ASSOCIATION FOR INSTITUTIONAL RESEARCH
2009 RESEARCH APPLICATION

Application ID: RG 09-141

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Title of Proposal

English Language Learners' Access to and Attainment in Postsecondary Education

Statement of the research problem and national importance

Do English language learners (ELLs) attend and graduate from college at lower rates than English monolingual students? If so, what factors inhibit their college participation? Are their disadvantages primarily associated with limited English proficiency, or do other, nonlinguistic, factors contribute to their difficulty as well? These are questions that we propose to address.

ELLs are the fastest growing subgroup of the school-age population in the U.S. (Wolf, Herman, Bachman, Bailey, & Griffin, 2008). In the K-12 context, an estimated 5.2 million ELLs are enrolled in public schools, representing approximately 10.5% of the total school enrollment (NCELA, 2006). The U.S. Department of Education predicts that this figure will increase to approximately 25% of students by 2025 (Spellings, 2005). Clearly, a diversity factor that is projected to affect a quarter of the whole public school student population in the U.S. needs to be examined extensively in terms of its effects on students' educational success and trajectories. Indeed, in K-12 education, English proficiency has long been recognized as a major factor influencing immigrant children's academic performance. In postsecondary education (PSE), however, we know surprisingly little about ELLs' college-going patterns. Researchers interested in underserved students' transition to PSE tend to categorize them in terms of other diversity factors such as race/ethnicity (Deil-Amen & Turley, 2007; Hirschman & Lee, 2005; Kao & Thompson, 2003; Lee, 1997), Latinos (Arbona & Nora, 2007; Swail, Cabrera, Lee, & Williams, 2005), socioeconomic status (Bowen, Kurzwell, & Tobin, 2005; Long, 2007), and first-generation college students (Pascarella, Pierson, Wolniak, & Terenzini, 2004). ELLs may be subsumed under one or more of these categories but are hardly ever studied in their own right. It is emblematic, for instance, that despite hundreds of studies conducted using the NELS:88 data, to our knowledge, only three (Bennici & Strang, 1995; Guglielmi, 2008; Strang, Winglee, & Stunkard, 1993) have examined issues concerning ELLs as a central topic.

This study aims to fill this gap in knowledge by examining ELLs' access to and attainment in PSE, using the National Education Longitudinal Study of 1988 (NELS:88). This is the first study that examines ELL's college-going patterns as compared to those of English-proficient students on a national level. In addition, in line with this year's NPEC's focus, "Student Flow in PSE," this study proposes to study both ELLs' access to *and* attainment in PSE, comparing their access and attainment patterns and exploring factors contributing to these two outcomes. In this study, *ELLs* refer to students who come from non-English-speaking homes and who are identified as limited English proficient. By *access to PSE*, we mean beginning a program of study beyond high school, and by *attainment in PSE*, we mean completing a certificate/degree program beyond high school.

Timeliness

Since the No Child Left Behind (NCLB) Act of 2001 was signed into law, there has been growing pressure from the federal government to hold states, school districts, and schools accountable for the academic achievement of all students, including ELLs. ELLs are one of the four subcategories of students whose adequate yearly progress (AYP) must be reported separately. Thus, regardless of the NCLB Act's actual impact on ELLs' academic performance—which has generally been reported to be negative (Menken, 2008; Solórzano, 2008; Wiley & Wright, 2004)—at least the intent of the law makes it clear that schools cannot simply ignore ELLs' academic underachievement. Now is a good time to make educators and policy makers aware of the state of ELLs' participation (or lack thereof) in PSE in addition to their performance in K-12 education—since surely part of the effort to strive for educational equity for this group of students includes promoting access to PSE.

Another reason to investigate ELLs' PSE access and attainment is the growing importance of PSE for job opportunities and earnings. In the current knowledge economy, an increasing number of jobs require at least some level of PSE, including jobs that previously required only a high school diploma (Carnevale & Desrochers, 2003). Also, a college degree makes a tremendous difference in one's earning power. In 2003, the median salary for a full-time worker with a bachelor's degree was 62% more than the median salary of a full-time worker with a high school diploma (Baum & Payea, 2005). Thus, if ELLs lag behind English-proficient students in terms of their participation in PSE, there will be severe and lasting repercussions for their future economic and occupational prospects.

