

2004 AIR RESEARCH GRANT PROPOSAL

Finding Leakage in the Pipeline of Teacher Supply: Factors Influencing Youngsters to

Aspire to and Stay in Teaching Careers

NELS: 88-2000

Grant Amount Requested: \$25,968

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Project summary

The “No Child Left Behind Act” requires that by the end of the 2005-2006 school year, every classroom in America must have a teacher who is “highly qualified” (U.S. Department of Education, 2002). The problem is that the nation faces a serious teacher shortage. Statistical models show that approximately 2.4 million new public school teachers will need to be hired between 1999 and 2009 (U.S. Department of Education, 1999). States and school districts face the dual challenge of attracting more people into the teaching profession while improving teacher quality.

To help meet the challenge, it is critical that talented and high caliber individuals who are likely to consider entering the teaching profession be profiled and factors attributing to persistence in teaching aspirations be identified. This proposed study will trace the early career patterns of teachers, their psychological characteristics, and social/familiar/school environments. Factors contributing to persistence in teaching careers will be examined using Social-Cognitive Career Theory (SCCT). NELS’s first to fourth follow-up data will be used. These longitudinal data will allow the investigators to examine high school students who initially aspired to teaching careers and those who entered and remained in the career. Findings will help identify and recruit qualified students who are likely to become certified and be successful in their teaching careers.

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Project Description

Statement of Problem:

In many school districts, teacher shortages have reached alarming levels. According to Assistant Secretary Stroup's (2002) testimony before the House Subcommittee on Labor/HHS/Education Appropriations, America's schools will need to hire more than 2 million teachers over the next decade, more than half of whom will be first-time teachers. Teacher shortages are particularly acute in high-poverty areas and in academic fields such as mathematics, science, special education, and bilingual education. It has been predicted that between 1994-2005 needs for teachers will increase 16% in elementary schools, 29% in secondary schools, and 53% in special education programs. Along with special education, teachers of English as a second language, mathematics, and some sciences will be particularly needed (NCATE, 1997). As a result, states and school districts face the dual challenge of attracting more people into the teaching profession while improving teacher quality.

The shortage of teachers is expected to worsen largely due to predicted increases in student enrollments and elevated teacher retirement rates (Haggstrom, Darling-Hammond, & Grissmer, 1988; Henke & Zahn, 2001; National Commission on Teaching and America's Future, 1997). Over the next ten years, an unusually large number of teachers are expected to be hired to meet the needs of increasing enrollment and loss of teachers due to retirement. Statistical models show that approximately 2.4 million newly hired public school teachers will be needed from 1999 to 2009 (U.S. Department of Education, 1999). Enrollments in elementary and secondary schools are expected to set records each year up to at least 2008 (Gerald & Hussar, 1998).

While much attention needs to be given to the teacher shortage, one shouldn't be shortsighted about attracting high quality, high-caliber individuals to the profession. Problems of

teacher quality and quantity are, indeed, among the most important issues in schools, but they also are among the least understood. The problem is as much quality as it is quantity. The “No Child Left Behind Act” requires that by the end of the 2005-2006 school year, every classroom in America must have a teacher who is “highly qualified” (U.S. Department of Education, 2002). One of the initial steps in meeting this challenge is to identify and characterize these high ability individuals who are likely to consider entering the teaching profession.

The country faces a serious consequence if the nation does not supply and retain quality teachers (Darling-Hammond & Sykes, 2003). As the National Commission on Excellence in Education (1983) warned almost two decades ago, "the educational foundations of our society are being eroded by a rising tide of mediocrity that threatens our very future as a nation and a people" (p. 5). President George W. Bush’s “No child left behind” would be doomed to fail if we do not address the issue of teacher recruitment, training, and retention. An even greater risk is that this nation will not be able to compete in the emerging global economic environment which largely depends on the quality of the nation's work force as defined by its literacy, numeracy, flexibility, and teachability.

One way to address the teacher shortage problem is to use national data base resources to identify individuals potentially seeking teaching careers, explore how they got interested, what plans they made, and whether they succeeded or not. Studies related to career aspiration and persistence have largely focused on investigating why an individual chooses a career in teaching, why teachers change positions and what causes teachers to leave the profession (e.g., Grissmer & Kirby, 1997; Henke & Zahn, 2001; Ingersoll, 2001; Miller, Brownwell, & Smith, 1999; Shen, 1997). Additionally, colleges and schools of education have attempted to address both teacher retention and quality through induction and mentoring programs (e.g., Basinger, 2000; Serpell &

Bozeman, 1999). Although some results seem promising, it may be difficult to assess the long term impact of such programs on supply or teacher quality. Lack of systematic inquiries and extended follow-ups on this issue appear to be critical and can be best addressed through analysis of national databases. More importantly, lack of study examining the shortage of the most needed teaching specialty has prompted this investigation. To the best of our knowledge, this study represents the first attempt to use cognitive social theory as a framework to examine the career interests and persistence of students who aspire to teaching careers.

The purpose of the study. National career development guidelines suggest that career awareness and career exploration should start in the earliest possible grade level. Studies have indicated that decisions to become a teacher can be traced back to middle school years (Lee, Clery, & Presley, 2001; Page & Page, 1984) and likely peak at ages 15 to 16 (Page, Page, Hawk, Amburgey, & Correro, 1980). The present study will longitudinally examine three cohorts of students: (1) 10th grade students who say they want to be teachers in the early phases of NELS, (2) students in teacher education programs (third follow-up), and (3) when they became teachers in the 4th follow-up. How their aspirations unfold through their college years and into the work force will be investigated.

The investigators will seek answers to these questions: Who is more likely to become a candidate for teacher education? What are pragmatic and significant variables that affect student persistence? Who is more likely to fall through the cracks? Can prediction models of persistence in teaching careers be developed? Specifically, the investigators will examine:

- characteristics of students who persisted in their teaching career aspirations in all four follow-up periods (n = 198),

- characteristics of the students who switch their aspiration to teaching careers during the four follow-up periods (n = 818),
- characteristics of the students who changed their aspirations from teaching careers during the four follow-up periods (n = 316),
- characteristics of students enrolled in teacher education programs who did not originally plan to pursue a teaching career (n = 918),
- factors discriminating between people who persisted (n = 109) and who did not persist, (n = 376),
- predictors of high ability (or secondary endorsement) students who persisted to complete their teacher education and at least their initial year of teaching (n = 62),
- predictors of job satisfaction, and (f4bsovr),
- reasons for dropping out of teacher education. (n = 728; edmajor2 BY edmajor1).

