

# The Students who Study Abroad and the Benefits They See

## Institutional Research and Decision Support (IRDS)

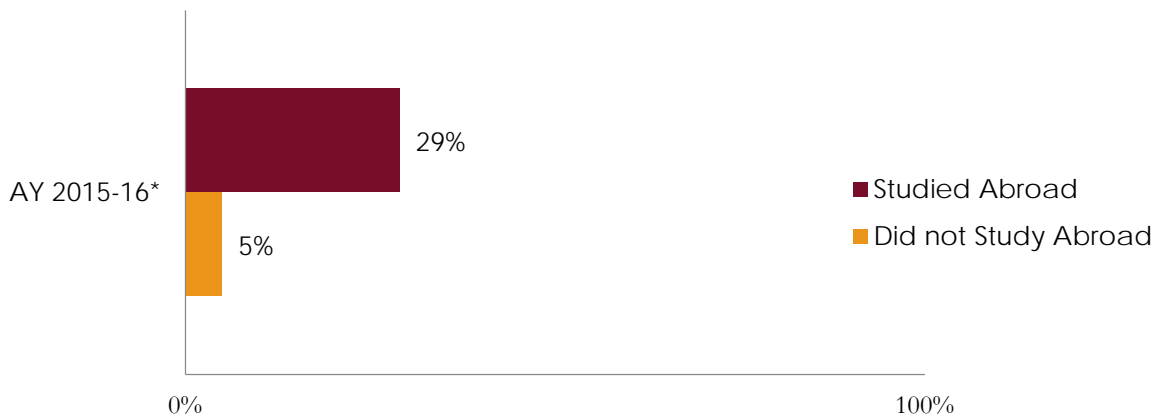


More than 200 IUPUI undergraduate students participate in a Study Abroad program every year. However, there has not yet been an investigation of the characteristics of study abroad participants or the effects of participating in Study Abroad. This Research Brief provides a more comprehensive look at the IUPUI Study Abroad program.

### Differences between Participants and Non-Participants

The biggest difference between Study Abroad participants and non-participants was enrollment in Honors College. In 2015-16, 29% of undergraduate students who participated in Study Abroad were enrolled in an Honor's College plan compared to 4% of undergraduates who did not participate.

Figure 1  
Percentage of Study Abroad Participants and Non-Participants Who Were Enrolled in Honor's College by Year



\* Differences between study abroad participants and non-participants significantly different at  $\alpha \leq 0.05$

Perhaps not surprisingly, participants in Study Abroad also had a higher mean SAT score and a high mean high school GPA in AY 2015-16. This may be in part because Honors students were significantly more likely to study abroad than students who were not in the Honors College.

**Table 2**  
**Academic Preparation of Study Abroad Participants and Non-Participants.**

	Academic Year 2015-16 <sup>c</sup>	
	Participants	Non-Participants
Best SAT Score *	1126	1030
High School GPA *	3.51	3.28

<sup>c</sup> 356 undergraduate students most recent study abroad, experience was in 2015-16.

\* All differences statistically significant for all years at  $\alpha \leq 0.05$ .

Undergraduates who studied abroad differed from those who did not study abroad in a number of other important ways. In 2015-16, study abroad participants were also more likely to be directly admitted to their school of choice, and were more likely to be attending full-time during the year of their study abroad experience. Participants were also significantly less likely to come to IUPUI as an external transfer student and were significantly less likely to have any unmet financial need. See Appendix A for further differences by race, gender, and age.

**Table 3**  
**Demographic Comparisons of 2015-16 Undergraduate Study Abroad Participants and Non-Participants**

Demographic	Academic Year 2015-16 <sup>a</sup>	
	Participants	Non-Participants
Financial Need <sup>b</sup> <sup>1</sup>	58%	70%
Received a Pell Grant	36%	40%
First Generation <sup>1</sup>	25%	33%
Attended Full-Time in Fall Semester <sup>1</sup>	91%	80%
Direct Admit <sup>1</sup>	53%	39%
Admitted as an External Transfer <sup>1</sup>	23%	32%
Living in Campus Housing	11%	10%

<sup>a</sup> 356 undergraduate students most recent study abroad experience was in 2015-16.

<sup>b</sup> Had more than \$1 in unmet financial need after accounting for the entire academic year after accounting for all federal and institutional aid. Students who did not file a FAFSA form are excluded.