Review the literature and establish a theoretical grounding for the research

Prior Research: Focused on K-12 Education

In K-12 education in North America, English proficiency has long been recognized as a major factor influencing immigrant children's academic performance (e.g., Callahan, 2005; Collier, 1987; Cummins, 2000, 2001; Thomas & Collier, 1997, 2002; Valenzuela, Fuller, & Vasquez Heilig, 2006). Whereas it takes ELL children only 1 to 2 years to develop conversational fluency in English, grade-level academic literacy skills take 4 to 7 years to acquire (Cummins, 1981; Hakuta, Butler, & Witt, 2000). Thomas and Collier (1997, 2001) point out that since ELLs typically start with lower achievement than their grade peers because of their limited English proficiency, if they are to close the gap by the end of high school, they need to make more academic progress every year than typically progressing English-speaking students—in a language they have not yet mastered. It is thus not surprising that most ELLs do not catch up. Just to cite one example, in three states—Indiana, Minnesota, and Massachusetts—the percentage of ELLs who passed the high school exit exam in math on the first try in 2001/2002 ranged from 32 to 42% (vs. 65 to 75% for all students) while the range for the English language arts exit exam was 28 to 39% (vs. 68 to 82% for all students) (Chudowsky, Kober, Gayler, & Hamilton, 2002).

Prior Research: Limited Research in PSE Contexts

In the K-12 context in the US, then, there has been a long-standing recognition that ELLs face significant educational challenges. In PSE research, however, ELLs have received little attention compared to other underrepresented populations such as racial/ethnic minorities, low-income students, first-generation college students, and students with disabilities. Research that does focus on ELLs in PSE has mostly analyzed their linguistic challenges such as their academic literacy and second language writing (Harklau, 1999, 2000, 2001; Harklau, Losey, & Siegal, 1999; Leki, 2001, 2007; Leki & Carson, 1997; Spack, 1997; Zamel, 1995; Zamel & Spack, 2006). ELLs in PSE has largely been conceptualized as a linguistic issue.

A few studies, however, have addressed ELLs' transitions to PSE as a pipeline issue. Callahan and associates (2005; Callahan, Wilkinson, Muller, & Frisco, in press) argue that not only ELLs' English proficiency, but also their classification as ELLs itself, has consequences for access to college preparatory courses in high school. Once students are identified as ELLs, they tend to be assigned to non-college-track programs, making them ineligible to apply to four-year colleges.

Strang, Winglee, and Stunkard (1993) discussed various methods of identifying limited English proficient (LEP) students in the NELS data. They criticized the frequently-used composite indicator *BYLEP* for its high yield of false positives, and offered an alternative method of categorizing NELS students into three linguistic groups: (1) *LEP*, (2) other language minority (*Other LM*)—language minority students who are proficient in English—and (3) native English speakers (*Native English*).

Bennici and Strang (1995) used Strang et al.'s (1993) categories to examine high school dropout rates and aspirations and expectations for PSE. By the second NELS follow-up, 47 percent of *LEP* youth had dropped out of school (versus 19% for *Other LM* and 14% for *Native English* students). Among *LEP* students who had remained in school, 42% expected to obtain a bachelor's degree (versus 64% *Other LM* and 62% *Native English* students). *LEP* students were on the whole "poorer, older, and more likely to be from a [racial] minority group" (p. 33) than *Other LM* or *Native English* students. Likewise, LEP students were disproportionately represented in general-track programs in high school.

Theoretical Grounding

The limited existing research strongly indicates that a) ELLs are less likely to access PSE than English-proficient students, and b) that their disadvantages are not only linguistic in nature but also involve other nonlinguistic and structural constraints. Since so little research had been done, the PI of this proposed project conducted a small-scale interview study in 2006-2007 (Kanno & Varghese, 2008) with undergraduate level ELLs to identify the challenges that ELLs face in accessing four-year college education. Bourdieu's theory of cultural reproduction was used as the theoretical framework for the interview study, and both Bourdieu's theory and the findings from the interview study will provide the theoretical grounding for the proposed project.