It is anticipated that findings from this study will provide educators, counselors and decision makers with an understanding of the background and characteristics of students who they may wish to target with recruitment and retention efforts.

Theoretical Framework. The selection of variables for this study was, in part, guided by the social cognitive theory of career and academic interest, choice, and performance (Lent, Brown, & Hackett, 1994). This model concerns itself with the effects of self-efficacy beliefs, expected outcome and goal mechanisms, and how these variables interrelate with gender, contextual, experiential, and learning factors.

The social cognitive career theory (SCCT) has emerged as an influential theory in describing an individual's career development (Brown, 2002). According to the SCCT (Lent, Brown, & Hackett, 1996), personal career related behavior is influenced by four aspects,

including (a) behaviors, (b) self-efficacy beliefs, (c) outcome expectations, and (d) goals, in addition to genetically determined characteristics. Goals are considered the key organizational processes that influence an individual's thoughts and behaviors (Schutz, Crowder, & White, 2001). Self-efficacy serves as a generative mechanism through which individuals integrate and apply their existing cognitive, behavioral, and social skills to a task. SCCT posits that self-efficacy affects thought patterns and partly determines individuals' actions, their decisions to engage in a task, to put forth effort, and to persevere under failure (Bandura, 1986). The SCCT will be used in this study as a conceptual framework to understand how students attain varying levels of performance and "persistence in their educational and career pursuit" (Lent et al., 1996, p.311).

The SCCT has also been used to understand educational and vocation choices of students. For example, Mau and Bikos (2000) applied the SCCT model to predict educational aspirations of high school students. Mau (2003) used the SCCT as a framework to examine persistence in science and engineering career aspirations of 8th grade students. Solomonson and Bouman (2002) tested the fit of the SCCT model in explaining career choice and attainment of women with science or engineering degrees. Locus of control, a related self-efficacy construct, has emerged as a significant factor differentiating a student's choice of career. Studies (Mau et al., 1995; Rojewski & Yang, 1997) indicated that the greater the internal locus of control, the more likely a student would aspire to a gender non-traditional occupation. The complex nature of teacher employment patterns suggests the need for a framework to organize the multiple personal, social, and environmental variables which explain how and why some teachers persist in the teaching profession and others do not. To the authors' knowledge, no studies have used SCCT to examine career aspiration and persistence in teaching careers.

Data Set. The data the authors propose using are included in the National Educational Longitudinal Survey of 1988 (NELS: 88), which consists of a base year (1988), first follow-up (1990), second follow-up (1992), third follow-up (1994), and fourth follow-up (2000). NELS: 88 is the most recent series of longitudinal studies designed to "provide trend data about critical transitions experienced by students as they leave elementary school and progress through high school and into college or their careers" (NCES, 1990, p.5). The base year survey was comprised of a nationally representative sample of 24,599 students selected from 1,052 middle schools (public, $N = 815$ and private, $N = 237$) in the United States. The sample was stratified by school size, urban versus rural, region, and percentage of minority students (NCES, 1994). Due to student drop outs, the sample was refreshed with additional students in both the first follow-up (10th-grade, $N = 20,840$) and second follow-up (12th-grade, $N = 21,188$). The third follow-up ($N = 14,915$) took place in the spring of 1994, when most sample members had been out of high school for two years. The fourth follow-up took place in 2000, the year in which most sample members turned 26 year old. The fourth follow-up sample consisted of 12,144 participants.

Initial analysis indicates that of the 11,309 10th grade students, 514 (4.5%) aspired to teaching career. Four years later, 316 lost interest, 198 still aspired to a teaching career and an additional 832 students became interested, resulting in a total of 1,030 students aspired to teaching.

Variables:

Four clusters of NELS independent variables will be included in this study, including:

- (a) Psychological variables: self-esteem (F1CNCPT2 , seven items, e.g., I feel good about myself), locus of control (F1LOCUS2, six items; e.g., I don't have enough control over

the direction my life is taking), and academic self-efficacy (four items, e.g., math is one of my best subjects, English is one of my best subjects).

- (b) Home environment and familiar variables: perceived parental expectations, socioeconomic status (F1SES; i.e., a composite score of parents' education, occupations and family income), parental school involvement (F1S105A–F1S105G, seven items, e.g., how often students have discussed selecting school courses or programs with parents), parental academic involvement (F1S106A –F1S106D, four items, e.g., how often parents attend school meetings), and number of siblings (FAMCOMP).
- (c) School and academic variables: academic proficiency (F12XCOMP; measured by a composite score of a 21-item reading and a 40-item math proficiency test developed by ETS), high school GPA, college GPA, SAT/ACT, high school course work, high school program (F1HSProg: general, academic, and vocational/technical program), school setting (G10URBAN: urban, suburban, and rural), school size (F1SCENRL), and school type (G10CTRL1: public or private/parochial schools).
- (d) Sex and ethnicity variables: Both sex (F4SEX) and ethnicity (F4RACEM) are available as dummy variables.

Dependent Variables

Occupation expected at age 30 (This variable is measured at each of the four follow-ups)

Current Occupation (F4BXOCCD)

Major Field of Study (MAJCODE)

Professional License Received (F4CLCR1 - F4CLCR5)

Job satisfaction: Composite score of Pay (F4BSPAY), Fringe benefits (F4BSFRG), Work Importance (F4BSIMP), Opportunities for promotion and advancement (F4BSPRO), Opportunities to use past training & education (F4BSED1), Job security (F4BSSEC), Opportunities for further training & education (F4BSED2)

Panel Weights

Fourth Follow-up Sample Weight (F4PNLWT)

First follow-up to Fourth Follow-up Panel Weight (F4F1PNWT)

Second follow-up to Fourth Follow-up Panel Weight (F4F2PNWT)

Data Analyses. The research questions proposed earlier can be addressed by several separate statistical analyses. First, 10th graders who initially aspired to the teaching profession and persisted in each follow-up cohort will be identified. Characteristics of students who persisted in each cohort and all four follow-up cohorts will be profiled using descriptive statistics and frequencies. Separate analyses of variance (ANOVA) will be performed to provide further understanding of the nature of persistence factors. Second, factors contributing to persistence in a teaching career will be analyzed using logistic regression analysis. Given the dichotomous nature of the dependent variables (persistence vs. non persistence), logistic regression models will be used. Logistic regression analysis has a number of advantages over other multivariate techniques (e.g., discriminant or multiple regression analyses) because it permits violation of normality and it is interpretable in terms of probability. Logistic regression will provide a test of the probability that members of a specific group are more likely to persist in pursuing a teaching career. As stated earlier, the variable selection and entry into the model are guided by the Social Cognitive Theory of career choice and aspiration. Predictors will be entered in blocks using a forward stepwise method, with demographics variables entered first, then school variables, followed by family variables, and psychological variables. The order of entry within each cluster is determined by the stepwise selection procedure. The analyses will be based on weighted samples created to adjust for the oversampling bias which redistributed the observations to represent the distribution in the population (NCES, 1997). Depending on the cohorts involved in the analyses,

appropriate panel weights will be used. Since statistical procedures generally compute regression coefficients based on simple random sample assumptions, the standard errors must be adjusted with the design effects using appropriate variance estimation procedures to take into account the complex sampling procedures used in the NELS:88 surveys (Curtin, Ingels, Wu, & Heuer, 2002).