<sup>1</sup> Differences between study abroad participants and non-participants in AY 2015-16 significantly different at  $\alpha \leq 0.05$

The Herron School of Art and Design had 31 students who studied abroad in 2015-16, more than 4% of their entire undergraduate student population. Other schools with a large percentage of students studying abroad included the Lilly School of Philanthropy, Fairbanks School of Public Health, Kelley School of Business, and the School of Liberal Arts (See Appendix B).

Beginning in 2013, a new Entering Student Survey (ESS) asked new students the chances that they would “participate in study abroad or international travel related to school.” At least 21% of new beginners in every year indicated there was a “very good chance” they would participate in study abroad.

**Table 4**  
**Entering Student Survey Study Abroad Intentions<sup>1</sup>**

Cohort Year	N	Mean <sup>2</sup>	Standard Deviation	No Chance	Percentages		
					Very Little Chance	Some Chance	Very Good Chance
2013	1,634	2.60	0.99	15.1%	31.5%	31.7%	21.8%
2014	2,499	2.67	1.02	15.9%	26.7%	32.2%	25.3%
2015	2,314	2.60	1.00	15.3%	31.2%	31.2%	22.3%
2016	1,581	2.67	1.04	16.6%	26.3%	31.3%	25.9%

<sup>1</sup> Item: “What is your best guess as to the chances you will: Participate in study abroad or international travel related to school.”

<sup>2</sup> Scale: 1 = “No chance”, 2 = “Very little chance”, 3 = “Some chance”, 4 = “Very good chance”.

## Participation in Study Abroad

University Planning, Institutional Research, and Accountability (2009) conducted a comprehensive analysis of both students’ plans to study abroad as well as their study abroad participation. Similar variables were used to determine which factors increased students’ probability of studying abroad during their college career.

Table 4 displays how certain significant characteristics affect the odds that retained students from the 2009, 2010, 2011, and 2012 beginning student cohort would study abroad. In all three years, students were significantly more likely to participate in study abroad during their college career if they were a direct admit to their school or if the Fall GPA was higher than average (2.73). Honors students and students with no unmet financial need were also more likely to study abroad. Gender, race/ethnicity, and variables related to enrollment and first generation status did not have a significant effect in these models. The full model for each cohort can be found in appendix C.

**Table 5**  
**Changes in Probability of Studying Abroad for 2009, 2010, 2011 and 2012**  
**Beginner Cohorts<sup>1</sup>**

Variable	Probabilities
Has Unmet Need <sup>2</sup>	0.09%
No Unmet Need <sup>2</sup>	0.15%
Direct Admit <sup>3</sup>	0.42%
UCOL Admit <sup>3</sup>	0.09%
Honors College <sup>4</sup>	0.21%
Not in Honors College <sup>4</sup>	0.09%
Fall GPA 2.0 <sup>5</sup>	0.04%
Fall GPA 3.0 <sup>5</sup>	0.12%
Fall GPA 4.0 <sup>5</sup>	0.34%

<sup>1</sup> Includes only domestic, Bachelor's degree-seeking undergraduates who began at IUPUI and were retained to their second year. In all probability calculations, gender, ethnicity, Indiana residency, enrollment intensity (full-time) and first generation status are held constant.

<sup>2</sup> Probabilities assume student is not in Honors, UCOL admit, and has an average GPA in their first Fall (2.73).

<sup>3</sup> Probabilities assume student is not in Honors, has unmet need, and has an average GPA in their first Fall (2.73).

<sup>4</sup> Probabilities assume UCOL admit, has unmet need, and average first Fall GPA (2.73).