Bourdieu (1977; Bourdieu & Passeron, 1990) argues that schools contribute to the reproduction of existing power relations in society by privileging the cultural capital—knowledge, dispositions, attitudes, and skills—of dominant-class students. Even though this cultural capital is accessible only to those who belong to the dominant class, the educational system functions as if such capital were equally available to everyone, thereby systemically disadvantaging working-class and minority students (Bourdieu, 1986). Since cultural capital is related to other forms of capital such as economic capital (income, wealth) and social capital (access to valuable social networks) (Bourdieu, 1986), students with low-level resources in these forms of capital are likely to start their education with considerable disadvantages and exit from the educational system with smaller gains in cultural capital than their middle-class counterparts.

Kanno and Varghese (2008) applied Bourdieu's theory in their analysis of ELL's access to four-year college education. They found that immigrant ELLs encounter substantial challenges in reaching four-year institutions: In addition to individual factors (e.g., limited English proficiency), their relative lack of family and school resources was an obstacle to four-year college access. Parents' unfamiliarity with the U.S. higher education system made it necessary for ELLs to seek college-related information elsewhere. School was the most obvious alternative resource, but on the whole ELLs did not receive adequate college guidance from their high schools because they tended to attend schools that were themselves lacking in resources (Bennici & Strang, 1995). In sum, Kanno and Varghese's (2008) findings predict that ELLs are disadvantaged not just in terms of their English proficiency but also in their economic and social capital. These findings also strongly point to the need to examine not only individual-level factors but also resources that ELL students can access through their family and school.

Describe the research method that will be used

We aim to examine ELLs' access to and attainment in PSE, using NELS:88. This nationally representative sample of 8th graders, who were followed for 12 years, constitutes an ideal dataset to examine ELLs' long-term trajectories in PSE. The time span is long enough to allow an examination of not only students' first PSE access, but also their ultimate college attainment. Moreover, NELS intentionally over-sampled Latino and Asian students (Strang et al., 1993), who now constitute the majority of ELLs (Kindler, 2002).

We will use a modified version of the three linguistic status categories used by Strang and associates (Bennici & Strang, 1995; Strang et al., 1993). While Bennici and Strang (1995) analyzed college aspirations and expectations for NELS:88 participants, they did not examine actual college-going patterns (at that time they lacked the third follow-up data). With the 2000 data now available, we will be able to answer the following research questions:

1. Are ELLs' patterns of access to and attainment in college (two- and four-year) different from those of English monolingual (EM) and English-proficient language minority students (EP)?

2. If there are differences among these three groups (ELLs, EPs, and EMs), which variables predict level of access and level of attainment?

We will first identify three different groups of students from the NELS sample who persisted through 2000, using a combination of student and teacher responses in the BY surveys and the high school transcript records. The three groups are operationalized as follows:

English language learners (ELLs): students whose first language is not English or who speak a primary language other than English at home, *and* who exhibit signs of limited English proficiency (estimated $N = 339$ based on preliminary analyses with public-use data)

English proficient students (EPs): students whose first language is not English or who speak a primary language other than English at home, but who currently exhibit no sign of difficulty using English (estimated $N = 1{,}547$)

English monolingual students (EMs): students who come from homes where only English is spoken and who themselves speak no other language than English (estimated $N = 8{,}578$)

Research Question 1: Patterns of Access and Attainment

In two separate analyses, we will cross-tabulate students' language background (ELL, EP, and EM) with PSE access and degree attainment. PSE access will indicate whether students completed high school and, if so, what types of PSE they subsequently accessed (less than high school, high school diploma/GED, less than two years of PSE, two-year college, or four-year college). PSE attainment will indicate the highest degree attained by students (using the same categories). PSE access will be identified from both the NELS:88 High School Transcript (1994) and Postsecondary Educational Transcript (2000) files, and PSE attainment will be identified from the PSE Transcript files. We will use chi square tests to determine if three language groups show significantly different patterns in PSE access and/or attainment.

Research Question 2: Predictors of Access and Attainment

If, consistent with our preliminary analyses, we find statistically significant differences in access or attainment among the three groups, we will use multilevel ordinal regression (using MPlus) to analyze which predictors account for these differences. In this analysis, we will account for the fact that students (at Level 1) are nested within schools (at Level 2), as in Perna (2006).

