit students as they transition from protégé to employee or graduate student (Hunter et al. 2007; Ishiyama 2002; Lopatto 2004; Mabrouk and Peters 2000; Seymour et al. 2004). Also, and not surprisingly, the groups who find these relationships especially profitable are first-generation students (Ishiyama 2002). Indeed, evidence suggests that URE mentoring increases students' academic integration and cultural capital by introducing students to the implicit knowledge and skills necessary for academic success.

Yet very little is known about UREs and the associated mentoring relationships as they pertain specifically to college generational status. Apparently only two previous exploratory studies have examined the mentoring relationship in UREs according to college generational status (Ishiyama 2007; Mekolichick and Bellamy 2012). Both of these studies found differences in expectations and experiences based on whether or not students were first-generation college students, yet both provide only a narrow view of the relationship. Ishiyama's study focuses only on first- and second-year students; Mekolichick and Bellamy separate college generational status from other variables, but rely on a very small sample. Using a larger sample of successful students who engaged in UREs, we sought to fill the void in the literature surrounding mentoring relationships and students from families with different levels of experience with college. Are there differences in student expectations of and experiences in the mentoring relationship in UREs among high achieving first-generation and continuing-generation college students?

Survey Methods

Sampling. A web-based survey was developed using *Qualtrics*, an online survey software program, and modified appropriately before being sent to five regional sociology associations in the U.S.—the Southern Sociological Society, the Pacific Sociological Society, the Midwest Sociological Society, the Eastern Sociological Society, and the Southwest Sociological Association. The survey was administered at the end of each association's spring 2011 conference. Following the research protocol approved by our Institutional Review Board, each student presenter was contacted via email and invited to participate in the study. A link in the email took respondents to the survey in *Qualtrics* where they were presented with an informed consent statement and the survey instrument. The survey was available to each conference group for about three weeks after the initial email. Some organizations shared email contacts with us. For these, we sent two reminder emails during that time seeking participation—one roughly mid-way through the three weeks and a final reminder three days before the close of the survey. For organizations that maintained the contact list, we requested that they send out reminders in a similar pattern. However, to our knowledge most presenters at these meetings were only contacted once. Since we did not have direct access to the population, we cannot calculate a response rate. Our efforts yielded a sample of 265 respondents.

Measurement instruments. The survey instrument included items asking about the respondent's mentoring expectations and experiences and basic demographics. Respondents were presented with an adapted version of Ishiyama's (2007) Mentor Role Index assessing expectations for the mentor's role. The Mentor Role Index is composed of three dimensions. Each respondent was presented with the following prompt: "A mentor's role should be…." Then respondents were presented with the following nine items categorized into three indexes: (1) the Career Support Index, composed of the following items: "to help the student find internship opportunities," "to stand up for the student and work on his or her behalf," and "to give advice on careers and graduate schools;" (2) the Research/Academic Support Index, composed of the following items: "to provide the student with guidance in finding appropriate literature," "to provide the student with guidance on appropriate research techniques," and "to provide the student with guidance on selecting a research topic;" and (3) the Personal Consideration Index, composed of "to listen to the student's personal concerns," "to be a good listener," and "to be a friend." Items were measured on a three-point Likert scale ranging from "not important" (0) to "very important" (2).

Building on the themes identified in Ishiyama's (2007) interviews to assess expectations of a "good" mentor, we presented respondents with a drop-down box of the following six characteristics: "Expert in their field," "Accessible," "Friendly," "Communicative of goals and plans," "Personally concerned with student's welfare," and "Helpful with project," along with an open-ended category listed as "Other, please specify." Respondents were prompted to "rank the MOST important characteristic of a 'good' mentor to the LEAST important characteristic of a 'good' mentor."

To assess respondents' experiences, they were presented with the same list described above and asked to rank the most important (1) to the least important (6) benefits of their experiences with their mentor on the project that led to their presentation. As a second measure of the respondents' experiences, we asked them to rank the most important (1) to the least important (5) benefits of their experience from the following list: "enhancement of professional or academic credentials," "clarification of career path," "understanding the research process in my field," "developing a continuing relationship with a faculty mentor," "learning a topic in-depth," and "other, please specify." Finally, respondents were asked to complete the following statement: "My experience working on the project I presented at the 2011 [appropriate conference] Annual Meeting with my mentor…"

Results

Of the 265 respondents, 78 percent were white, 74 percent were women, and 62 percent were continuing-generation students with an average age of 23.7 years (sd = 5.87). The sample contained mostly juniors (14 percent) and seniors (83 percent). Not surprisingly, these are successful students, with a mean GPA of 3.59 (sd = .33). A majority of respondents (78 percent) were presenting their research at a conference outside of their home institution for the first time. Students largely reported their experiences as challenging but rewarding, saying the experiences allowed them to enhance their research skills while building a relationship with a mentor that may have lasting benefits. Many students also cited the experience as very influential in their decision to pursue an advanced degree in sociology.