Dissemination Plan:

We anticipate that findings from this study will have important implications for at least (a) middle and elementary school level administrators and counselors, (b) post-secondary level student recruiters and counselors, teacher education faculty and administrators, and (c) researchers and educational practitioners. Therefore, the authors' dissemination efforts will focus mainly on these three groups of individuals.

1. Middle and elementary school level administrators and counselors: Paper bound copies will be sent to area school districts for distribution. An executive summary will be e-mailed to various professional groups that would reach counselors and school level administrators throughout the U.S.
2. Post-secondary level student recruiters and counselors, teacher education faculty and administrators: The findings will be shared with interested faculty in the teacher education program and administrators in the college and university in bound copies. Paper bound copies will be also sent to university counselors and student advisors. Key findings will be published in the WSU College of Education website that can be searched via major internet search engines.
3. Educational Practitioners and Researchers: We plan to present our findings through national conferences and publications. Conference proposals will be submitted to AIR and the American Educational Research Association (AERA). We will seek to publish

our results to the following journals as appropriate: Journal of High Education, Journal of Teacher Education, Career Development Quarterly, Journal of Counseling and Development, and the Journal of Educational Research. When deciding on journal outlets, we will consider the journals that have national impact and have wide circulations among practitioners.

Policy Relevance:

A good policy should be grounded on cumulated research studies that address bottom line issues. Funding should be provided to programs that are developed based on solid research findings and updated information. In fiscal year 2003, \$8.9 million is budgeted for federal grants specifically to support teacher recruitment efforts (Stroup, 2002). In addition to providing scholarship funds and support services, 63 percent of recruitment grant recipients are supporting other innovative strategies to ensure that high-need school districts are able to recruit qualified teachers. Our study would provide vital data for relevant policy and the most current empirical data to inform decision-makers in their efforts to recruit qualified teachers. We believe well informed decisions would save money and recruitment efforts.

Innovation:

The proposed study is innovative in several respects. First, to the best of our knowledge, this study represents the first attempt to use cognitive social theory as a framework to examine the career interests and persistence of students who aspire to teaching careers. SCCT has emerged as a powerful career development theory that has received much empirical support for its predictive validity of various job/career choices. Second, as we have pointed out earlier, research tends to focus on teacher recruitment and retention. This study specifically examines the persistence factor of high ability students. Third, lack of representative and long term follow-up

has been a common flaw of previous studies. This investigation proposes to use nationally representative samples that provide longitudinal data following students from high school through their college years to their employment as teachers. What makes this study unique is that we trace early career patterns of the persistent individuals and identify factors contributing to career attainment. Because of the timely availability of the NELS fourth follow-up data, the project described in this proposal is unprecedented. Access to these databases for examination of the persistence of students in teaching careers will allow investigation of policy issues with a sophistication and nuance that is not otherwise possible.

Audiences:

We believe university recruiters and teacher education planners would be most interested in students who are likely to consider teaching majors. This study could be useful to state legislators and school boards who are looking at teacher recruitment. University student advisors may also find this study useful in helping students choose an academic major. Secondary school administrators who are responsible for hiring and retaining high quality teachers would find this study particular useful. Researchers interested in career development and occupational attainment would also be an audience for the results of this study.

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Dr. Wei-Cheng Mau is a professor of Counselor Education at Wichita State University where he has been on the faculty for 12 years. His teaching responsibilities include career development, principles and philosophy of counseling, assessment in counseling, multicultural issues in counseling, educational research, and research seminar. Dr. Mau has published over 35 journal articles, books, book chapters, reviews, and monographs. He has presented over 40 referred papers at national and international conferences. His research work and interests include cultural differences in educational/vocational aspirations and career planning, academic achievement, help-seeking attitudes and behaviors, computer-based career interventions, and career decision-making. He is currently serving on the editorial board of the *Journal of Vocational Behavior* and the *Career Development Quarterly*.

Dr. Mau has extensive experience in statistical analysis of large datasets. His working experiences including research at American College Testing program, The University of Iowa Evaluation and Examination Services where he conducted many research projects that utilized large data bases. He has participated in the NCES Advanced Database Seminars on NELS:88 and Baccalaureate and Beyond 92-94 where he utilized both SPSS and WestVarPC for analysis. He is proficient in SPSS, SAS, and AMOS statistics software packages. As you can see in his vitae, many of his publications are based on NCES national databases (Refer to publications with *).

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- Mau, W. C. (1995). Decision-making styles as a predictor of career decision status and treatment gains. *Journal of Career Assessment, 3*, 90-101.
- Mau, W. C., Domnick, M., & Ellsworth, R. D. (1995). Characteristics of female students who aspire to science and engineering or homemaking careers. *Career Development Quarterly, 43*, 323-337. (NELS:88)*
- Mau, W. C., & Pope-Davis, D. B. (1993). World view differences between college students and graduate counseling trainees. *Counseling and Values, 38*, 42-50.
- Prediger, D., Swaney, K., & Mau, W. C. (1993). Extending Holland's hexagon: Procedure, counseling application, and research. *Journal of Counseling and Development, 71*, 422-428.

- Mau, W. C., & Jepsen, D. A. (1992). Effects of computer-assisted instruction in using formal decision-making strategies to choose a college major. *Journal of Counseling Psychology, 39*, 185-192.
- Mau, W. C., & Jepsen, D. A. (1990). Help-seeking perceptions and behaviors: A comparison of Chinese and American graduate students. *Journal of Multicultural Counseling and Development, 18*, 94-104.
- Mau, W. C., & Jepsen, D. A. (1988). Attitudes toward counselor and counseling processes: A comparison of Chinese and American graduate students. *Journal of Counseling and Development, 63*, 189-192.