Person-level (L1) predictors. The predictors concerning individual students' backgrounds and characteristics will consist of *language background*, *race*, and *socioeconomic status*. Language background indicates students' linguistic capital. Race affects both students' cultural capital and social capital: cultural capital because non-White students' knowledge and dispositions are often measured against the White standards of culture (Horvat, 2000; Yosso, 2005); social capital because non-White students typically have less access to resource-rich social networks (Teranishi & Briscoe, 2006). Socioeconomic status (SES) indicates students' economic capital. Based on our exploratory analyses and findings from Kanno and Varghese (2008), we will use family income as the variable for students' SES. Kanno and Varghese found that many immigrant parents experience an economic and status downturn when they immigrate to the U.S. (e.g., a former engineer turned janitor). We will therefore use *family income* to index the economic resources available to the student in the U.S., whereas parental education level will be used as an indication of the student's familial cultural and social capital.

Predictors for the cultural and social capital available to the students through their family will include *parents' highest level of education*, *family composition* (i.e., two parents/guardians versus one parent/guardian), *parental expectations for child's educational attainment*, and the degree of *parent-child discussion regarding PSE plans*. College-educated parents are more likely to expect their children to go to college and can provide more information on necessary academic preparation and the importance of a college degree than non-college educated parents (Pascarella et al., 2004; Plank & Jordan, 2001). Two-parent households can afford more time and energy to support students' transitions from high school to PSE than single-parent households (Hirschman & Lee, 2005). Finally, parents' expectations for the child's educational attainment and the frequency of parent-child conversation about PSE plans reflect the strength of college expectations parents communicate to their children and the amount of active support they provide for the children's college going.

The final individual-level variable will be students' course-taking choices, as reflected in *academic intensity of students' high school curriculum*. At the student level, this variable reflects the choices that individual students make—in consultation with their family and given the student's ability level—about which courses to take.

School-level (L2) predictors. These institutional-level predictors indicate the kinds and amount of cultural and social capital high schools offer to their students. These predictors will include *the percent of free/reduced price lunch in the high school*, *the percent of minority students in the high school*, *the percent of graduates advancing to two- and four-year colleges immediately after high school*, *mean school-level academic intensity of high school curriculum*, and *the availability of help from teachers and counselors*. Minority students, including ELLs, are concentrated in high schools in poor neighborhoods with high ratios of minority students and low-income students (Bennici & Strang, 1995;

Darling-Hammond, 2007). Unfortunately, these two indices are good proxies for the lack of resources available at the school (Darling-Hammond, 2007). The availability of academically rigorous programs and the high rates of college advancement of graduates indicate the general academic standing of the school. The mean school-level academic intensity indicates the school-level cultural capital that students can take advantage of in their own high school. The availability of help from teachers and counselors indicates the level of guidance on high school course planning and college preparation (i.e., institutional social capital) that students can expect from their high school.

Hierarchical ordinal regressions will be used to model the effect of the predictors on the probability of the highest level of educational access or attainment, respectively, relative to a reference group. Because of the paucity of prior research on ELLs and due to difficulties with model convergence in analyses such as this, we do not propose to model higher levels of nesting (e.g., at the state level). We are using ordinal regression rather than multinomial logistic regression because prior research has clearly shown that each higher level of access and attainment is associated with better economic and societal outcomes (Baum & Payea, 2005). This analytical approach should afford us better statistical power and should be better able to answer the research question of interest.

Will you use a NCES target dataset?

Yes

Will you use a NSF target dataset?

No

Please select the datasets that you intend to use:

NCES-National_Education_Longitudinal_Study_of_1988_(NELS:88)

Explain why each dataset best serves this research.
Include a variable list for each dataset used.

The datasets to be used are the NCES's NELS:88/94 Restricted Use dataset and NELS: 88/2000 Postsecondary Education Transcript dataset (access provided by the Temple Institute for Schools and Society site license). As noted above, the time span of NELS:88 is long enough to allow an examination of not only students' first access to PSE, but also their ultimate college attainment. The more recent ELS dataset will eventually provide comparable data, but not until the fourth round of data have been collected and prepared for dissemination.