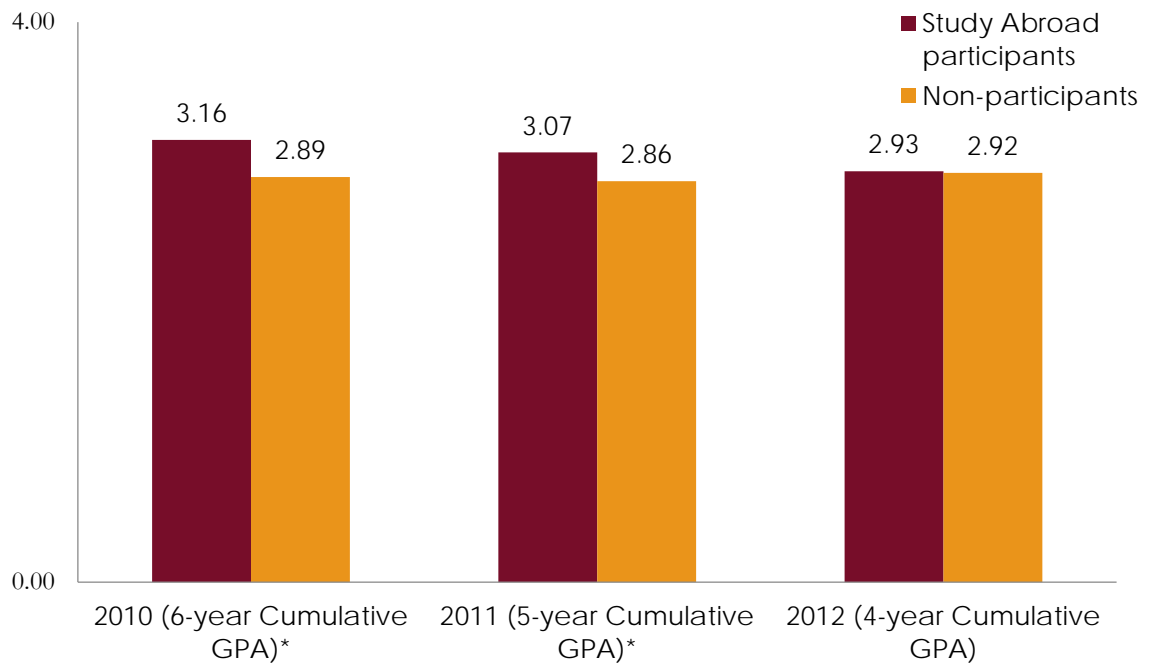
<sup>5</sup> Effect of GPA is continuous, so probability will change at each level of GPA. Assume student is not in Honors, UCOL admit, and has unmet financial need. Probability that a student who is directly admitted, enrolled in Honors, with no unmet need and 4.00 first Fall GPA would study abroad was 5.95%

Being directly admitted to a school or enrolled in Honors College were also significantly related to beginning students' intentions to study abroad. Students were also significantly more likely to indicate they were interested in study abroad if they were female, African American, or Latino/a. Having a greater high school GPA actually had a negative effect on intentions to study abroad when accounting for the other independent variables. The full model can be found in appendix d.

## Effects of Study Abroad

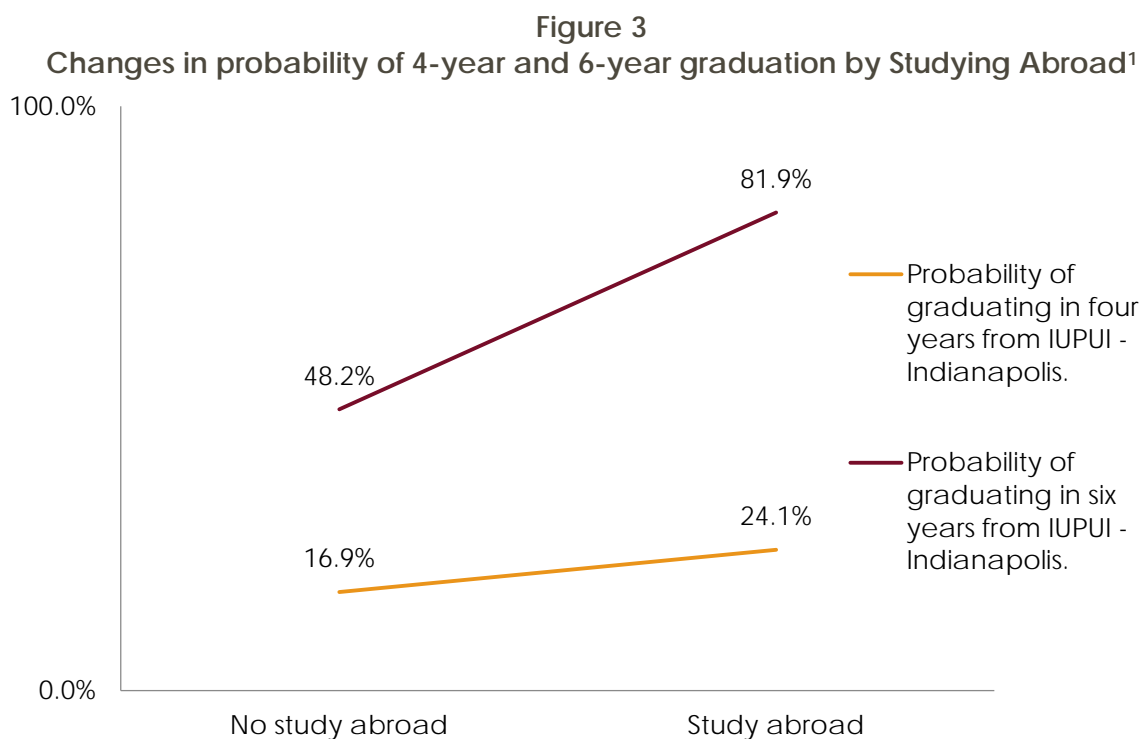
Study Abroad was found to have a positive effect on a number of outcomes. For example, for students in the 2010 cohort, study abroad was found to have a significant effect on cumulative GPA ( $F(1, 1426) = 8.43, \alpha \leq 0.05$ ) even net the effect of multiple additional predictors (Gender, race African American, race Latino/a, number of days enrolled before census, having unmet financial need, full-time enrollment, first generation status, direct admit status, and Fall GPA). Similar results were obtained with the Fall 2011 cohort ( $F(1, 1,482) = 5.54, \alpha \leq 0.05$ ). However, there was basically no difference in 4-year cumulative GPA between students who studied abroad and those who did not. Adjusted means can be seen in Figure 2 below. The full model of results can be seen in appendix E.