Book and Chapter

- Mau, W.C., Grimsley, S., & Sherwood, C. (2001). Janine: The case of the negative nonconformist. In S.G., Niles, J., Goodman, & M. Pope (Ed.), *Career counseling casebook: A resource for practitioners, students, and counselor educators*. Columbus, OH: National Career Development Association.
- Mau, W. C. (1986). ••••••• [Love, acceptance, and forgiveness]. (J. Cook, & S. C. Baldwin, Trans.). Taipei, Taiwan: Christian Witness Press.
- Mau, W.C., & Mau, Y.H. (1986). ••••••• -- ••••• [Love, acceptance, and forgiveness -- Leader's guide]. (J. Cook, & S. C. Baldwin, Trans.) Taipei, Taiwan: Christian Witness Press.

Article (invited)

- Mau, W.C. (1998). Counseling and Educational Reform. *New Waves -Educational Research & Development, 2*(6), 7-11.
- Mau, W.C. (1996). Career counseling at the edge of 21st century. *New Waves -Educational Research & Development, 1* (2), 25-29 •
- Mau, W.C. (1990, December). Myth of interpersonal relationships. *Renewed Life Magazine, 12*, 35-41.

Monograph, Bulletin, and Review

- Mau, W.C. (2001, Fall). Test review: The ability explorer. *Newsnotes, 40*, 3-4.
- Mau, W. C. (1997). *Computer-based career interventions*. Proceedings of the 6th International Conference on Counseling in the 21st Century (ERIC Document Reproduction Service No. ED439319)
- Mau, W. C., Swaney, K., & Prediger, D. (1990). Mapping career groups on basic interest dimensions. *ACT Research Report Series, 90-7*, American College Testing, Iowa City, IA. (Refereed--Internal review)
- Mau, W. C. (1989). *An international student's perspective on Counselor Education*. (ERIC Document Reproduction Service No. ED 305562)

PRESENTATIONS

National/International

- Mau, W.C. (2004). *Characteristics of high school students who persisted in aspirations to teaching careers*. Paper accepted for presentation at CAREDA, San Diego, CA.
- Mau, W.C. (2002). *Cultural Perspectives on career decision-making difficulties*. Symposium conducted at the annual American Psychological Association meeting, Chicago, IL.
- Mau, W.C. (2002). *Persistence in science and engineering career aspirations of woman and minority students*. Paper presented presentation at the annual meeting of the American Educational Research Association, New Orleans.
- Mau, W.C. (2001, March). *Educational and vocational aspirations of high school students: A longitudinal study*. In D.A. Jepsen (Chair), Informing career guidance policy and practice through longitudinal research. Symposium conducted at the American Counseling Association meeting, San Antonio, TX.

- Thompson, J., Bakken, L., Mau, W.C. (2001). *A three-year longitudinal study comparing cross-cultural attitudes and experience of professional development site-based and campus-based preservice teachers*. Association of Teacher Education Annual Conference, February 17-21, 2001, New Orleans, LA.
- Mau, W.C., & Fenandes, A. (2000). *Utilization of career counseling and job placement services in higher education*. Paper presented at the annual meeting of National Career Development Association, Pittsburgh, Pennsylvania.
- Mau, W.C. (2000). *Assessing career decision-making difficulties*. Paper presented at the annual meeting of the American Counseling Association, Washington D.C.
- Mau, W.C. (1999). *Career decision-making styles and career decision-making self-efficacy*. Paper presented at the National Career Development Association meeting, Portland, OR.
- Schommer, M., Mau, W.C., Brookhart, S. (1999). *Middle school students' beliefs about knowledge and learning*. Paper presented at the American Educational Research Association, Montreal, Canada.
- Thompson, J., Bakken, L., Mau, W.C. (1999). *A three-year longitudinal study comparing cross-cultural attitudes and experience of professional development site-based and campus-based preservice teachers*. Paper presented at the annual ATE conference, Chicago, IL.
- Mau, W. C. (1998). *Computer technology and counseling: Computer-assisted career decision-making program*. 1998 Global Conference on Mental Health and Counseling, Taipei, Taiwan.
- Mau, W. C., & Bikos, L.H. (1998). *Logistic model of educational/vocational intentions of minority and female students*. Research paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.
- Mau, W. C., Tien, H.L., & Kopischke, A.L. (1998). *College students' job search strategies, search outcomes, and job satisfactions: A comparison of race and gender*. Paper presented at the National Career Development Association meeting, Chicago, IL.
- Tien, H.L., & Mau, W.C. (1998). *College students' perceptions of career-related barriers*. Paper presented at the National Career Development Association meeting, Chicago, IL.
- Mau, W. C. (1997). *Computer-based career interventions*. A research paper presented at the 6th International Counseling Conference, Beijing, China.
- Mau, W. C. (1997). *Effects of computer-assisted career guidance programs on vocational identity and exploratory behavior*. A research paper presented at the National Career Development Association, Daytona, Florida.
- Mau, W. C. & Calvert, R. (1997). *Educational and vocational behavior of adolescents: A longitudinal study of race and gender*. A research paper presented at the American Counseling Association World Conference, Orlando, Florida.
- Mau, W. C., & Calvert, R. (1996). *Career plans and perceived counselor's expectations of high school students: A longitudinal study*. A research paper presented at the American Counseling Association World Conference, Pittsburgh, Pennsylvania.
- Mau, W. C., & Calvert, R. (1995). *Comparative effects of three career interventions: Vocational card sort, SDS, SIGI+*. A research paper presented at the National Career Development Association, San Francisco, CA.
- Mau, W. C., Gariglietti, G., & Calvert, C. (1995). *Students' perceptions of counselors' and other significant persons' opinions about their career plans*. A research paper presented at the National Career Development Association, San Francisco, CA.
- Mau, W. C. (1995). *Comparing two assessment methods, expressed vs. supplied, using Repertory Grid*. Research paper presented at the Association for Assessment in Counseling and ERIC Counseling and Student Services Clearinghouse, Tucson, Arizona.

