

2004 AIR/ NPEC RESEARCH GRANT/DISSERTATION PROPOSAL

Association Between Motivation and General Education Standardized Test Scores

Data set of interest: Collect primary data

Grant Amount Requested: \$29,931.13

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Project Summary

The assessment of student learning has proved to be one of the major challenges for any institution of higher education for a number of reasons, including student motivation to perform well on general education tests (Banta, 2002; Palomba & Banta, 1999). However, there has been scant research as to the association of motivation and test performance. The small body of literature that does exist primarily examines motivation and testing at the elementary and secondary school levels. There is very few, if any, published research papers in peer reviewed journals addressing this issue in post-secondary education. This proposal will address the problem of test motivation and examine the extent to which test performance on a general education exam is being undermined by low student motivation.

This project will work closely with six to seven institutions of higher education to collect student motivation data and their scores from *College BASE*, a criterion-referenced academic achievement examination.

The research questions guiding this proposal include:

1. How much effort do students report putting into low stakes standardized tests?
2. Does the amount of reported effort vary by group (e.g., gender and ethnic groups)?
3. Does the amount of reported effort predict test scores after controlling for college entrance exam scores (ACT and SAT)?
4. Are certain subject areas (e.g., math) more susceptible to low effort?

It is vital that we better understand the strengths and weaknesses of low-stakes testing in higher education, especially given the political and financial pressures many institutions face to demonstrate student learning. This unique study would provide valuable information regarding the relationship of college student motivation and standardized test scores.

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Project Description

Statement of problem and variables

Many universities have adopted standardized tests to measure student success in learning academic material. The most popular tests used for this purpose include *College BASE*, California Assessment of Academic Proficiency (CAAP), and Academic Profile (published by Assessment Resource Center, ACT, and ETS, respectively). These exams are typically administered to undergraduates as a low stakes test in order to measure content knowledge in the general education subject areas. Universities often use the resulting data to assess the effectiveness of their general education programs.

However, the assessment of student learning has proven to be one of the major challenges for many institutions of higher education for a number of reasons, including student motivation to perform well on general education tests (Banta, 2002; Palomba & Banta, 1999). Low student motivation raises the concern of whether the data collected are a valid measure of student abilities in general education subject areas. As stated by Banta (2002), "the challenge to motivate our students . . . is probably the most vexing assessment problem we face" (p. 71).

This proposal will address the problem of test motivation and examine the extent to which test performance on general education exams are being undermined by low student motivation. The basic questions to be addressed are the following:

1. How much effort do students report putting into low stakes standardized tests?
2. Does the amount of reported effort vary by group (e.g., gender and ethnic groups)?
3. Does the amount of reported effort predict test scores after controlling for college entrance exam scores (ACT and SAT)?
4. Are certain subject areas (e.g., math) more susceptible to low effort?

Institutions of higher education are expected to document that they have not only the resources to provide excellent learning opportunities for students, but also that students are in fact learning (Palomba & Banta, 1999; The Higher Learning Commission, 2002). This includes learning subject matter within the students' majors and more broadly in subject areas typically referred to as general education. The importance of general education as an educational outcome in higher education is well stated by The Higher Learning Commission of the North Central Association of School and Colleges, "Understanding and appreciating diverse cultures, mastering multiple modes of inquiry, effectively analyzing and communicating information, and recognizing the importance of creativity and values to the human spirit not only allow people to live richer lives but also are a foundation for most careers and for the informed exercise of local, national, and international citizenship" (Commission Statement on General Education, February 21, 2003).

