



Though the empirical evidence base for international education learning outcomes is growing, it remains thin. One area of international education outcomes research that promises to lend accountability pertains to the impact of international education on college success and completion (Rubin, et al., 2014). [Note: references appear at the end of the proposal narrative; but to conserve space, only minimal citation from the scholarly literature is provided]. Accordingly, the proposed project will establish a national Consortium for Analysis of Student Success through International Education (CASSIE).

There is a crisis in college completion in the United States. At a time when our economy is most in need of a highly educated workforce, about 60% of students who initially enroll in college fail to graduate within 4 years and 40% fail to graduate within six. Certain minority and first in family college students are especially at risk of failing to complete college.

Financial distress is one common reason why students fail to persist. Additional out of pocket costs and loss of opportunity to work part time are often cited as reasons why low SES students select out of education abroad. Perceived low financial return on investment, particularly in an age of high student debt, may be a big disincentive for many students to major in world languages or area studies. However little hard evidence is available to test these suppositions (cf., Whatley, 2017).

Lack of engagement in one's studies likewise puts students at risk of dropping out; conversely "high impact" activities like independent research or discussing issues with peers outside of class are associated with timely college completion. Education abroad is one high impact activity that leads to student engagement and hence is likely to increase chances of graduation. Interacting with individuals from cultures other than one's own is another such high impact experience that increases student engagement (Gonyea, 2008; Kuh, 1998). In addition to student engagement, another mechanism that may link international education to college success is the training in cognitive focusing that international education affords (Hadis, 2005).

Most—though not all—evidence collected to date warrants the conclusion that education abroad improves graduation rates, particularly for minority students and students who enter

college at an academic disadvantage (Redden, 2012; Rubin et al., 2014, Xu et al., 2014). While effects of an educational choice like education abroad are notoriously difficult to disentangle from student self selection biases, most of these studies did impose some sorts of statistical or sampling controls to mitigate that confounding factor. For example, the IRS funded Georgia Learning Outcomes of Students Studying Abroad Initiative (GLOSSARI; Sutton & Rubin, 2004) created a campus only comparison group that was matched with an education abroad group on a number of factors. The most important matching factor was persistence to the same semester that one group went off to education abroad, while the comparison group remained on campus.

GLOSSARI demonstrated the value of a “big data” approach to assessing the impact of international education. Employing that comparison group research design with a large sample of students (about 36,000 for the college completion analysis) from the University System

relatively few students each year. Therefore, this method of Title VI or similar evaluation is only possible by pooling data from programs on many different



2. A national database of sufficient depth will enable “deep dives” to **answer questions of practical importance**

### 3. Development of new knowledge

The databank and co laboratory concept is designed to develop new knowledge by leveraging its two foundations:

- A. The “big data” sample of learners from diverse institutions sustains not only highly generalizable findings at the aggregate level, but also “deep dive” interrogations involving relatively rare student subgroups (e.g., FLAS recipients).
- B. Multiple collaborators from diverse institutions each have a voice in designing analyses of mutual interest (e.g., the graduation rate of preprofessional students who education abroad compared to preprofessional students who do not). Institutional partners may also commission targeted studies of local/institutional interest (e.g., graduation GPA of world language majors at institution X, relative to world language majors in the aggregate sample, after controlling for confounding factors).

CASSIE will revisit certain questions in international education that have already been addressed, but will do so with greater authority than has been possible in the past, and with currency. The prime example pertains to education abroad and rate of timely college completion. But CASSIE will also address questions that were not previously answerable in a credible way. It will interrogate certain assumptions that have rarely been interrogated. For example, are students with lower GPAs really at greater risk if they are admitted to education abroad programs, or ~~are~~

college advisors? Do the (presumably) relatively few minority students who participate in FLAS graduate at a different rate than otherwise comparable minority students who do not receive FLAS funding?

Research regarding underserved demographic groups will be facilitated by including minority serving institutions, including HBCUs, in the CASSIE databank and co laboratory. The University System of Georgia itself houses three HBCUs. In 2016, about 27% of USG students were African American, 8% Hispanic, and 8.5% Asian. Among collaborating institutions will be additional minority serving institutions, such as Howard University (see letter of support in Appendix).