- Mau, W. C. (1994). *Predictors of academic achievement: A comparison of bilingual Chinese, American-born Chinese, and White American high school students*. Paper presented at the Chinese American Educational Research and Development Association Annual Conference, New York, NY, 1994.
- Mau, W. C. (1994). *Counseling for educational success: What can we learn from Chinese culture*. Research paper accepted for presentation in the 1994 American Counseling Association Bilateral Conference, Hong Kong.
- Mau, W. C. (1994). *Characteristics of female students who aspire to nontraditional careers*. Paper presented at the 1994 American Counseling Association convention, Minneapolis, Minnesota.
- Mau, W. C. (1994). *Energizing young adolescents through their career aspiration: Causal models for racial/ethnic groups*. Paper presented at the 1994 National Career Development Association Convention, Albuquerque, New Mexico.
- Mau, W. C. (1993). *Integrating personality variables in measuring career Interests*. Paper accepted for presentation at the 1993 American Counseling Association annual convention, Atlanta, GA.
- Mau, W. C. (1992). *Computerized career decision making system*. Paper presented at the American Vocational Association Annual Convention, St. Louis, Missouri.
- Mau, W. C. (1992). *Relative efficacy of personal and situational variables in predicting the outcomes of computer-based career interventions*. Paper presented at the 1992 national conference of National Career Development Association, San Antonio, Texas.
- Mau, W. C. (1990). *Computer-assisted guidance for students choosing academic majors*. Paper presented at the 1990 American Association for Counseling and Development Association annual convention, Cincinnati, OH.
- Mau, W. C. (1990). *Making career choices*. Software demonstration at the 1994 American Association for Counseling and Development Association annual convention, Cincinnati, OH.
- Mau, W. C. (1989). *International student perspectives of counselor education*. Paper presented at the 1989 American Association for Counseling and Development Association annual convention, Boston, MA.
- Jepsen, D. A., Mau, W. C., Rosene, C., & Truemper, S. (1988). *Career decision-making strategies*. Paper presented at the 1988 American Association for Counseling and Development association annual convention, Chicago, IL.

Regional/Local

- Thompson, J., Bakken, L., Mau, W.C. (2000). *A longitudinal study comparing cross-cultural knowledge, attitude, and perception of teaching efficacy of professional development site-based and campus-based preservice teachers*. Paper presented at the Mid-Western Educational Research Association annual meeting, Chicago, IL.
- Mau, W. C. (1998). *Correlates of language used at home and academic achievements*. Paper presented at the Midwest-America Chinese Science and Technology Conference, St. Louis, Missouri.
- Mau, W. C. (1998). *Counseling minority clients at crisis*. Women Sexual Assault Center, Wichita, KS.
- Thompson, J., Bakken, L., Mau, W.C. (1996). *Comparing knowledge, skills, and confidence of cross-cultural interactions of field-based and campus-based preservice teachers*. Paper presented at the Mid-Western Educational Research Association annual meeting, Chicago, IL.
- Mau, W. C. (1995). *Counseling international students in crisis*. Keynote speaker for the Kansas Association of Foreign Students Advisors conference, Wichita, KS.
- Mau, W. C. (1995). *Counseling Asian Americans: The silent people*. Paper presented at the Mental Health Association of South Central Kansas, Wichita, KS.
- Mau, W. C., & Gariglietti, G. (1994). *Cultural Influences on academic achievement of Chinese and White American High school Students*. Paper presented at the Mid-Western Educational Research Association, Chicago, IL.
- Mau, W. C. (1992). *Educational planning and academic achievement of eight-grade student: A racial/ethnic comparison*. Paper presented at the Mid-Western Educational Researcher Annual Meeting, Chicago, Illinois.
- Mau, W. C. (1992). *Educational and vocational aspiration of Asian American students*. Paper presented at the Ninth Midwest-America Chinese Science and Technology Conference, St. Louis, Missouri.

Mau, W. C. (1989). *Special program in multicultural counseling*. Paper presented at the meeting of the Iowa Association for Counselor Education & Supervision, Cedar Rapids, IA.

Jepsen, D. A., Mau, W. C., Rosene, C., & Truemper, S. (1987). *Career decision-making strategies*. Paper presented at the meeting of the Iowa Association of Counseling and Development conference, Des Moines, IA.

RESEARCH GRANTS

Hitchcock, R. & Mau, W.C. (2001-2003). Grant evaluators for USD259 Helping Children Dream project. (US Department of Education, second year and third year \$70,000)

Mau, W.C. (1998). *Career decision-making difficulties of college students*. (Wichita State University Faculty Research Grant, \$4,500, Funded)

Mau, W.C. (1997). *Advanced seminar on the use of NCES national databases*. (Department of Education, National Center for Educational Statistics, \$3,000, Funded)

Mau, W.C. (1997). *Factors influencing educational/vocational behaviors of adolescents*. (Wichita State University Summer Faculty Research Grant, \$3,995, Funded)

Mau, W.C. (1997). *COE Professional Development Grant*. (\$500, Funded)

Thompson, J., Bakken, L., Mau, W.C. (1996). *Comparing knowledge, skills, and confidence of cross-cultural interactions of field-based and campus-based preservice teachers*. (Wichita State University Summer Faculty Research Grant, \$3,000, Funded)

Mau, W. C. (1993). *Computerized interest inventory and career exploration system*. (Wichita State University Summer Faculty Research Grant, \$3,200, Funded)

Mau, W. C. (1992). *Facilitating students' career decision making using a non-sexist, Individualized computer simulation design*. (Wichita State University Faculty Research Grant, \$3,995, Funded)

Professional Services

Editorial Board Member, *Journal of Vocational Behavior* (2001-2003)

Editorial Board Member, *Career Development Quarterly* (1996 - 1999; 1999- 2003)

Ad Hoc Reviewer, *Journal of Vocational Behavior* (1998 - 2000)

Guest Reviewer, *Personality and Individual Differences* (1999)

Guest Reviewer, ••••• *Applied Psychology*• (2000)

Co-Investigator

Name: Randy Ellsworth

Title: Associate Dean for Administration and Graduate Program Support and Director of the Center for Research and Evaluation Services

Contact Information:

College of Education	Phone:	316.978.3301
Box 131	Fax:	316.978.3302
Wichita State University	E-mail:	randy.ellsworth@wichita.edu
Wichita, KS 67260-0131		

Professional Preparation:

State University of New York, Plattsburgh Major: Mathematics Degree & Year: BS/1964

George Peabody College
George Peabody College

Major: Ed. Psychology Degree & Year: MA/1967
Major: Ed. Psychology Degree & Year PhD/1970

Appointments:

Teaching

- 1991-Present Full Professor of Educational Psychology, Department of Administration, Counseling, Educational and School Psychology, Wichita State University
- 1980-1991 Associate Professor of Educational Psychology, Department of Instructional Services, Wichita State University
- 1974-1980 Assistant Professor of Educational Psychology, Department of Instructional Services, Wichita State University
- 1964-1966 Mathematics teacher, Wallkill Central School (Junior High), Wallkill, NY

Administrative

- 1997-Present Associate Dean, College of Education, Wichita State University
- 1996-1997 Interim Dean, College of Education, Wichita State University
- 1994-1996 Associate Dean, College of Education, Wichita State University
- 1993-1994 Chairperson, Department of Administration, Counseling, Educational and School Psychology, Wichita State University
- 1990-1993 Chairperson, Department of Counseling, Educational and School Psychology, Wichita State University
- 1982-1985 Coordinator, Division of Educational Psychology/Special Education of the Department of Instructional Services, Wichita State University
- 1973-1974 Research Specialist, Sarasota County School System, Sarasota, FL
- 1970-1973 Principal-Teacher for Research and Evaluation, Booker-Bay Haven School, Sarasota County School System, Sarasota, FL

Publications (since 1990)

McKenna, M., Kear, D., & Ellsworth (1995). Children's attitudes toward reading: A national study. Reading Research Quarterly, 30, 934-956.