The extent to which learning occurs and can be documented in general education subject areas such as math, science, English and social science is the result of an effective assessment program (Banta, 2002; Palomba & Banta, 1999). Many forms of assessment can be utilized to assess general education knowledge and the effectiveness of a general education program, each with some advantages and disadvantages (Banta, 2002; Palomba & Banta, 1999). Some of these include portfolios, authentic assessments, performance assessments, and standardized tests. For many institutions, an effective assessment program utilizes multiple methods for assessing the effectiveness of a general education program. The first three types of assessments noted above have some advantages over the use of standardized tests. However, standardized tests have some distinct advantages. One is that data collected from these instruments are uniform and therefore

can be used for comparison purposes or to track effectiveness longitudinally. Also the three most popular tests used for general education assessment (Academic Profile, CAAP, and *College BASE*) all have been demonstrated to be psychometrically sound instruments. Another advantage is that these tests can be administered to large numbers of students by minimal staff. Given these advantages, many institutions choose to use standardized tests as one indicator of the effectiveness of their general education program. However, there may be a major problem with the use of standardized tests to measure student achievement: student motivation to do well on them (Wainer, 1993). Many attribute this low motivation to the fact that most tests are administered as "low stakes" tests (Banta, Lund, Black, & Oblander, 1996). In other words, the score a student receives on a test to measure general education knowledge on most college campuses has no consequence to the student at all. Because students face no consequences for their scores, we really don't know if they try to answer every question to the best of their abilities. This presents at least one problem since the theory that underlies the scoring of standardized tests assumes that students will try to the best of their abilities to answer each question on the test (Anastasi & Urbina, 1997; Hambleton, Swaminathan, & Rogers, 1991). Indeed, in other areas of education, some research suggests that low student motivation can undermine the validity of test data (Brown & Walberg, 1993; DeMars, 2000; Wolf & Smith, 1995).

Overall, there has been scant research as to the association between motivation and test performance. In fact, this research team only found 14 published papers in peer-reviewed journals on the topic of student motivation and test performance. The small body of literature that exists primarily examines motivation and testing at the elementary and secondary school

levels. There are very few, if any, published research papers in peer reviewed journals addressing this issue in post-secondary education.

Of the 14 studies, seven of them included quantitative measures of motivation (O'Neil, Sugrue, & Baker, 1995/1996; Wolf, Smith, & Birnbaum, 1995; Kiplinger & Linn, 1995/1996; Karmos & Karmos, 1984; Fleming, 2002; Wolf & Smith, 1995; Wong, Wiest, & Cusick, 2002). The other studies did not measure motivation *per se*, but rather assumed motivation was associated with other factors that were measured or manipulated (e.g., test consequence).

One consistent finding from these studies was that motivation was correlated with test performance. For instance, O'Neil et al. (1995/1996) found that student "effort" was significantly correlated with grade 8 and 12 math performance on the National Assessment of Educational Progress (.24 and .22 respectively). Wolf and Smith (1995) also reported significant correlations between motivation and test performance. For students taking tests that had academic consequences, the correlation was .351, whereas for student taking non-consequential tests the correlation was .232. Karmos and Karmos (1984) also reported that student motivational attitudes were significantly correlated with performance on the Stanford Achievement Test. However, not all studies concluded that an increase in motivation will lead to increased scores on low stakes tests. Specifically, in a controlled study using random assignment to one of four treatment groups, O'Neil et al (1995/1995) reported that for grade 8 students, increasing motivation *did* increase the student test scores. However, they also reported that increasing the motivation of grade 12 students *did not* lead to improved test scores. Whether this finding is consistent or inconsistent with other research is hard to say given the paucity of research in this field. Further, these results tell us little about the association between motivation and test performance on general education exams.

There is also some evidence that low student motivation may not uniformly affect test scores. The relationship of motivation to test scores may vary between high and low achieving students, males and females, and between ethnic groups. For instance, some researchers have found that African American students are particularly prone to low test scores, possibly the result of low motivation (Lattimore, 2001; Walpole, McDonough, Bauer, Gibson, Kanyi, & Toliver, 2002). One possible explanation is the phenomena of "acting white." Acting white suggests that students who are members of certain ethnic groups, especially African American and Latino, may reject academic achievement and not try hard (Fordham & Ogbu, 1986; Ogbu & Davis, 2003). However, their research suggests that some minority students try to do well in school and achieve high grade point averages (Bergin & Cooks, 2002; Mirón & Lauria, 1998). Nearly all of the research on acting white has been done with high school students. Presumably, students who most stridently reject academic achievement do not attend college and will not be in our pool of subjects. Nevertheless, students in college can reject academic achievement to some degree, especially on low-stakes tests. While the proposed study is not designed to directly test the acting white hypothesis, we will be able to test for variation in self-reported effort among ethnic groups.