VARIABLE LIST

Student language background

First language learned: BYS17/18
Home language: BYS20/21
Self-evaluated English proficiency (4 areas): BYS27A-D

Teacher's identification of student as LEP: TLEP
ESL/bilingual courses taken in Grade 8: identified from the restricted-use High School Transcript (1994)

Postsecondary education access and attainment
Derived from High School Transcript (1994) and Postsecondary Education Transcripts (2000)

Student-level predictors
Student characteristics
Language background (above)
Student race: F3RACE
Family income: F2P74

Family resources
Parental education: derived from F2N8A (father's highest level of education) and F2N8B (mother's)
Family composition: BYFCOMP
Parental expectations for child's educational attainment: BYP76
Parent-child discussion regarding PSE: F1S105G

Student's academic preparation
Academic intensity Quintile: ACCURHSQ

School-level predictors
Percent free/reduced price lunch at student's high school: G8LUNCH
Percent minority: G8MINOR
Percent graduates advancing to 2- and 4-year colleges: derived from student access data
Mean-level academic intensity of high school curriculum: derived from ACCURHSQ
Talked with high school teacher or guidance counselor: F2S 58A

Weight
Panel weight, BY, F1, F2, F3, and F4: F4PNLWT

Will you address the NPEC focus topic?
Yes

If yes, please briefly describe:
The proposed study addresses the NPEC focus topic of "student flow" by analyzing the transition of ELLs into PSE and their movement within levels of PSE and eventual degree attainment.

Provide a timeline of key project activities:
Month: Post notification, pre-award
Activities: Set up advance Temple accounts. Hire GA (hourly basis).
Measurable outcomes: Temple Advance Cost center created, student hired

Month: May, 2009
Activities: Begin identification of students receiving ESL instruction in Grade 8 and create PSE access and attainment variables from transcript data in restricted-use datasets. Categorize students into three language groups.
GA leads analyses of restricted–use files (40 hrs.).
Measurable outcomes: Creation of ESL and access/attainment variables
Categorization of students into ELLs, EPs, and EMs

Month: June, 2009
Activities: Create composite variables. Run basic descriptive. GA assists with all tasks, except writing (30 hrs.).
Measurable outcomes: Manuscript sections written: composite variable creation and participant descriptives

Month: July, 2009
Activities: Conduct analyses relevant to research question 1.
Write and proofread conference paper proposals for AERA and AAAL (American Association for Applied Linguistics) annual meetings.
GA assists with all tasks, except writing (10 hrs).
Measurable outcomes: Manuscript sections written: Results for research question 1
Submit conference paper proposals for AERA and AAAL

Month: August, 2009
Activities: Conduct analyses relevant to research question 2: Begin multilevel ordinal regression analyses predicting PSE access.
GA assists with all tasks, except writing; lead on copyediting results (10 hrs).
Measurable outcomes: Preliminary results for multilevel ordinal regression analyses predicting PSE access

Month: September, 2009
Activities: Conduct analyses relevant to research question 2: Complete multilevel ordinal regression analyses predicting PSE access.
Write and proofread conference paper proposal for AIR annual forum.
GA assists with all tasks, except writing (10 hrs).
Measurable outcomes: Final results for multilevel ordinal regression analyses predicting PSE access
Submit conference paper proposal for AIR annual forum

Month: October, 2009
Activities: Conduct analyses relevant to research question 2: Complete multilevel ordinal regression analyses predicting PSE attainment.
GA assists with all tasks, except writing; lead on copyediting results (5 hrs).

Measurable outcomes: Final results for multilevel ordinal regression analyses predicting PSE attainment

Month: November, 2009
Activities: Write remainder of methods section—data analysis procedures.
Write results section of manuscript: Research questions 1 and 2.
GA assists with proofreading, checking references (5 hrs).
Measurable outcomes: Draft of methods section
Draft of results section

Month: December, 2009
Activities: Write discussion and implications section.
Write mid-year progress report.
Measurable outcomes: Draft of discussion
Mid-year progress report submitted before 12/22/09

Month: January, 2010
Activities: Write literature review and theoretical grounding. Search for newly-published research. Revise literature review and theoretical grounding.
Measurable outcomes: Draft of introduction

Month: February, 2010
Activities: Polish writing; revise all sections of manuscript, check references cited.
Complete AAAL full paper.
GA assists with proofreading, checking references (5 hrs).
Measurable outcomes: Complete draft of manuscript

Month: March, 2010
Activities: Present at AAAL.
Complete and upload full AERA paper.
GA assists with proofreading, checking references (5 hrs).
Measurable outcomes: AAAL presentation
AERA full paper uploaded

Month: April, 2010
Activities: Present at AERA.
Final polishing and submission of manuscripts.
GA assists with proofreading, checking references (10 hrs).
Submit manuscripts to journals.
Measurable outcomes: AERA presentation
2 journal article manuscripts submitted