Expectations of mentoring. Expectations were measured using an adapted version of Ishiyama's (2007) Mentor Role Index, described above. The theoretical range for the index is 0 to 27, with an actual range of 13 to 27, a mean of 22.65 and a standard deviation of 2.86. Independent samples t-tests indicate no significant differences in means by college-generational status ($t(230) = 1.80$, $p > .05$). Analyses conducted of the three sub-indexes revealed similar results; no significant differences exist between the groups. However, when we examined each item comprising the index individually, one difference appeared. As can be seen in Table 1, independent samples t-tests indicate that, compared to their counterparts, continuing-generation students emphasized the importance of mentors "standing up for the student and working on his or her behalf" ($t(193.62) = 2.53$, $p < .05$).

Table 1. Group Differences for Mentor Role Index

	First Generation		Continuing			
	x	sd	x	sd	df	t
CAREER SUPPORT INDEX						
Give career & grad school advice	2.79	.464	2.85	.374	155.77	1.14
Help find internships	2.69	.533	2.68	.466	237	-.07
Stand up for student	2.16	.634	2.37	.661	193.62	2.53*
RESEARCH/ACADEMIC SUPPORT INDEX						
Help with research techniques	2.81	.447	2.81	.424	238	.04
Help finding literature	2.56	.581	2.62	.527	239	.82
Help with research topic	2.34	.690	2.42	.605	238	.89
PERSONAL CONSIDERATION						
Be a good listener	2.67	.559	2.71	.471	239	.54
Listen to personal concerns	2.27	.716	2.38	.682	238	1.22
Be a friend	2.00	.747	2.08	.681	235	.84

*$p < .05$

Respondents were also asked to rank characteristics of a "good" mentor. Table 2 lists the characteristics from the highest to lowest overall ranking. Independent samples t-tests indicate a difference in emphasis for first-generation and continuing students. First-generation students ranked "expert in their field" higher than continuing students ($t(231) = 2.88$, $p < .01$). Continuing-generation students ranked being accessible as more important than their first-generation counterparts ($t(231) = -2.08$, $p < .05$). With regard to mentoring expectations, then, the data indicate a pattern of continuing-college students emphasizing the expectation of mentors as advocates and focusing on their accessibility, whereas first-generation students valued the expert status of their mentors, findings we feel are consistent with the existing literature.

Table 2. Group Differences for Characteristics of a "Good" Mentor, from Highest to Lowest Overall Ranking

	First Generation		Continuing			
	x	sd	x	sd	df	t
Accessible	2.64	1.38	2.29	1.19	231	-2.08*
Expert in their field	2.80	1.80	3.52	1.85	231	2.88**
Helpful with project	3.72	1.68	3.56	1.58	231	-.74
Communicative of goals	3.80	1.48	3.61	1.55	231	-.95
Personally concerned	3.93	1.77	3.68	1.93	232	-.98
Friendly	4.17	1.62	4.42	1.40	161	1.21

*$p < .05$, ** $p < .01$

Valuing mentoring. A pattern of differences in emphasis was also found in our three measures of mentoring experience. First, respondents were asked to rank the most important to least important characteristics of their mentor for the research resulting in the respondents' conference participation. Table 3 shows that independent samples t-tests reveal that continuing-generation students ranked "friendly" as a more important characteristic of mentors than did first-generation students ($t(220) = 2.27$, $p < .05$).