Overall, studies suggest that motivation is associated with test performance in some way. However, not known much is known about college student motivation and performance on standardized tests of general education. In the context of higher education and the assessment of general education knowledge, Banta (2002) claimed that, "student motivation is a serious threat to validity in a number of testing contexts" (p. 71).

Proposal of work

This project will collect student motivation data and student scores from *College BASE*. *College BASE* is a criterion-referenced academic achievement examination that evaluates knowledge and skills in English, mathematics, science, and social studies, usually after a student completes a college-level core curriculum. Currently the test is used by more than 100 institutions across the country.

For this project we will work closely with six institutions representing both small and large public and private institutions. To date, these institutions have provided verbal (or email) agreements to participate (see table below). In total, it is anticipated that this project will collect data from least 1,500 students enrolled at these institutions.

As compensation for the work associated with participation in this study, the project will cover a portion of the costs associated with each test administered. Currently institutions pay approximately \$12 for each student to take the *College BASE* exam. We have budgeted \$3 of the \$12 charged per student with a maximum of \$500 per institution.

Participating institutions

Institution	Contact, Title	Public/ private	Total enrollment
Univ of Tennessee-Chattanooga Chattanooga, TN	Janice Whitehead, Testing/Assessment Coordinator	Public	8,524
Univ of Wisconsin-Green Bay Green Bay, WI	Lucy Arendt Testing/Assessment Coordinator	Public	5,411
Jacksonville State Univ Jacksonville, AL	T. Allen Smith, Ph.D. Director of Institutional Research	Public	8,930
Cornerstone Univ Grand Rapids, MI	Tim Detwiler, Ph.D.	Private	2,110
Davis & Elkins College Elkins, WV	Kenton McCoy, Ph.D. Assoc Dean for Student Life	Private	654
Central Missouri State Univ Warrensburg MO	Cindy Bertalott Testing/Assessment Coordinator	Public	10,313

While some institutions that use *College BASE* (CBASE) administer only certain subtests, we have selected only institutions that administer all 4 subtests. Because we are interested in how much effort students put into taking a low-stakes test, we wish to survey them immediately after they complete the test. The survey consists of approximately 20-25 items on one sheet of paper and should take students no longer than five minutes to complete (See Appendix). Students will respond to the survey using a scannable form specifically designed and printed for use on this project. The survey will have a brief cover letter that describes the study and asks for informed consent. These procedures may be modified by the IRB at our own institution or by any of the participating institutions when we submit for review. Part of our work on the project will be passing human subjects review as required by each participating institution, as well as our own.

Instrument

Data for this project will be collected from the standard answer sheet used by *College BASE* and from a motivation questionnaire developed specifically for this project. The answer sheet will provide data on a number of important variables including, GPA, previous test scores (e.g., ACT), total number of credit hours completed, gender, ethnicity/race, age, and class level (freshman, sophomore, etc). Also, this answer sheet will provide the data that will be used to create an individual and institutional score report for each of the subtests, as well as an aggregate test score.

The motivation questionnaire will include a modified version of Wolf and Smith's (1995) questionnaire, which showed high internal consistency ($\alpha = .89$) and unidimensionality. Other items on the questionnaire were created by the research team. These other items will collect data on self-efficacy for each test section (items 9-12), perception of test fairness (items 13a – d), rejection

of academic achievement (items 14 and 15), test-taking effort (items 16a-d), and mathematics achievement scale (items 17a – f). The instrument will be pilot tested at the University of Missouri-Columbia before being administered for the proposed study. The results of the pilot test may result in some revision of the scales. See Appendix A.