Month: Post-award
Activities: Write and submit final grant report.
Present at AIR annual forum.
Measurable outcomes: Final grant report submitted by 5/30/2010
AIR forum 5/29/2010-6/2/2010

Two copies of final paper concerning NPEC focus topic submitted to AIR by 6/1/2010

Budget Justification
Total estimated award requested is $39,919. The budget includes two-course buyout for Kanno and 0.5-month summary salary for Cromley; 130 hours of work by a graduate research assistant; travel to three conferences (AIR, AERA, and AAAL); and photocopy and postage. Please note that we are hiring our research assistant on an hourly basis. Therefore, per instruction from the AIR staff, we marked the FTE for the graduate research assistant as 0% while requesting $2,340 for her hourly work in the budget requirements section of the application.

List deliverables such as research reports, books, and presentations that will be developed from this research initiative:

Three conference presentations:
AIR Annual Forum (05-06/2010)
American Educational Research Association Annual Meeting (04/2010)
American Association for Applied Linguistics Annual Conference (03/2010)

Two journal publications:
One in an applied linguistics journal (*TESOL Quarterly* or *Language Policy*)
One in a higher education journal (*Research in Higher Education*, *The Journal of Higher Education*, or *Review of Higher Education*)

NPEC focus topic paper: to be submitted by 06/01/2010

Describe how you will disseminate the results of this research:

We plan to present the findings of this study at three conferences: the Association for Institutional Research (AIR), the American Association for Applied Linguistics (AAAL), and the American Educational Research Association (AERA). Presenting at these high profile conferences, which represent three different areas—higher education, applied linguistics, and general education, respectively—will ensure the widest dissemination possible and opportunities for obtaining feedback on our analyses from different disciplinary perspectives. We anticipate the publication of at least two journal articles from this project: one targeting the applied linguistics audience (e.g., *TESOL Quarterly*) and another for the higher education audience (*Research in Higher Education*, *The Journal of Higher Education*, or *Review of Higher Education*). Audiences for these two journals do not overlap, and it will be important to inform both higher education and applied linguistics fields to encourage cross-fertilization. Further, since we live and work in Philadelphia, we plan to share the findings of this study with the School District of Philadelphia, which has recently set as its central goals decreasing high school dropout rates and increasing college-going rates. We are in communication with Ms. Linda Chen, the Deputy of Teaching and Learning, who oversees ESOL education in the district, and the results of this study will be shared with her.

Provide a reference list of sources cited:

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Statement of Institutional Review Board approval or exemption

Once our request for access to the restricted use datasets of NELS:88 via the Temple Institute for Schools and Society (ISS) is approved (expected January, 2009), we will submit a Request for Protocol Review to the Temple IRB Committee B—Social and Behavioral Sciences. We fully expect that this request will be approved in the Exempt category. Depending on the timing of the ISS approval, we will be able to submit in time for the February IRB meeting, and we expect approval by February-March, 2009.

Statement of Use of Restricted Datasets

We need access to NELS:88/94 Restricted Use dataset and the NELS:88/2000 Postsecondary Educational Transcript (PET) dataset because we cannot conduct our analyses without using the transcript data in the restricted use files. Specifically, we will use the high school transcript files from the NELS:88/94 Restricted-Use file for two analyses: 1) to determine which students coded as ELLs were enrolled in ESL classes in Grade 8, 2) to use the Academic Intensity variable as a predictor in our ordinal regression analyses. We will use the high school transcript and PET files to identify true access to and attainment in PSE. Transcript-based information is likely to be more accurate than participants' self-report in terms of their PSE access and ultimate attainment.

Temple University's Institute for Schools and Society (ISS) already has a license for use of the NELS:88 restricted-use datasets. We have already completed Affidavits of Nondisclosure and submitted them to ISS; ISS is in the process of submitting an amendment to their site license, adding Yasuko Kanno, Jennifer Cromley, and Sarah Grosik—a current graduate research assistant who works with Dr. Kanno—to the license so that we can gain access to the data.

Yasuko Kanno Biographical Sketch

This project is a true collaboration between the two PIs: Dr. Kanno contributes her expertise in applied linguistics and sociopolitical/sociocultural context of language minority education while Dr. Cromley provides her statistical expertise and experience working with national datasets.