**B. How does student financial need interact with participation in international education in affecting college success?**

Student finances are presumed to be a major barrier for increasing participation in education abroad, particularly for low SES students. The barriers are imposed not only by additional costs incurred by study travel, but also by opportunity costs in lost wages from jobs, possible caregiver expenses, and by the presumed—but now study SES8/TT11aiT612(fA2D0.000541c5(1n2FD00dAFSA,765T6TD006Tj,009

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However implementing rigorous student learning outcomes assessment as part of that evaluation has proven elusive. The well conceived Evaluation of Exchange, Language, and International Area Studies (EELIAS) system funded at Maryland by IFLE recognizes that outcomes can only be judged in comparison to external data sources, and like CASSIE, EELIAS recognized the utility of “propensity score matching” statistical techniques. However, EELIAS adopts the institution as the unit of analysis rather than the student. EELIAS tracks the value added by Title VI to institutional *output* in international education (Brecht et al., 2007). But *output* is not the same as *outcome*, and certainly not the same as *learning* outcome. Procedures that use some form of oral proficiency interview to test increments in Title VI student language proficiency do contribute to learning outcomes assessment. The Institute for International Education’s (IIE) (2015) groundbreaking analysis of Boren Award winners’ language learning as a result of education abroad is a prime instance. However it remains rare for Title VI programs to use a recommended pretest/posttest comparison group quasi experimental design (Rubin & Tarrant, in press). Therefore it is impossible to infer the degree to which high absolute scores on an OPI are attributable to the Title VI program participation *per se* (Sutton, Miller & Rubin, 2007).

One recurring difficulty evaluating Title VI outcomes is that usually too few students pass through a program to allow inferential statistical analyses. Such might be the case with FLAS programs on individual campuses, which might host an annual cohort of 12-15, only some of whom are undergraduates. In other instances, it is hard to accurately count the number of students “touched” by a National Resource Center or a UISFL grant. CASSIE will directly address those challenges by (a) aggregating data from Title VI programs across several campuses to increase sample size, and (b) creating protocols for campus international education offices to identify students who participated in Title VI sponsored classes or other formal instructional experiences.

In the fall of 2013, CASSIE Co investigator Don Rubin was invited by IFLE leadership to speak with Title VI directors about learning outcomes assessment. In his talk, he demonstrated the compelling evidence for education abroad effects on college completion arising from GLOSSARI. But Rubin’s presentation at that time failed to connect the \_\_\_\_\_ on college \_\_\_\_\_ **accu54ize**,



Connor Linton & Paige, 2009). Excepting that literature pertaining to additional language learning, probably the greatest share of research in international education learning outcomes pertains to the development of a constellation of related attitudes, values and beliefs variously called cultural sensitivity (Vande Berg & Paige, 2012) or cultural competence (Deardorff, 2009) or global citizenship (Tarrant, Rubin & Stoner, 2014).

Literature on the impact of international education on college success is scarcer. While some institutions claimed positive effects of education abroad on graduation rate, much of that work simply compared raw frequencies of members of an entering cohort who had studied abroad with those who did not. The problem with this simple approach is that all members of the education abroad group will have persisted to sophomore or junior or senior year when they embarked on their trip. However, the non education abroad group would have experienced considerable attrition before the "target semester." The education abroad group will show an advantage simply because they are sampled later in their college careers. What is needed, then, is a comparison group that evinces the same survival as the education abroad group. For example, for every student who studies abroad during the second semester of her second year, we must identify a second semester junior who did not education abroad at all during her college career. Because of the rigor of the sampling needed for this approach, it is more likely to be undertaken institution wide rather than by theysurvivalabroad @abroad4 then, theitthe sampling

program participants. The hypotheses and research questions are explored with respect to six indices of college success (e.g. college completion in 6 years; the full list appears in the following

X. Research Question: Is majoring or minoring in a world language at graduation a stronger predictor of indices of college success (la lf, above) for minority students than for their nonminority peers?

XI. Research Question: Does majoring or minoring in a world language at graduation exert a different impact on indices of college success (la lf, above) for students who receive need based financial aid at any point in their college careers as compared with their peers who do not?

XII. Research Question: Does minoring in a world language at graduation exert a different impact on indices of college success (la lf, above) for students who major at graduation in highly sequenced STEM or preprofessional degree programs, relative to their peers who minor in different subjects?

XIII. Research Question: Employing the CASSIE method described in (I) above, does participating in a exert a different

**Building (and Sustaining) the Collaborative.** Since this project is designed to be an inter institutional collaborative, early and on going activity will raise awareness about the value of the national databank and recruiting partner institutions to the co laboratory. Although the 28 University System of Georgia institutions plus at least 4 other diverse institutions (Howard University, University of Texas Austin, University of Delaware, and California State University at Dominguez Hills; see letters of support in the Appendix) are already committed, Institute for International Education (IIE) co investigators will spend much of Year 1 helping to build the collaborative into a truly national network. It will do so by leveraging its already extensive network of campus contacts associated with *Open Doors* reporting and Generation Education abroad institutions. An advisory panel of staff from selected partner campuses will provide campus based perspectives on CASSIE priorities and progress.