Mau, W. C., Domnick, M., & Ellsworth, R. (1995). Characteristics of female students who aspire to science and engineering or homemaking careers. Career Development Quarterly, 43, 323-337.

Duell, O. K., Lynch, D., Ellsworth, R., & Moore, C. (1992). Wait-time in college classes taken by education majors. Research in Higher Education, 33, 483-494.

Ellsworth, R., Duell, O. K., & Velotta, C. (1991). Length of wait-times used by college students given unlimited wait-time intervals. Contemporary Educational Psychology, 16, 265-271.

Martin, D., Ellsworth, R., & Cranford, J. (1991). Limitations of analysis of covariance designs in aging research. Ear and Hearing, 12, 85-86.

McKenna, M. C., Kear, D. J., & Ellsworth, R. A. (1991). Developmental trends in children's use of print media: A national study. In S. McCormick & J. Zutell (Eds.), Learner factors/teacher factors: Issues in literacy research and instruction, Fortieth yearbook of the National Reading Conference. Chicago: National Reading Association.

Bakken, L., & Ellsworth, R. (1990). Moral development in adulthood: Its relationship to age, sex, and education. Educational Research Quarterly, 14(2), 2-9.

Ellsworth, R., Dunnell, P., & Duell, O. K. (1990). Multiple choice test items: What are text authors telling teachers? Journal of Educational Research, 83, 289-293.

Paper Presentations (International/National since 1990)

Gladhart, M. A., Carroll, J. A., & Ellsworth, R. (2000). Getting program and faculty up to speed for NCATE 2000 standards: Project EXCITE. Paper presented at the meeting of the Society for Information Technology and Teacher Education, San Diego, CA.

Furtwengler, C. B., Furtwengler, W. J., Turk, R., Owens, M., & Ellsworth, R. (1997). Unforeseen policy issues and unresolved dilemmas in school privatization: Cautions for administrators and board of education members. Paper presented at the meeting of the American Educational Research Association, Chicago, IL.

Turk, R. L., Furtwengler, C. B., Furtwengler, W. J., Owens, M., & Ellsworth, R. (1997). Edison project: Outside program evaluator's inside view. Paper presented at the meeting of the American Educational Research Association, Chicago, IL.

McKenna, M., Kear, D., & Ellsworth, R. (1994). The relationship of gender and ability to children's attitudes toward reading: A national study. Paper presented at the meeting of the American Educational Research Association, New Orleans, LA.

Razook-Ellsworth, C., & Ellsworth, R. (1992). Student teacher, baccalaureate graduate, and administrator reactions to Wichita State University's field experience cooperative education program for pre-service teachers. Paper presented at the meeting of the Association of Teacher Educators, Orlando, FL.

Ellsworth, R., Duell, O., & Velotta, C. (1991). Length of wait-times used by college students given unlimited wait-time intervals. Paper presented at the meeting of the American Educational Research Association, Chicago, IL.

Razook-Ellsworth, C., Ellsworth, R., Furan, J. (1991). Preparing teachers to the 21st century through cooperative education. Paper presented at the meeting of the Cooperative Education Association, Denver, CO.

McKenna, M., Kear, D., & Ellsworth, R. (1990). Developmental trends in children's use of print media: A national study. Paper presented at the National Reading Conference, Miami, FL.

Veaser, H. A., & Ellsworth, R. (1990). Assessment in English Composition. Paper presented at the Montclair Assessment Conference: Strategies and Prospects for the Decade, Upper Montclair, NJ.

Funded Grants (since 1990)

Anderson, P., Ellsworth, R., Carroll, J., Bernstorff, E., & Mukerjee, H. (2002). Mobilized effective teams (METs). Kansas State Department of Education Title II Improving Teacher Quality Through a Performance Based Licensure System. \$57,668.

Ellsworth, R., & Keas, T. (2002). Enhancing PK-16 PDS programs through increased collaboration of stakeholders. Kansas State Department of Education Title II Initiating or Enhancing Professional Development Schools in Teacher Preparation Units in Kansas. \$20,784.

Baronio, L., Engelhardt, J., Ellsworth, R., & Alexander, D. (2001). Wichita aerospace transition to teaching program (WATT). Raytheon Aircraft Company. \$261,375 over three years.

James, M., Lane, B., Sherman, T., Anderson, P., Ellsworth, R., & Keas, T. (2001). Enhancing pre-K-16 PDS programs through the implementation of a collaborative strategic plan. Kansas State Department of Education Title II Initiating or Enhancing Professional Development Schools in Teacher Preparation Units in Kansas. \$19,602.

Behrendt, T., Ellsworth, R., & Lane, R. (2001). Wichita area transition to teaching program (WATT). U.S. Department of Education, Office of Elementary and Secondary Education, Transition to Teaching Program. \$700,000 over three years.

James, M., Lane, B., Sherman, T., Anderson, P., & Ellsworth, R. (2001). Enhancing pre-K-12 PDS programs through "re-visioning". Kansas State Department of Education Initiating or Enhancing Professional Development Schools in Teacher Preparation Units in Kansas. \$12,500.

Ellsworth, R., Gladhart, M., Carroll, J., Fillion, B., & Gibson, K. (2000). Models, Mentors, and Mobility (Project M³: Tomorrow's Technologically Astute Teachers. U.S. Department of Education Preparing Tomorrow's Teachers to use Technology (PT3) Grant Program. \$1,108,258 over three years.

Ellsworth, R., Gladhart, M., Carroll, J., & Anderson, P. (1999). Project EXCITE: Expanding Curriculum Integration through Technology Education. U.S. Department of Education Preparing Tomorrow's Teachers to use Technology (PT3) Grant Program. \$111,184.

Ellsworth, R., Kear, D., & McDonald, D. (1996). University, public school collaboration on a site-based graduate program to meet teachers' in-service professional development needs. Kansas State Board of Education Goals 2000 Pre-service Teacher Education and Professional Development Subgrant. \$15,146.

Ellsworth, R., & Wright, M. (1995). Professional development school partnership of Wichita State University College of Education and the Horace Mann, Irving, Park (HIP) Foreign Language Magnet School. Kansas State Board of Education Goals 2000 Pre-service Teacher Education and Professional Development Subgrant. \$20,000.