Dr. Yasuko Kanno is Associate Professor of TESOL in the College of Education at Temple University, Philadelphia. She earned her Ph.D. at the Ontario Institute of Studies in Education of the University of Toronto in 1996 (Major: bilingual education). She has over ten years of experience as a language teacher, and prior to coming to Temple University in January, 2008, she had been a visiting professor at the Monterey Institute of International Studies in Monterey, CA (2001-02), and an assistant professor at the University of Washington in Seattle, WA (2002-2007). Her research focuses on educational opportunities for language minority students, especially the interaction between language minority students' agency and structural constraints. She is the author of two books, *Negotiating Bilingual and Bicultural Identities: Japanese Returnees betwixt Two Worlds* (Lawrence Erlbaum Associates, 2003) and *Language and Education in Japan: Unequal Access to Bilingualism* (Palgrave Macmillan, 2008).

Since 2005, Kanno has been working on English language learners' access to higher education. She is one of the few applied linguists in the U.S. who are looking at ELLs in higher education as an educational pipeline issue rather than a linguistic issue. This topic will be her central research focus for the next several years. The proposed project enhances her program of research in several ways. First, it is a logical next step from her recent qualitative interview study of undergraduate ELLs at a major public university (Kanno & Varghese, under review). Exploring the challenges and barriers that immigrant ELLs face in reaching a four-year institution, the study strongly indicated that what prevents ELLs from accessing four-year colleges is not simply their linguistic disadvantages, but also their lack of social, cultural, and

economic capital and institutional constraints. The examination of the NELS:88 data provides an opportunity to examine how some of these factors play out on a national level.

Second, since she has studied ELLs who are already in a four-year college, in the near future Kanno also plans to examine high school ELLs' college preparation and application by conducting an ethnographic study at a Philadelphia high school. In this study, she plans to follow a group of ELLs during their final 1 ½ years of high school, investigating how their initial college aspirations translate into actual applications and results. The results of the NELS analysis will inform both the purposeful sampling and the focus of the study.

Third, the proposed project will provide indispensable national-level data on ELLs' college going patterns for the edited volume that Kanno plans to compile. Since ELLs' access to higher education is an emerging topic, she has been actively cultivating a network of applied linguists, sociologists, and educational researchers working in this area. With these researchers as contributors, Kanno plans to publish an edited volume in three years. Since no other researcher has conducted a national-level analysis of ELLs' access to and attainment in PSE, the results of the proposed project will constitute a central element in this book.

Kanno serves on the editorial boards of four journals in applied linguistics/TESOL: *The Modern Language Journal*; *International Journal of Language, Identity, and Education*; *International Multilingual Research Journal*; and *Japan Journal of Multilingualism and Multiculturalism*. In addition to her two single-authored books, Kanno has also published articles in several peer-reviewed journals, including *TESOL Quarterly*, *International Journal of Bilingual Education and Bilingualism*, *International Journal of Language, Identity, and Education*, *The Language Teacher*, and *TESL Canada Journal*.

SELECTED PUBLICATIONS

Kanno, Y., & Varghese, M. (under review). *Immigrant English language learners' access to four-year college education*.

Oropeza, M. V., Varghese, M., & Kanno, Y. (under review). *ELL immigrants in higher education: Labels and accessing resources through forms of capital.*

Kanno, Y. (2008). *Language and education in Japan: Unequal access to bilingualism*. London: Palgrave/Macmillan.

Kanno, Y. (2004). Sending mixed messages: Language minority education at a Japanese public elementary school. In A. Pavlenko, & A. Blackledge (Eds.), *Negotiation of identities in multilingual contexts* (pp. 316-338). Clevedon, England: Multilingual Matters.

Kanno, Y. (2003). Imagined communities, school visions, and the education of bilingual students in Japan. *Journal of Language, Identity, and Education, 2*(4), 285-300.

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Jennifer Cromley Biographical Sketch

Dr. Jennifer Cromley is an Assistant Professor in the department of Psychological Studies in Education at Temple University. She has held this position since 2005, when she received her Ph.D. in Human Development with a specialization in Educational Psychology and a Certificate in Measurement and Statistics (36 credits) from the University of Maryland College Park.