Analysis of data

The analysis of the data will focus on answering the research questions guiding this proposal:

1. How much effort do students report putting into low stakes standardized tests?
2. Does the amount of reported effort vary by group (e.g., gender and ethnic groups)?
3. Does the amount of reported effort predict test scores after controlling for college entrance exam scores (ACT and SAT)?
4. Are certain subject areas (e.g., math) more susceptible to low effort?

Analysis will include the use of correlation, hierarchical regression, and ANOVA. In particular Pearson product-moment correlation analysis will determine what significant relationship (if any) exists between the scores test scores and data collected from the motivation questionnaire. Also, hierarchical regression will be used to determine if motivation/effort provide any additional explanation to the test scores above and beyond prior academic achievement (GPA, credit hours completed, math grades, and other test scores). ANOVA will be used to determine significant differences between groups of students (gender, ethnicity, low/high achievers, etc). In addition, factor analysis will be used to determine the factor structure of the data and subscales. Internal consistency data for each subscale will also be reported.

Dissemination plan

The results of this project will be of interest to many involved with higher education. Every effort will be made to disseminate the results of this study to as many people/groups are interested. Specifically, the dissemination plan will include:

- Special institutional reports for the participating institutions.
- Presentations at the annual conventions of the Association for Institutional Research, the American Educational Research Association, and the National Postsecondary Education Cooperative.
- Papers submitted for publication in peer-reviewed journals, such as the *Journal of Higher Education*, *Journal of General Education*, *Journal of College Student Development*, *Applied Measurement in Education*.
- A .pdf file of the final report made available to anyone upon request via email and on the *College BASE* website maintained by the Assessment Resource Center.
- Final Project Report to AIR.
- Other strategies for dissemination suggested by the research team and/or AIR.

Description of policy relevance

As previously mentioned, institutions of higher education are expected to document that they have not only the resources to provide excellent learning opportunities for students, but also that students are in fact learning (Palomba & Banta, 1999; The Higher Learning Commission, 2002). These expectations come from the staff and faculty at the institutions themselves, but also increasingly from state legislatures, federal government, accrediting agencies, governing bodies, business community, and the general public. This need for accountability is the basis for

policies focused on student success and learning. Given the impact these policies can have on higher education institutions, it is important that we better understand the effective and appropriate use of standardized tests as evidence of student success.

Discussion of innovative aspects of project

As mentioned previously, there has been scant research as to the association of motivation and test performance. It is vital that we better understand the strengths and weaknesses of low-stakes testing in higher education, especially given the political and financial pressures many institutions face to demonstrate student learning. This unique study would provide valuable information regarding the relationship of college student motivation and standardized test scores.

Discussion of audience to whom the project will be important

This project will be of particular interest to those faculty and staff in higher education who are involved with general education and assessment. If they are underestimating student learning, they may wish to modify test administration procedures, including raising the stakes. However, it is important to note that high stakes tests are fraught with their own set of problems. This report will provide some guidance as to the appropriate use of standardized testing as part of an assessment program. This report would also be of interest to the staff and faculty on a campus who are part of an accreditation team and are preparing the documents necessary for the accreditation visit.

In addition, this report will be of interest to state legislatures and governing bodies in helping them to better understand the strengths and limitations of standardized testing and the most appropriate and effective use.

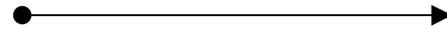
Appendix A

NOTE: This questionnaire, in its final form, will be designed by a professional graphics designer to fit on one page (one sided) and scannable on ARC’s high speed optical scanners.

Test-Taking Motivation Questionnaire -- Draft
(Items 1-8 modified from Wolf & Smith, 1995)

Please indicate how “true” each statement is of you with regard to the test you just completed.