Synergistic Activities

Since 1990, Dr. Ellsworth has been in administrative roles within the College of Education at Wichita State University. In those roles he has been actively involved in numerous initiatives within the university as well as in partnership with state and local agencies. A sample of some recent activities includes:

- Co-writing and co-directing a \$700,000 DOE grant for the alternative certification of teachers.
- Co-writing and co-directing a \$1.1 million Preparing Tomorrow's Teachers to Use Technology grant
- Co-writing two Title II grants for Professional Development School Enhancement for \$36,000.
- Active involvement in the development and grant support (through Goals 2000) of pre-K-12 WPS/WSU Professional Development Schools
- Active involvement in the development and grant support (through Goals 2000) of a site-based masters degree program
- Active involvement in the development of the Center for Physical Activity and Aging

Collaborators & Other Affiliations

Dr. Terry Behrendt, Wichita Public Schools
Ms. Teri Keas, Wichita Public Schools
Dr. Craig Elliott, Maize Public Schools
Dr. Don Wells, Haysville Public Schools
Dr. Dan Peters, Renwick Public Schools
Dr. Bob Voboril, Wichita Catholic Diocese Schools

Co-Investigator

Donna J. Hawley (Wolfe)
Professor and Director
Institutional Research
Wichita State University
Wichita, Kansas, 67260-0041
Phone: 316- 978-3015; FAX: 316-978-3016
E-mail: donna.hawley@wichita.edu

Education:

University of Kansas, School of Education, Lawrence, KS	Ed.D.	1980	Higher Ed./Administration
University of Kansas, School of Nursing, Kansas City, KS	M.N.	1981	Nursing
University of Missouri-Kansas City, Kansas City, MO	M.A.	1971	Educational Administration
University of Iowa, College of Nursing, Iowa City, IA	B.S.N.	1968	Nursing
Moline Public Hospital, School of Nursing, Moline, IL	Diploma	1964	Nursing

Professional Experience:

Academic Experience

1999 - Present	Professor and Director, Institutional Research, Wichita State University, Wichita, KS
1981 – 1999	School of Nursing, Wichita State University, Wichita, KS 1981 – 1984: Assistant Professor 1984: Tenure awarded 1984 – 1992: Associate Professor 1992 – Present: Professor
1984 – 1999	Director, Graduate Nursing Program, School of Nursing, Wichita State University, Wichita, KS
1987 - 1990	Editor, Arthritis Care and Research, quarterly, peer reviewed publication of the Association of Rheumatology Health Professionals.
1979 - 1981	Assistant Professor & Chairperson, Department of Nursing, Saint Mary College, Leavenworth, KS.
1972 – 1978	Director, Division of Nursing, Kansas City Kansas Community College, Kansas City, KS
1970 – 1972	Instructor, Division of Nursing, Kansas City Kansas Community College, Kansas City, KS

Professional Memberships:

Association for Institutional Research
Association of Rheumatology Health Professionals (ARHP)
Arthritis Foundation, Kansas Chapter
American Nurses Association
American Association of University Professors
Phi Kappa Phi

Publications: (Articles, Chapters)

- Hawley, DJ Psychological Distress and clinical outcomes. In Walker ,JM and Helewa, A. Physical Therapy in Arthritis. 2nd edition. In Press, scheduled publication date: 2003.
- Hawley DJ. Functional ability, health status, and quality of life. In Robbins, L, Burckhardt, CS, Hannan, MT, & DeHoratius, RJ, editors. *Clinical Care in the Rheumatic Diseases*. 2nd Edition. Atlanta: American College of Rheumatology, 2001; P. 53-59.
- Hawley DJ & Wolfe F. Fibromyalgia. In Goldman MB, Hatch MC, editors. *Women and Health*. San Diego: Academic Press. 2000.
- Wolfe, F. & Hawley, D. J. The comparative risk and predictors of adverse gastrointestinal events in rheumatoid arthritis and osteoarthritis: A prospective 13 year study of 2131 patients. *J.Rheumatol*. 27[7], 1668-1673. 2000.
- Wolfe, F., Hawley, D. J., Goldenberg, D. L., Russell, I. J., Buskila, D., & Neumann, L. The assessment of functional impairment in fibromyalgia (FM): Rasch analyses of 5 functional scales and the development of the FM Health Assessment Questionnaire. *J.Rheumatol*. 27[8], 1989-1999. 2000.
- Hawley, D. J., Wolfe, F., & Pincus, T. Use of combination therapy in the routine care of patients with rheumatoid arthritis: Physician and patient surveys. *Clin.Exp.Rheumatol* 17[6], S78-S82. 1999.
- Wolfe, F. & Hawley, D. J. Psychosocial factors and the fibromyalgia syndrome. *Z.Rheumatol* 57, 88-91. 1998.
- Wolfe, F. & Hawley, D. J. The long-term outcomes of rheumatoid arthritis: Work disability: A prospective 18 year study of 823 patients. *Journal of Rheumatology* 25[11], 2108-2117. 1998.
- Wolfe, F. & Hawley, D. J. Evidence of disordered symptom appraisal in fibromyalgia: Increased rates of reported comorbidity and comorbidity severity. *Clin.Exp.Rheumatol* 17[3], 297-303. 1999.
- Hawley DJ. Clinical Outcome Measures in the Rheumatic Disorders. In Melvin J, Jensen G, editors. *Rehabilitation Series Vol. 1, Evaluation and Management of Arthritis in Rehabilitation*. Washington: American of Occupational Therapy Association. 1998.
- Wolfe F, Hawley DJ. The long-term outcomes of rheumatoid arthritis: work disability: a prospective 18 year study of 823 patients. *Journal of Rheumatology*. 1998; 25(11):2108-2117.
- Hawley DJ, Wolfe, F. Fatigue and Musculoskeletal Pain. *Physical Medicine and Rehabilitation Clinics of North America*. 1997; 8:101-112.