Table 3. Group Differences in Value Ascribed to Mentoring Characteristics, from Highest to Lowest Overall Ranking

	First Generation		Continuing			
	x	sd	x	sd	df	t
Accessible	2.67	1.60	2.95	1.49	220	1.30
Expert in their field	2.98	1.76	3.15	1.83	220	.70
Personally concerned	3.74	1.77	3.49	1.94	220	-.99
Friendly	3.46	1.48	3.92	1.43	220	2.27*
Helpful with project	4.04	1.72	3.61	1.72	220	-1.77
Communicative of goals	4.13	1.62	3.99	1.62	220	-.66

*$p < .05$

When asked to rank the benefits gained from their experience, continuing-generation students ranked "developing a continuing relationship with faculty member" higher, at statistically significant rates, than did first-generation students ($t(155.81) = -2.45$, $p < .05$), which is reported in Table 4. First-generation students, in contrast, ranked "enhancement of professional or academic credentials" higher, at statistically significant rates, than did continuing-generation students ($t(217) = 2.19$, $p < .05$). Once again, continuing-generation college students are emphasizing the personal and professional aspects of the mentor-protégé relationship, whereas the first-generation students are focusing on professional development.

Table 4. Group Differences for Benefits Gained, from Highest to Lowest Overall Ranking

	First Generation		Continuing			
	x	sd	x	sd	df	t
Enhance Credentials	2.28	1.29	2.68	1.31	217	2.19*
Understand Research Process	2.44	1.13	2.65	1.29	217	1.22
Develop Relationship with Mentor	3.24	1.47	2.76	1.31	155.81	- 2.45*
Learning a Topic In-depth	3.50	1.44	3.20	1.52	217	-1.45
Clarification of Career Path	3.68	1.25	3.80	1.34	217	.62

*$p < .05$

Qualitative data gathered on respondents' (N=179) experiences working with their mentors reflected the quantitative findings. Using the seven themes identified by Seymour and her colleagues (2004) of the benefits students cited from their URE, we coded the responses to our open-ended item asking about the respondents' experiences working on the project they presented at the regional meeting. We made one modification to their codes based on our data. In lieu of "other benefits," our data included a large number of nonspecific, generally positive remarks about their experiences, such as "eye-opening," "life-changing," "great," and "rewarding." We coded these as "nonspecific positive experience," which accounted for 30 percent of all observations.

Table 5. Student-Cited Benefits of the Mentored Experience

Themes	First Generation % observations	Continuing Generation % observations	% Difference	% of all Observations
Nonspecific positive experience	34	28	21	30
Personal/professional gains	18	30	67	26
Thinking and working like a scientist	12	14	17	13
Enhanced career/graduate school preparation	14	10	40	11
Changes in attitudes toward learning and working as a researcher	6	11	83	10
Skills	12	7	71	9
Clarification, confirmation, and refinement of career/education paths	8	8	0	8

As can be seen in Table 5, notable differences were observed based on college-generational status regarding three benefits from the mentored research experience. The largest percentage difference between the two groups was found in "changes in attitudes toward learning and working as a researcher." Continuing-generation college students stated this benefit 83 percent more often than first-generation students. This category included respondents' statements indicating a shift in attitudes about taking on increasing responsibility, learning to work independently, and thus achieving greater gains in confidence and ownership of their projects. For example, one respondent remarked: "I have developed my capacities as a researcher as well as my professional confidence realizing that I can actively pursue and be creative with my own interests in sociology." Secondly, first-generation students reported gains in "skills" 71 percent more often than their continuing-generation counterparts. Student researchers identified "new methodologies," "presentation skills," and "how to construct a professional-style paper" as skills gained.

Finally, continuing-generation college students reported "personal/professional gains" 67 percent more often than their first-generation counterparts. Here students described a personal development to which they attached a professional value. Examples of such responses include: "encouraged me to make my project better, pushed me, and kept me sane" and "was fantastic … it was great to make a personal yet professional connection with someone in my potential field of study." These findings are consistent with our quantitative data and the literature in suggesting continuing-generation college students report their UREs as producing both personal and professional gains, whereas first-generation students focus on enhanced professional qualifications.

When considering our results, we must also reflect on the limitations of this study. The main areas of concern are our sampling method and sample size. We employed a non-random sample of undergraduate sociology researchers consisting of 265 respondents. As such, our findings cannot be generalized. It is possible that our findings could vary greatly among undergraduate researchers from other disciplines and if random sampling were employed. While we acknowledge these limitations, our goal for this paper was exploratory. We intended to gather data about student expectations and experiences in UREs as they vary by college generational status to begin filling a void in the literature and to offer these perspectives to faculty mentors of UREs.