0 = “not at all true of me” to 6 = “very true of me”



- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| 1. Doing well on this test was important to me. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. I am concerned about the score I receive on this test. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. This was a very important test to me. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. I gave my very best effort on this test. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. I could have worked harder on this test. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. I did <u>not</u> give this test my full attention. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. I am eager to find out how well I did on this test. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. I was highly motivated to do well on this test. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. I am confident that I did well on the English section. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. I am confident that I did well on the math section. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. I am confident that I did well on the social studies section. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. I am confident that I did well on the science section. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. I feel that the results of this test will accurately reflect my knowledge in: | | | | | | | |
| a. English | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| b. Math | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| c. Social studies | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| d. Science | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. The students that I spend time with <u>don't</u> want to get high grades because it will make them look too smart. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. I <u>don't</u> want to get high grades because it will make me look too smart. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

16. On a scale of 0 to 100%, where 100% means you put forth maximum effort, approximately how hard did you try on each of the following subtests?

- | | | | | | | | | | | | |
|-------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| a. English | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
| b. Math | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
| c. Social Studies | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
| d. Science | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |

17. What were your grades for math classes that you have taken?

Course	Grade
a. High school algebra	A B C D F Did not take
b. High school calculus	A B C D F Did not take
c. College remedial math	A B C D F Did not take
d. College Algebra	A B C D F Did not take
e. College calculus	A B C D F Did not take
f. College math beyond calculus	A B C D F Did not take

Note: the items below are already included on the College BASE answer sheet and will not need to be repeated in the Test-Taking Motivation Questionnaire. They are included here though to assure the reviewers that data on these variables will be included in the study.

What is your overall GPA (maximum of 4.0)? _____

What were your scores? ACT total score ____ SAT verbal ____ SAT math ____

What is your age? _____

What is your gender? Male Female

Are you . . .

Asian-Americana

African-American, Blackb

Mexican-American, Latino, Hispanic ...c

Native-American, American Indiand

White, Caucasian, European American..e

Other (write in) _____f

Class level

Freshman

Sophomore

Junior

Senior

Other

Total hours of course work completed: _____

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Biographical Sketch: James S. Cole

My primary research interests for the past couple of years have been student motivation, interest, and learning. A recent paper (in press) examined college student explanations good and bad events (explanatory style), course specific self-efficacy, and self-esteem as it relates to their achievement motivation. In a paper recently accepted for presentation, I examined the relationship of situational interest college students and course outcomes such as expected grade, course satisfaction, and course participation.

My plan is continue to focus on motivation and its influence on many aspects of college student experiences and their learning. This issue of test-taking motivation is an area I plan to focus on over the next few years. I am currently preparing a document for submission to a journal on the topic of test-taking motivations and will be submitting a proposal in mid-February to seek funding for a project that will be complementary to this project.

I have good quantitative skills and have done all (or nearly all) the analysis for all my papers and presentations. Statistical analysis I have used for past projects included, factor analysis (and principal component analysis), ANOVA/MANOVA, correlation, and hierarchical regression. Also, as senior coordinator at the Assessment Resource Center, I have coordinated and supervised many research projects involving the large scale collection of data.

Curriculum Vitae for James Stuart Cole

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Relevant Work Experience

July, 2000 – present *Senior Coordinator*, Assessment Resource Center, College of Education,
 University of Missouri-Columbia, Columbia, Missouri

- Responsible for coordinating and supervising a variety of survey research projects;
- Expertise in creating valid survey instruments that produce reliable data;
- Some recent relevant projects include 1) Co-Investigator for “Evaluation of Professional Development Projects” funded by the state of Missouri; 2) a nationwide survey of teacher education administrators and their attitudes towards teacher education entrance exams, 3) administration and reporting of data collected from K-12 students regarding their health behaviors and attitudes from selected districts for the Missouri Institute of Mental Health, 4) two-state survey of hospital administrators and patient safety practices at their hospitals.

Other Work Experiences

08/1999 – 05/2000 *Community Outreach Coordinator*, California State University, Hayward,
 Concord, California

11/1997 – 07/1999 *Coordinator of Student Services*, School of Forestry, Northern Arizona
 University, Flagstaff, Arizona

Education

Ph.D. study in progress	2001 to present	University of Missouri	Emphasis: Motivation and Learning
M.S.	1998	Texas A&M Univ	Outdoor Recreation
B.A.	1991	Burlington College	Environmental Studies

Peer-Reviewed Papers

Cole, J. S. & Denzine, G. M. (in press). "I am not doing as well as I would like to":

Understanding student situated motivations for negative academic events. *Journal of College Reading and Learning*.