- Wolfe F, Hawley DJ. Measurement of the quality of life in rheumatic disorders using the EuroQol. *British Journal of Rheumatology*. 1997; 36(7):786-96.
- Wolfe F, Hawley DJ, Peloso P, Wilson K, Anderson J. Back Pain in Osteoarthritis of the knee. *Arthritis Care & Research*. 1996; 9:376-383.
- Wolfe F, Hawley DJ, Wilson K. The prevalence and meaning of fatigue in rheumatic disease. *Journal of Rheumatology* 1996; 23:1407-1417.
- Hawley DJ. Psychological distress and clinical outcomes. In Walker JM, Hilwa A, editors. *Physical Therapy in Arthritis*. Philadelphia: W.B. Saunders, 1996;. P. 113-128.
- Hawley DJ. Health Status Assessment. In Wegner ST, Belza BL, Gall EP, editors. *Clinical Care in the Rheumatic Diseases*. Atlanta: American College of Rheumatology, 1996; P. 25-32.
- Hawley DJ. Psycho-educational interventions in the treatment of rheumatoid arthritis *Bailliere's Clinical Rheumatology*. 1995; 9:825-836.
- Hawley DJ, Wolfe F. Reply to J.E.L Owen (refers to article above) *Pain* 1995 62:126.
- Meyer CL, Hawley DJ. Characteristics of participants in water exercise programs compared to patients seen in a rheumatic disease clinic. *Arthritis Care and Research*. 1994; 7:85-89.
- Connors HR, Hawley DJ, Kruger S, Swanson J, Lee CA. Kansas primary care nurse practitioner program: a partnership in education. *Kansas Nurse*.1994; 69:4.
- Hawley DJ, Wolfe F. Effect of light and season on pain and depression in subjects with rheumatic disorders. *Pain* 1994;59:227-234.
- Wolfe F, Cathey MA, Hawley DJ. A double-blind placebo controlled trial of fluoxetine in fibromyalgia. *Scandinavian Journal of Rheumatology*. 1994; 23:255-259.
- Wolfe F, Hawley DJ. Fibromyalgia in the adult Danish population (Letter). *Scandinavian Journal of Rheumatology*. 1994; 23:55.
- Hawley DJ, Wolfe F. Depression is not more common in rheumatoid arthritis: a 10-year longitudinal study of 6,608 rheumatic disease patients. *Journal of Rheumatology*. 1993;20:2025-2031.
- Wolfe F, Hawley DJ, Cathey MA. Measurement of gold treatment effect in clinical practice: evidence for effectiveness of intramuscular gold therapy. *Journal of Rheumatology*. 1993;20:797-802.
- Wolfe F, Ross K, Hawley DJ, Roberts FK, Cathey MA. The prognosis of rheumatoid arthritis and undifferentiated polyarthritis syndrome in the clinic: A study of 1141 patients. *Journal of Rheumatology*. 1993; 20:2005-2009.
- Wolfe F, Hawley DJ. The relationship between clinical activity and depression in rheumatoid arthritis. *Journal of Rheumatology*. 1993; 20:2023-2037.
- Wolfe F, Hawley DJ. Fibromyalgia. in Kelly WN, Harris EDJ, Ruddy S, Sledge CB (editors). *Textbook of Rheumatology 1993* (Supplement).

Hawley DJ, Jeffers JJ. Scientific misconduct is a dilemma for nursing *Image: Journal of Nursing Scholarship*. 1992; 24:51-56.

Hawley DJ, Wolfe F. Sensitivity to change of the Health Assessment Questionnaire (HAQ) and other clinical and health status measures in rheumatoid arthritis: results of short term clinical trials and observational studies versus long term observational studies. *Arthritis Care and Research*. 1992; 5:137-145.

Hawley DJ, Wolfe F, Cathey MA. The Sense of Coherence Questionnaire in patients with rheumatic disorders. *Journal of Rheumatology*. 1992; 19:1912-1918.

Budget

Salaries

Principal Investigator: Professor Joseph Mau:	2-FTE academic months @ \$6533/mo	\$13,065
Graduate Student:	3-FTE academic months @ \$1,200/mo	\$3,600
Fringe Benefits Principal Investigator @ 24%		\$3,136
Fringe Benefits Graduate student @ 1.3%		\$47
Total Salaries and Benefits		<u>\$19,848</u>
Travel (AIR Forum, other conferences)		
AIR conference		\$1200
AERA conference		\$1200
Research Training Institute (Research Triangle Park, NC)		\$2325
Total Travel		<u>\$4,725</u>
Other Direct Costs		
Dissemination and website posting		\$700
Materials and Supplies		\$200
Statistic analysis software & Manual (SUDAAN)		\$495
Total Other Direct Costs		<u>\$1395</u>
TOTAL AMOUNT OF AWARD		<u>\$25,968</u>

Budget Justification

Salaries and benefits:

The principal investigator will devote 1.5 summer months in 2004 and 0.5 month in May of 2005 solely to this grand project. The dollar amount shown in the line item represent 2 FTE academic months of salaries. The project will also support a graduate research assistant's salary and benefits for 3 academic months. During the two summer months the major statistical analyses will be completed. Key findings will be written and submitted for the 2005 AERA conference. A second paper will be written and submitted for AIR annual conference in March, 2005. A manuscript will be completed and submitted to a national refereed journal by May, 2005.

Travel:

The budget reflects three travel needs, two for professional conferences and one for training/consultation purposes. Estimated costs for these trips are as follows:

AERA and AIR Conferences

Registration fee	\$250 x 2
Air fare	\$500x 2
Lodging	\$120 per day for 3 days x 2
Per diem	\$30 per day for 3 days x 2

Course training and consultation (Research Triangle Park, NC)

Air Fare	\$500
Course fee (3 days)	\$1375
Lodging	\$120 per day for 3 days
Per diem	\$30 per day for 3 days

Other direct cost:

The budget also includes the purchase of a statistical software and training manual appropriate for variance estimation involved in complex sampling designs. The cost of SUDAAN statistical software academic version is estimated for \$385 and the user's manual is \$95.

Current and Pending Support:

None.

Facilities, Equipment and Other Resources:

The investigators' institute has sufficient equipment and resources enable the investigators to conduct this research project. The principal investigator has convenient access to computer, printer, word processor, and statistical analysis software.

Project Timeline:

June 1, 2004 – May 30, 2005

6/1 – 6/15 2004	Hire and train research assistant. Update literature, refine research questions, identify and finalize the variables for study. Tag the variables from the Electronic code book. Extract the tagged variables and prepare data for statistical software.
6/15 – 6/31 2004	Become familiar with variance estimate software, participate in training institute and consultation activities, conduct descriptive analyses.
7/1 – 7/15 2004	Conduct statistical analyses and writing results.
7/15 – 7/31 2004	Draft AERA proposal for conference presentation.
Jan. –Feb. 2005	Draft AERA paper if accepted. Draft AIR conference proposal.
March 2005	Present findings at AERA if accepted.
April 2005	Preparing reports for dissemination. Conduct college-wide meeting to share findings.
May 2005	Prepare and submit manuscripts for publications. Prepare final report. Send bound reports and e-mail executive summary to the interested parties. AIR presentation if accepted.