Discussion and Conclusion

The scant literature on the effects of parental educational attainment on students' perceptions of the mentoring relationship in UREs is consistent in identifying differences among students (Ishiyama 2007; Mekolichick and Bellamy 2012). Our project sought to explore whether differences in college generational status persist among high-achieving students engaging in UREs. All the students in our sample are successful. They have high GPAs, successfully conducted and presented original research at a disciplinary conference, have clearly identified graduate school and career aspirations, and perceived their URE as positive and beneficial. Our findings are consistent with the literature on student-identified aspects of good UR mentors. Students expect their mentors to be experts in their fields, to stand up for them and work on their behalf, to be accessible and approachable, to communicate clearly, and to be organized and supportive.

Our data suggest, however, that high-achieving first-generation students might approach and experience the mentoring

relationship differently than high-achieving continuing-generation college students. The first-generation students in our study approach the mentoring relationship from a more utilitarian, pragmatic perspective than the other students, thinking primarily about the educational and career-specific skills gained and commenting on the tangible benefits of their experience. These findings are consistent with the literature proposing that first-generation students view their college education as a job credential (Aronson 2008; Thering 2012). Continuing-generation college students, while mindful of the academic benefits, value the social networking opportunity the mentoring relationship affords, commenting on the connection between the personal and professional-development value of the experience. These findings suggest college generational status may impact a student's orientation toward education; they are consistent with Lareau's (2002) discussion of the consequences of parenting styles and the transmission of cultural capital.

What, then, is the value of these findings for UR mentors and administrators? Our findings offer two suggestions. First, as UR program directors and mentors seek to recruit first-generation students, they might do well to emphasize in their marketing efforts the practical benefits of UREs for graduate school and careers, translating the value of the experiences into tangible outcomes and credentials. Second, after first-generation students have been successfully recruited for UREs, mentors should make it a point to educate these students on the importance of the personal-professional networking connections afforded by these experiences. Making a specific effort to highlight and frame the importance of networking will help first-generation students understand the experiential benefits of the process of engaging in UREs, as well as the products.

Looking ahead, utilizing a larger, more diverse sample, further exploration of this topic may yield additional options for administrators and mentors to better serve varied groups of students by attuning educators to the disparate attitudes toward the perceptions and benefits of UREs. Our research, though limited in scope, does support existing studies related to the consequences of college-generational status and offers a framework for understanding how it influences student perceptions and expectations of mentors in UREs. Further, despite its limitations, this work provides a platform on which future research can successfully build to advance UREs for all student participants.

References

Aronson, Pamela. 2008. "The Markers and Meanings of Growing Up: Contemporary Young Women's Transition from Adolescence to Adulthood." *Gender and Society* 22(1): 56–82.

Association for the Study of Higher Education. 2007. *ASHE Higher Education Report*. 33(4): 45-74.

Bauer, Karen, and Joan Bennett. 2003. "Alumni Perceptions on the Value of Undergraduate Research." *Journal of Higher Education* 74(2): 210-230.

Bourdieu, Pierre. 1973. "Cultural Reproduction and Social Reproduction." In Power Ideology in Education, edited by Jerome Karabel and A.H. Hasey. NY: Oxford University Press.

Crawford, Isiaah, Yolanda Suarez-Balcazar, Jill Reich, Anne E. Figert, and Philip Nyden. 1996. "The Use of Research Participation for Mentoring Prospective Minority Graduate Students." *Teaching Sociology* 24: 256-263.

Filkins, Joseph W. and Susan K. Doyle. 2002. "First Generation and Low Income Students: Using the NSSE Data to Study Effective Educational Practices and Students." Paper presented at the Annual Meeting for the Annual Forum for the Association for Institutional Research, Toronto, Canada, June 2002.

Hill, Sandra. 2011. "Making Connections: The Role of Social Capital in the Enhancement of Employability of First Generation Business Studies Graduates." *Widening Participation and Lifelong Learning* 13(2): 33-50.

Hunter, Anne-Barrie, Sarah Laursen, and Elaine Seymour. 2007. "Becoming a Scientist: The Role of Undergraduate Research in Students' Cognitive, Personal, and Professional Development." *Science Education* 91(1): 36-74.

Ishiyama, John. 2002. "Does Early Participation in Undergraduate Research Benefit Social Science and Humanities Students?" *College Student Journal* 36: 380-387.

Ishiyama, John. 2007. "Expectations and Perceptions of Undergraduate Research Mentoring: Comparing First Generation, Low Income White/Caucasian and African American Students." *College Student Journal* 41: 540-549.

Kuh, George D., Robert C. Pace, and Nick Vesper. 1997. "The Development of Process Indicators to Estimate Student Gains Associated with Good Practices in Undergraduate Education." *Research in Higher Education* 3(8): 435-454.