Cole, J. S. & Denzine, G. M. (2002). Comparing the academic engagement of American Indian and White college students. *Journal of American Indian Education*, 41, 19-34.

Cole, J. S. (2000). Recruiting forestry students. In Focus, *Journal of Forestry*, 98, 4-5.

Cole, J. S. & Scott, D. (1999). Segmenting participation in wildlife watching: A comparison of casual wildlife watchers and serious birders. *Human Dimensions of Wildlife*, 4, 44-61.

Peer-Reviewed Presentations

Cole, J. S., Weston, K., & Denzine, G. M. (2003, April). *Gender differences in the relationship of working memory tasks*. Paper presented at the annual meeting of the American Educational Research Association, Chicgao, IL.

Denzine, G. M., Pulos, S., & Cole, J. S. (2003, April). *The Relation Between Global Self-Esteem and Academic Course Specific Self-Esteem Among College Students*. Paper session presented at the annual meeting of the Rocky Mountain Psychological Association, Denver, CO.

Cole, J. S. & Denzine, G. (2002, March). *The contribution of situational and global characteristics to achievement motivation*. Paper presented at the annual meeting of the American College Personnel Association, Long Beach, CA.

Cole, J. S. & Denzine, G. (2001, March). *Comparing Academic Experiences of Native American and White College Students*. Paper presented at the annual meeting of the American College Personnel Association, Boston, MA.

Cole, J. S. (2000, March). *Recruiting forestry students for the next century: An examination of prospective students and their characteristics at NAU'S School of Forestry*. Third Biennial University Education in Natural Resources Conference, University of Missouri, Columbia, Missouri.

Biographical Sketch: David A. Bergin

The unifying theme of my scholarly activity is understanding human motivation, especially motivation for learning. Thus, I have written on whether competition enhances achievement, whether computer-assisted-instruction engages interest, how to foster interest in the classroom, perspectives of minority students on motivation (including fear of acting white), motivation for literacy, and motivation for learning outside of school. In survey studies, I have investigated "school-prompted interest" (e.g., have you ever become so interested in something in school that you learned more about it on your own outside of school?). In the proposed study, we are interested in whether students try hard on low stakes standardized tests and the extent to which the effort aspect of motivation is related to their test scores. Because standardized tests have become ubiquitous at all levels of education, it is important for motivation researchers to understand their use and student responses to them. It is also important to understand how the stakes of the test –low or high – affect student response.

Research methods that I have used include correlational surveys design (using regression), randomized experiments, quasi-experimental designs, interviews, quantified observations, and focus groups.

I have good quantitative skills and have done all the statistical analyses on every published article that I have single authored and nearly every article that I have co-authored. The statistical methods that I have used include factor analysis, analysis of variance, repeated measures MANOVA, and regression. I do not have experience with weighted sample surveys, but they will not be used in this project.

David Allen Bergin. Abbreviated Vitae

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Education

Ph.D.	1987	Stanford University	Education: Minor in Psychology
Ed.S.	1986	Stanford University	Evaluation
B.A.	1980	Brigham Young University	English (cum laude)

Professional Experience

2001- present	Associate Professor of Educational Psychology, College of Education, University of Missouri.
2000-2001	Professor of Educational Psychology, The University of Toledo.
1993-2000	Associate Professor of Educational Psychology, The University of Toledo.
1988-1993	Assistant Professor of Educational Psychology, The University of Toledo.

1987-1988 **Visiting Assistant Research Professor** at the Institute for Research on Human Development, University of Illinois at Urbana-Champaign.
(sponsored by Martin Maehr and Carole Ames)

Selected Publications

Pugh, K., & Bergin, D. A. The effect of education on students' out-of-school experience..
Manuscript submitted for publication.