**Figure 2**  
**Adjusted Mean GPAs of Study Abroad Participants and Non-Participants<sup>1</sup>**



<sup>1</sup> GPA adjusted to control for gender, ethnicity (African American or Latino/a) days enrolled before census, Unmet financial need (had unmet need = 1, no unmet need = 0), full-time enrollment, first generation status, direct admit status, and first fall GPA. Only students who were retained through the first year were included.

Studying abroad also significantly increased students' probability of graduating in four or six years, even controlling for gender, ethnicity, days enrolled before census, receipt of a Pell grant, full-time enrollment, first generation status, direct admission to their school, and GPA in the first fall semester. A student who began at IUPUI as a first-time student between 2007 and 2010 had a 48.2% probability of graduating in six years if they did not study abroad, and an 81.9% probability of graduating in six years if they did, even when accounting for other factors associated with degree completion. The full model of results for both four and six year graduation rates can be seen in appendix F.

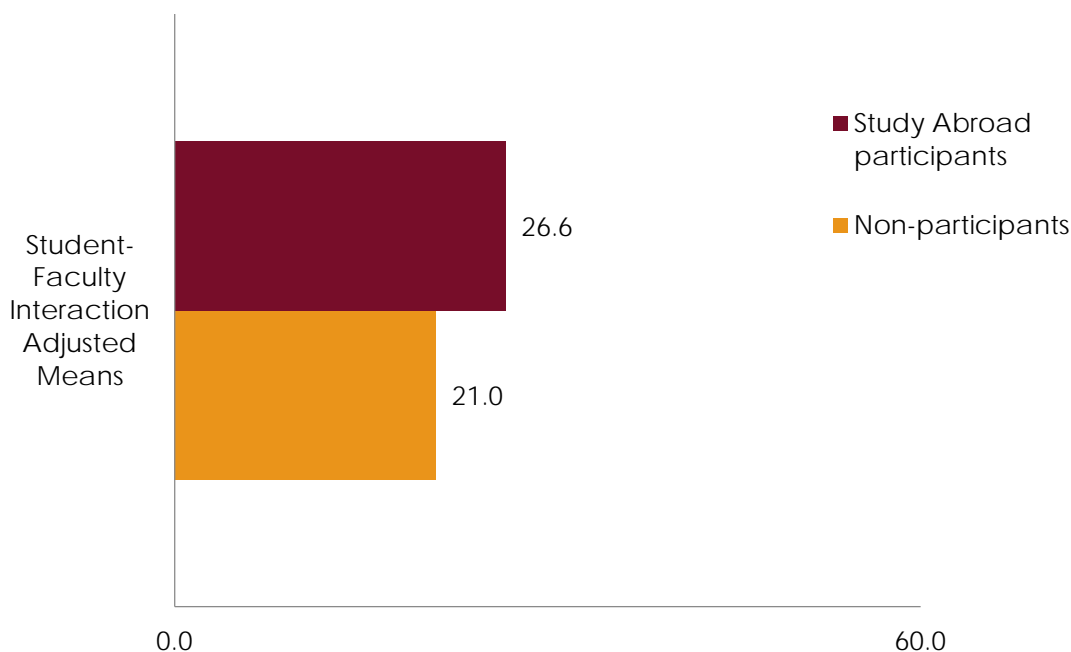


<sup>1</sup> Gender, Race/ethnicity, days enrolled before census, receipt of a Pell grant, enrollment intensity (full-time), first generation status, direct admit status, and fall GPA held constant through probability calculations. Changes in these factors may affect probability.

## NSSE Results

In Spring 2015, IUPUI first-year and senior students were asked to participate in the National Survey of Student Engagement (NSSE). NSSE includes several scales, known as Engagement Indicators, which are designed to provide insight into specific ways in which students interact with their university (National Survey of Student Engagement, 2017). Senior students who studied abroad and completed the NSSE survey were compared to senior respondents who did not study abroad on each of the 10 Engagement Indicators. Students who participated in study abroad and those that did not participate were statistically similar on nine of the Engagement Indicators after controlling for the effects of major. However, seniors who studied abroad did report higher levels of interaction with faculty than seniors who did not study abroad. Adjusted means can be seen in Figure 4 below. The full model of results can be seen in appendix G.

**Figure 4**  
**Adjusted Mean Scale Scores of Study Abroad Participants and Non-Participants of Student-Faculty Interaction Engagement Indicator<sup>1</sup>**



<sup>1</sup> Student-Faculty interaction scaled score adjusted to control for programs with the largest percentage of NSSE respondents who studied abroad. These would include the Herron School of Art and Design (14.6% of respondents studied abroad), Kelley School of Business (7.2%), the School of Public and Environmental Affairs (18.4%), and the School of Liberal Arts (11.9%). See Appendix G for further information about this scale.