Lareau, Annette. 2002. "Invisible Inequality: Social Class and Childrearing in Black Families and White Families." *American Sociological Review* 67: 747-776.

Lareau, Annette and Elliot Weininger. 2003. "Cultural Capital in Educational Networks: A Critical Assessment." *Theory and Society* 32: 567-606.

Lopatto, David. 2004. "Survey of Undergraduate Research Experiences (SURE): First Findings." *Cell Biology Education* 3: 270-277.

Lopatto, David. 2007. "Undergraduate Research Experiences Support Science Career Decisions and Active Learning." *CBE-Life Sciences Education* 6(4): 297-306.

Mabrouk, Patricia Ann, and Kristen Peters. 2000. "Student Perspectives on Undergraduate Research (UR) Experiences in Chemistry and Biology." *Council on Undergraduate Research Quarterly* 21: 25–33.

Mekolichick, Jeanne and Jessica Bellamy. 2012. "Research Experiences for Undergraduates: Student Presenter's Perceptions of Mentoring and Conference Presentation by College Generational Status and Sex." *Perspectives on Undergraduate Research Mentoring* 1.2 http://blogs.elon.edu/purm/research-experiences-for-undergraduates-student-presenters%e2%80%99-perceptions-of-mentoring-and-conference-presentation-by-generational-status-and-sex-purm-1-2.

Mogk, David. 1993. "Undergraduate Research Experience as Preparation for Graduate Study in Geology." *Journal of Geology Education* 41: 126-128.

Pascarella, Ernest, Christopher Pierson, Gregory Wolniak, and Patrick Terenzini. 2004. "First-Generation College Students: Additional Evidence on College Experiences and Outcomes." *Journal of Higher Education* 75(3): 249-284.

Pike, Gary R., and George Kuh. 2005. "First- and Second-Generation College Students: A Comparison of Their Engagement and Intellectual Development." *The Journal of Higher Education* 73(3): 276-300.

Seymour, Elaine, Anne-Barrie Hunter, Sandra Laursen and Tracee Deatoni. 2004. "Establishing the Benefits of Research Experiences for Undergraduates in the Sciences: Findings from a Three-Year Study." *Science Education* 88(4): 493-534.

Shellito, Cindy, Kalyn Shea, Gary Weissman, Anke Mueller-Solger and William Davis. 2001. "Successful Mentoring of Undergraduate Researchers: Tips for Creating Positive Research Experiences." *Journal of College Science Teaching* 30: 460-464.

Stuber, Jenny. 2011. "Integrated, Marginal and Resilient: Race, Class and the Diverse Experiences of the White First Generation College Students." *International Journal of Qualitative Studies in Education* 24(1): 117-136.

Terenzini, Patrick, Leonard Springer, Patricia Yaeger, Ernest Pascarella, and Nora Amaury. 1996. "First-Generation College Students: Characteristics, Experiences, and Cognitive Development." *Research in Higher Education* 37(1): 1-22.

Thering, Angela. 2012. "White, Working Class, First Generation College Student Narrations of the 'Value' of a College Education." *The International Journal of Learning* 18: 49-60.

Tinto, Vincent. 1975. "Dropout from Higher Education: A Theoretical Synthesis of Recent Research." *Review of Educational Research* 45: 89-125.

Tinto, Vincent. 1993. *Leaving College: Rethinking the Causes and Cures for Student Attrition,* 2nd ed. Chicago: University of Chicago Press.

Tomovic, Mileta. 1994. "Undergraduate Research-Prerequisite for Successful Lifetime Learning." *American Society Engineering Education Annual Conference Proceeding* 1: 1469-1470.

Jeanne Mekolichick

Radford University, jmekolic@radford.edu

Jeanne Mekolichick is associate professor and chair of the Department of Sociology and director of the Center for Social and Cultural Research at Radford University, in Radford, Virginia. She earned her PhD in sociology from Kent State University in 1999. At Radford University, she has mentored numerous undergraduate research projects and collaborated with a variety of local and regional partners conducting community-based work. She has served as a CUR councilor since 2006 and as a facilitator at the CUR Institute on Mentorship, Collaboration, and Undergraduate Research in the Social Sciences and Humanities since 2008.

Michael King Gibbs served as research associate at the Center for Social and Cultural Research at Radford University, in Radford, Virginia. A Marine Corps veteran, he earned his BS in sociology from Radford in May 2012 and is continuing his education at George Mason University, studying public policy and national security.