Pugh, K., & Bergin, D. A. Motivational influences on transfer. Manuscript submitted for publication.

Bergin, D. A., & Habusta, S. F. Goal orientations of young male hockey players and their parents. Manuscript submitted for publication.

Bergin, D. A., & Cooks, H. C. (2002). High school students of color talk about accusations of "acting white." *The Urban Review*, 34, 113-134. (refereed)

Bergin, D. A., & Cooks, H. C. (2000). Academic competition among high school students of color: An interview study. *Urban Education*, 35, 442-472. (refereed)

Bergin, C. & Bergin, D. A. (1999) Classroom discipline that promotes self-control. *Journal of Applied Developmental Psychology*, 20, 189-206. (refereed)

Bergin, D. A. (1999). Influences on classroom interest. *Educational Psychologist*, 34, 87-98. (refereed)

Bergin, D. A., & LaFave, C. (1998). Continuities between motivation research and whole language philosophy of instruction. *Journal of Literacy Research*, 30, 321-356. (refereed)

Bergin, D. A. (1996). Adolescents' out-of-school learning strategies. *Journal of Experimental Education*, 64, 309-323. (refereed)

Everett, S. A., Price, J. H., Bergin, D. A., & Groves, B. W. (1996). Personal goals as motivators: Predicting bicycle helmet use in university students. *Journal of Safety Research, 27*, 43-53. (refereed)

Bergin, D. A. (1995). Effects of a mastery versus competitive motivation situation on learning. *Journal of Experimental Education, 63*, 303-314. (refereed)

Selected Professional Presentations

Bryant, A., & Bergin, D. A. (2003, August). *Social goals and substance abuse*. Paper presented at the Annual Convention of the American Psychological Association, Toronto.

Pugh, K., & Bergin, D. A. (2003, April). *Motivation and transfer: A critical review*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago.

Pugh, K., & Bergin, D. A. (2002, April). *Schools should influence students' out-of-school learning and behavior. Do they?* Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans.

Bergin, D. A., Cooks, H. C., & Fox, C. (1998, April). *Patterns of motivation orientation, learning strategies, and achievement of high school students of color*. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego.

Bergin, D. (1998, April). *What causes interest?* Paper in a symposium entitled "Theory and research on the acquisition and nurturance of appreciation for content area learning" organized by Jere Brophy. Presented at the Annual Meeting of the American Educational Research Association, San Diego.

Bergin, D. A., & Cooks, H. C. (1997, March). *Does the motivational promise of a college scholarship improve achievement and other outcomes for aspiring minority youth?* Paper

presented as a poster at the Annual Meeting of the American Educational Research Association, Chicago.

Bergin, D. A., & Cooks, H. C. (1996, August). *Prediction of minority student high school academic achievement*. Paper presented as a poster at the 104th Annual Convention of the American Psychological Association at Toronto, Ontario, Canada.

Bergin, D. A., & Cooks, H. C. (1996, June). *Fear of "acting white" and perceptions of academic achievement*. Poster presentation at the 60th Anniversary Convention of the Society for the Psychological Study of Social Issues at Ann Arbor, Michigan.

Federal Grants

NSF Bridges for Engineering Education grant 2002. \$99,189 to PI Satish Nair, David Bergin senior investigator and evaluator. "Engineering design in middle and secondary math and science education."

U.S. Department of Education, Office of Educational Research and Improvement, 1993. \$93,389 for "An Investigation of the Influences of School, Family, and Personal Factors on Academic Achievement of Aspiring Minority Youth in a Scholarship Incentive Program." Co-Principal Investigators: David A. Bergin and Helen C. Cooks.

Budget

Budget Justification

Personnel:

David Bergin, Co-PI, will devote 1 summer month to the project. PI Jim Cole will devote 10% of his time to the project. A student assistant will be hired to work 200 hrs. at the rate of \$12 per hour to assist with the project. Fringe benefits for full-time employees have been estimated at 32%.