## Conclusion

Studying abroad appears to have a modest positive effect both on students GPA as well as their probability of graduation within six years. Seniors who study abroad also report greater engagement with faculty than students who do not. However, the students most likely to study abroad are students who are already likely to succeed at IUPUI. Honors College students, students directly admitted to their program, and students who earn a high GPA in their first fall semester are most likely to take advantage of the opportunity. However, a wide variety of students, including African-American and Latino/a students, are likely to express interest in study abroad. Likewise, students with unmet financial need and transfer students are significantly less likely to study abroad, suggesting that many students may not be able to take advantage of the opportunity. Students who study abroad seem to benefit from the experience, but more should be done to make the experience available for a wider variety of students.

## Appendix A

### Additional Demographic Comparisons of 2015-16 Undergraduate Study Abroad Participants and Non-Participants

Demographic	Academic Year 2015-16 <sup>c</sup>	
	Participants	Non-Participants
Attended Indianapolis Campus	99%	93%
Female <sup>1</sup>	75%	55%
African American	8%	10%
Latino/a	8%	6%
Two or More Races	4%	4%
25 Years of Age or Older	12%	22%

<sup>a</sup> 356 undergraduate students most recent study abroad experience was in 2015-16. Of those who participated, the most recent study abroad experience was a short program for 326 students and a long program for 32 students.

<sup>1</sup> Differences between study abroad participants and non-participants in AY 2015-16 significantly different at  $\alpha \leq 0.05$



## Appendix B

### Undergraduate Study Abroad Participation by School

School	Academic Year 2015-16 <sup>a</sup>	
	Total Students	Study Abroad Participants
Lilly School of Philanthropy	54	3 5.6%
Herron School of Art and Design	710	31 4.4%
Fairbanks School of Public Health	250	9 3.6%
Kelley School of Business	2,245	68 3.0%
School of Liberal Arts	2,137	62 2.9%
School of Public and Environmental Affairs	815	19 2.3%
Purdue School of Science	3,113	62 2.0%
School of Physical Education and Tourism Management	1,285	24 1.9%
School of Social Work	397	6 1.5%
School of Nursing	1,531	19 1.2%
School of Health and Rehabilitation Sciences	371	4 1.1%
School of Informatics	623	6 1.0%
University College	579	6 1.0%
School of Medicine	487	4 0.8%
Purdue School of Engineering and Technology	2,852	24 0.8%
School of Education	875	5 0.6%
School of Dentistry	70	0 0.0%

<sup>a</sup> 356 undergraduate students most recent study abroad, experience was in 2015-16. Of those who participated, the most recent study abroad experience was a short program for 326 students and a long program for 32 students.