Institutional capacity building for learning outcomes assessment will be another important component of building the collaborative. CASSIE will prepare a guide to collaboration between institutional research and international education. IIE staff will also facilitate IE/IR telemeetings for campuses that request such services. In addition, CASSIE will make presentations aimed at capacity building at international education conferences, including IFLE sponsored meetings for Title VI or similar directors. IIE will generously provide registration scholarships for up to 10 partner institution staffs at its March, 2018 Best Practices Conference.

A long term goal for building the collaborative is to plant the seeds for a sustainable collaborative to periodically update the national databank and allow for open access following the end of IRS support in 2020. IIE staff will be mindful of that sustainability goal as they interact with partner institutions.

### **Building the databank.**

Assembling a multi institutional databank is logistically complex. It involves elements of data security, data transfer, and data management. Fortunately, IIE partners in CASSIE can draw upon their experience assembling the *Open Doors* report. USG partners can draw upon their experience in compiling the GLOSSARI database, which included about 31,000 education abroad students and 18,000 who studied only on campus. In addition, CASSIE draws upon the tools and expertise of the Western Interstate Commission on Higher Education, which has devised the state of the art Multistate Longitudinal Data Exchange System (see Appendix for letter of support from WICHE).

The data collection protocol for building the national databank will no doubt vary across campuses. For example, a campus that already uses course suffixes to designate classes taught abroad will have an easier time of sampling students. Among the 28 University System of Georgia campuses, International Education offices will be able to coordinate directly with the USG Office of Research and Policy Analysis to enable sampling. At many other campuses, however, offices of International Education and of Institutional Research will be working together (sometimes for the first time). Directors of Title VI or similar projects over the last 7

years will need to provide rosters to identify undergraduates who received FLAS funding or who participated in classes or extended activities arising from Title VI or similar projects.

Keeping in mind that the sampling procedures will be unique to each campus, the ideal procedures would include the following steps:

- I. Pull records for all first time, full time, first semester students matriculating in fall of 2010 and 2011.
- II. Identify three (highly overlapping) groupings of students: (a) those who have studied abroad, (b) those who have taken an advanced world languages class, and (c) those who participated in Title VI or similar programs (FLAS or other). Identify also the "target semester" in which they had that experience. In many cases this will require cross walking rosters held at offices of International Education and by Title VI or similar project directors with student lists generated by Institutional Research offices.
- III. Draw comparison group samples for each of the three (overlapping) groups above by identifying students who new Internat groups

- V. Using protocols developed with the assistance of WICHE's Longitudinal Multistate Data Exchange System (see WICHE letter in Appendix) and procedures already in place for data feeds from USG constituent campuses, securely transmit campus data to USG data warehouse.

**Analyzing the Data.**

Once the databank is compiled and cleaned, for certain analyses (e.g., comparing world language majors and minors with students majoring in other subjects) the comparison group sample will be further refined by employing a statistical procedure known as "propensity score matching." PSM will use variables such as SAT scores and gender to increase comparability of groups on all dimensions except the one of focal interest (e.g., academic major).

For most analyses the primary statistical tool will be Ordinary Least Squares regression (or logistic regression for dichotomous outcomes like +/- 4 year graduation). The dependent or criterion variables will be the six indices of academic success noted in hypothesis I in the preceding section of this proposal. We will also attempt some hierarchical linear regression models that "nest" students in their respective institutions. The HLR models may prove a better fit in that they will be able to account for both student and institution level independent

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During Year 3, mini grants will be offered to up to 8 institutions for focused studies of local or institutional interest. During Year 3 CASSIE will develop a benchmarking system to aid institutions in evaluating their college success impact. Consistent with this campus directed data analysis, CASSIE will develop data visualization tools to help campuses and the international education community at large present its evidence more effectively to various stakeholders. Organizationally, Year3 will work toward sustainability of CASSIE, anticipating the termination of federal funding.

It is not unrealistic to project that at least 40 institutions will partner and contribute data to CASSIE. See letters of support in the Appendix for the 28 institution University System of Georgia, Howard University, University of Delaware, University of Texas Austin, and California State University at Dominguez Hills. These 40 institutions will be diverse in terms of geographic region, mission, private and public sectors, and demographics. Among the partners will be sites for a good many Title VI or similar projects as well as institutions which are among the top senders of students to education abroad.