Travel:

Travel is requested for Dr. Bergin and Mr. Cole to attend and present at the AIR Forum and the AERA Conference. Travel includes airfare, hotel lodging, meals, and miscellaneous expenses.

Other:

General supplies (paper, envelopes, printer cartridges, etc.) are estimated at \$400. ARC services, including design/printing of motivation surveys, distribution of surveys, scanning of returned surveys (estimated at \$3,000), and computer programming/data management, including analysis of test and motivation scores and data management needed for special institutional reports (estimated at \$1,500) total \$4,500. Costs associated with publication/dissemination of project results are estimated at \$1,000. Compensation for institutions participating in the project is estimated at \$3 per student, or not more than \$500 per institution, for a total of \$3,500.

Total direct costs are \$29,931. The University of Missouri will cost share \$14,068 in indirect costs associated with this research project.

BUDGET

	Base rate	Number of units	Percent usage	Total
A. Personnel				
Bergin	63240.00	1.00	11	6956.40
Cole	37490.00	1.00	10	3749.00
Student	12.00	200.00	100	<u>2400.00</u>
Total personnel				13105.40
B. Fringe Benefits				
Personnel	0.32	10705.40	100	<u>3425.73</u>
Total salaries wages & fringe benefits				16531.13
C. Equipment				
	0.00	0.00	0	0.00

	0.00	0.00	0	<u>0.00</u>
Total equipment				0.00
D. Travel				
AIR Forum	1000.00	2.00	100	2000.00
AERA Conference	1000.00	2.00	100	<u>2000.00</u>
Total travel				4000.00
E. Other				
Supplies	400.00	1.00	0	400.00
ARC services	4500.00	1.00	100	4500.00
Publication/dissemination	1000.00	1.00	100	1000.00
Compensation for inst.	3500.00	1.00	100	<u>3500.00</u>
Total other				9400.00
F. Total Direct Costs				29931.13
G. Facilities and Administration	0.47		100	<u><u> </u></u>
H. Total Costs				

Current and Pending Support

Current support: James S. Cole

Evaluation of Professional Development Projects (Cycle 1). Principal Investigator: Sandra

Abell. Co-Investigators: James S. Cole (15% FTE), Mark Elhert, John Lannin, Rose Marra.

Total: \$150,000 for 18 months. Funded by State of Missouri Office Of Administration,
March 2003.

Evaluation of Professional Development Projects (Cycle 2). Principal Investigator: Sandra

Abell. Co-Investigators: James S. Cole (15% FTE), Mark Elhert, Rose Marra. Total:

\$190,000 for 18 months. Funded by State of Missouri Office Of Administration, January
2004.

Current support: David A. Bergin

None.

Facilities, Equipment and Other Resources

The **University of Missouri-Columbia** (MU), established in 1839, is the oldest state university west of the Mississippi River. In 1870, the University was approved as a land-grant university under the Morrill Act of 1862. MU is the largest of the four campuses of the University of Missouri System. MU serves approximately 23,000 select and diverse students, including 4,300 graduate and 1,100 professional students from all 50 states and from over 100 countries. MU ranks among the top 35 universities in the country in the number of doctoral degrees granted annually.

The **Educational, School and Counseling Psychology (ES & CP) Department** is one of five academic units in the University's College of Education. The department offers graduate degree programs in the applied behavioral sciences with emphasis in counseling psychology, educational psychology, and school psychology. The Department's Counseling Psychology program is consistently ranked among the top three programs in the nation. The School Psychology program is designed around a proactive community public health focus, which has received national attention.

The **Assessment Resource Center**, a full-service assessment and research center, has worked with numerous researchers, educational organizations, and agencies in helping them to evaluate and assess program effectiveness. ARC's Research Services staff has experience and expertise designing and conducting evaluation and assessment projects in a wide variety of educational settings. ARC develops tests and manages testing programs, assists clients with questionnaire development and conducts surveys—in both paper-and-pencil and electronic formats—and consults with educators on a range of assessment issues.