Her research in the past has focused on cognition and motivation for reading comprehension in both traditional and electronic text. Her research has recently been expanded to include the role of cognition and motivation in retention of undergraduate science majors. She is currently PI on two NSF-funded projects—A multimethod approach to understanding dropout from STEM gateway courses (funded for 12/08-11/11) and Teaching Effective Use of Diagrammatic Reasoning in Biology (funded for 9/08-8/11). She is also the Temple site PI for an IES-funded national center, the 21st Century Research and Development Center on Cognition and Science Education (funded for 7/08-6/13).

Dr. Cromley has a specific interest in students' postsecondary educational attainment, especially in the sciences. Her NSF-funded longitudinal study will track students in the Temple biology and chemistry majors over the course of three years, using both cognitive and motivational predictors measured via questionnaires and repeated interviews. She has also conducted two research studies with large-scale datasets—using the PISA 2000, 2003, and 2006 datasets to analyze the relationship between reading achievement and science achievement and using the PISA 2000 dataset to test a multilevel path model of academic achievement motivation and reading proficiency.

Her current and future research has used a range of research methods, including multilevel modeling; think-aloud protocol research; classroom-based intervention research; tutoring studies; and survey research using motivation questionnaires, conventional tests of knowledge, cognitive and metacognitive strategy use, and reasoning with scientific diagrams. She also teaches both introductory and advanced educational statistics courses (growth curve modeling) at Temple.

Dr. Cromley is a past attendee of the AERA Institute on Statistical Analysis for Education Policy (2008), and recipient of the AERA Division C Graduate Student Research Excellence Award (2005), a Spencer Foundation Dissertation Fellowship, (2004-2005), and an AERA/Spencer Pre-Dissertation Fellowship (2002-2003).

Cromley sits on the editorial board of three Educational Psychology journals: *Contemporary Educational Psychology*, *Journal of Educational Psychology*, and *American Educational Research Journal [TLHD]*. She currently serves as an ad hoc reviewer for *Discourse Processes*, *Scientific Studies of Reading*, *Metacognition and Learning*, *Reading Psychology*, *Community Literacy Journa*l, and *Journal of the Learning Sciences*. She is also program co-chair for Division C, Section 5 of the American Educational Research Association 2009 annual meeting.

SELECTED PUBLICATIONS

Cromley, J. G. (in press). Reading achievement and science proficiency: International comparisons from the Programme on International Student Assessment. Accepted for publication in *Reading Psychology*, April, 2008.

Cromley, J. G., & Azevedo, R. (in press). Locating information within extended hypermedia. Accepted for publication in *Educational Technology Research and Development*, October, 2008.

Lieberman, A. S., Cromley, J., Charles, L., Rodriguez, O., Lopez-Marti, M., Das, S., & Moguillansky, D. (in press). Outcomes related to low literacy in low-income adolescents. Accepted for publication in *International Journal of Child and Adolescent Health*, June, 2008.

Azevedo, R., Moos, D. C., Greene, J. A., Winters, F. I., & Cromley, J. C. (2008). Why is externally-regulated learning more effective than self-regulated learning with hypermedia? *Educational Technology Research & Development, 56*(1), 45-72.

Cromley, J. G., & Azevedo, R. (2007). Testing and refining the direct and inferential mediation model of reading comprehension. *Journal of Educational Psychology, 99*(2), 311-325.

Cromley, J. G., & Azevedo, R. (2005). What do reading tutors do?: A naturalistic study of more- and less-experienced tutors in reading. *Discourse Processes, 40*(2), 83-113.

Budget

Principal Investigator Yasuko Kanno 25 % (FTE) academic year 0 % (FTE) summer		Academic Year $ 28828 Summer $ 0
Principal Investigator Jennifer Cromley 0 % (FTE) academic year 17 % (FTE) summer		Academic Year $ 0 Summer $ 4861
Graduate Assistant 0 % (FTE) academic year 0 % (FTE) summer	Academic Year $ 720 Summer $ 1620	
Total Salary and Wages		36029
Travel		
2010 AIR Forum (presentation at 2010 Forum required):		1800
Other research related travel:		1950
Other research expenses* (Software, books, copying fees, etc.)		140
Total Requested		39919

*Costs for publishing articles in journals are allowed. The purchase of computer hardware, printing a stand alone book, overhead or indirect costs, and living expenses are not allowable. If you have questions about specific expenditures please contact the AIR Project Manager.

Statement of Prior, Current, and Pending Funding

Neither author has any prior, current, and pending funding for the proposed research from any source, internal or external to Temple University. Neither author has ever received any funding from AIR.