The research methodology to be employed in CASSIE builds upon and refines the big data methods pioneered by the IRS funded GLOSSARI and adopted in subsequent studies at University of Texas, San Diego State University, Old Dominion University, and the IRS funded California Community College SOAR project (e.g., Redden, 2012, Rubin et al., 2014, Xu, et al., 2012). A signature feature of this research methodology is careful sampling of comparison groups that are matched with the international education groups in that the groups have equal probability of surviving to the same “target” semester.

One way in which CASSIE expands upon GLOSSARI is by examining three modes of international education instead of just education abroad. In addition to investigating the impact of (1) education abroad, CASSIE also addresses the impact of (2) advanced world language study on college success. Further, it extrapolates the model to (3) Title VI or similar programming. It promises to assess the relative impact of 5 student directed Title VI or similar programs (FLAS, LRC, NRC, USIFL and CIBE) on college success.

The six indices of college success that will serve as dependent or criterion variables for the analyses were enumerated in a preceding section of this proposal stating the main research questions and hypotheses. Those indices reflect efficient course taking, timely degree completion, and achievement in class (the latter captured by GPA).

The preceding section of this proposal detailing research procedures offers a comprehensive list of the independent or predictor variables that will be compiled. These predictors include the main independent or “treatment” variables of interest, that is, participation in education abroad, advanced world language study, and Title VI or similar programming. Predictors also

include demographic and precursor determinants of college success such as gender and SAT score. By



to this list to promote the consortium and recruit consortium partners. In Years Two and Three, IIE will

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CASSIE national partner, IIE, is uniquely equipped to interface with diverse institutions and their international education programs nationwide. IIE has extensive experience collecting data from nearly all US institutions for its annual *Open Doors* report about international education participation rates. Its *Generation Study Abroad* project has enrolled over 700 institutions in an unprecedented capacity building and advocacy initiative. It is anticipated that a



in report; all 3 international education experiences included in report; 6 sample parameters included in report; report disseminated to 100% of participating institutions (as well as via CASSIE webpage).

**Outcome Indicator:** Reporting descriptive statistics for aggregated Title VI or similar programs to Title VI or similar directors' network. **Benchmarks:** report aggregates data for 20 Title VI or similar programs; all 6 outcomes included in report; disseminated electronically to IFLE plus 80% of Title VI or similar Part A and CIBE directors.

**Outcome Indicator:** Number of hypotheses and research questions tested with rigorous, appropriate statistical methods. **Benchmark:** 12 of 16.

**Process Indicator:** Advisory committee participation. **Benchmarks:** 66% of collaborating institutions participating in web based meeting.

**Process Indicator:** Number of collaborating institutions proposing Year 3 mini research projects. **Benchmark:** Requests from 25% of collaborating institutions.

**Process Indicator:** Develop prototype for institutional benchmarking tool based on project outcomes. **Benchmark:** prototype approved by 75% of advisory committee members.

**Outcome Indicator:**

**Process Indicator:** Satisfaction scores on a survey of collaborating institutions. (Sample item: Participating in CASSIE has improved coordination between International Education and Institutional Research on my campus.) **Benchmark:** Average score on items querying collaborating institutions about their approval of CASSIE achievements focusing especially on capacity building activities will be 4 on scales where maximum score is 5.

**Outcome Indicator:** Number of collaborating institutions and other stakeholders endorsing a sustainability plan. **Benchmarks:** 50% of collaborating institutions endorsing sustainability plan and committing to submit additional years of data; 10 additional institutions endorsing sustainability plan; 2 national organizations endorsing sustainability plan and committing to assist in locating resources.

**Outcome Indicator:** Visualization tool on website allows filtering of graphic results by outcome measure and by sample parameter. **Benchmark:** Visited online 50 times/month.

**Outcome Indicator:** Conference presentations. **Benchmark:** Presentations reporting CASSIE findings delivered at 3 international education or higher education conferences.

**Outcome indicator:** Scholarly manuscripts prepared and submitted for publication. **Benchmarks:** 1 practical manuscript for international educators and administrators; 1 manuscript focusing on outcomes for Title VI or similar participants; 1 manuscript for higher education journal. [Note: it is anticipated that even the two years of data collected and analyzed by DCREICS under IRS funding will sustain considerably more manuscript publications beyond Year 3.]

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