## Appendix C

### Results of Logistic Regression on Study Abroad Participation for 2009, 2010, 2011, and 2012 Beginning Student Cohorts

Parameter	B <sup>1</sup>	Std. Error	Odds Ratio
Female	0.13	0.22	1.14
American Indian/ Alaska Native	4.10	23.43	23.21
Asian	0.66	23.40	0.74
African American	1.28	23.40	1.38
Latino/a	1.88	23.40	2.50
Native Hawaiian/ Pacific Islander	-4.68	161.90	<0.01
Two or More Races	1.17	23.40	1.23
Ethnicity Unknown	-5.36	33.91	<0.01
Indiana Resident	0.09	0.53	1.10
Had Unmet Need*	-0.52	0.23	0.60
First Generation	-0.20	0.25	0.82
Direct Admit *	1.55	0.28	4.70
Enrolled in Honors College*	0.87	0.26	2.38
Fall GPA standardized* <sup>2</sup>	1.08	0.26	2.96
Intercept <sup>3</sup>	-6.73	23.41	

Chi-Square= 141.07, model was statistically significant at  $\alpha \leq 0.05$ .; Nagelkerke  $R^2 = 0.16$

\* Effect was statistically significant at  $\alpha \leq 0.05$  net the effect of the other independent variables.

<sup>1</sup> Regression coefficient for this variable. Used in calculating expected odds of studying abroad.

<sup>2</sup> In order to aid in interpretation, GPA was standardized around the mean Fall GPA (2.73) and standard deviation (1.04) for IUPUI beginners who began prior to 2013. Therefore, the odds of studying abroad would be 2.96 times greater for a student who earned a 3.77 in their first fall semester than it would be for a student who earned a 2.73.

<sup>3</sup> Intercept also refers to the constant in a regression equation. This value represents the log of the odds that a student with none of the characteristics listed in the model would study abroad. In other words, a student with none of the characteristics listed and an average GPA in their first fall would have about 1 in 1,201 odds that they would study abroad

## Appendix D

### Results of Ordinary Least Square Regression on Intent to Study Abroad from Beginners participating in the 2013-2016 Entering Student Survey<sup>12</sup>

Parameter	B <sup>3</sup>	Std. Error
Intercept <sup>4</sup>	2.24	0.09
Female*	0.36	0.03
African American*	0.17	0.05
Latino/a*	0.32	0.05
Indiana Resident	0.07	0.09
Had Unmet Need	-0.03	0.03
Enrolled part-time*	-0.20	0.09
First Generation	-0.05	0.03
Direct Admit *	0.12	0.03
Enrolled in Honors College*	0.68	0.07
High School GPA standardized* <sup>5</sup>	-0.04	0.01

F=41.9, model was statistically significant at  $\alpha \leq 0.05$ .  $R^2 = 0.06$

\* Effect was statistically significant at  $\alpha \leq 0.05$  net the effect of the other independent variables.

<sup>1</sup> Item: "What is your best guess as to the chances you will: Participate in study abroad or international travel related to school."

<sup>2</sup> Scale: 1 = "No chance", 2 = "Very little chance", 3 = "Some chance", 4 = "Very good chance".

<sup>3</sup> Unstandardized regression coefficient for these variables, used to determine the degree to which a predicted score may change with a one unit change in the variable.

<sup>4</sup> Represent the predicted score for a student with none of the characteristics represented in the independent variables. In other words, a student who is male, not African American, not Latino, enrolled full-time, not a direct admit, not enrolled in Honor's College, with an average high school GPA would be expected to indicate that they have either "very little chance" or "some chance" that they would study abroad.

<sup>5</sup> In order to aid in interpretation, High School GPA was standardized around the mean High School GPA (3.46) and standard deviation (0.39) for IUPUI beginners who began since 2007.

## Appendix E

### Results of Analysis of Covariance for Effect of Study Abroad on Cumulative GPA

Variable	df	2010 <sup>1</sup>		2011 <sup>2</sup>		2012 <sup>3</sup>	
		Sum of Squares	F	Sum of Squares	F	Sum of Squares	F
<b>Study Abroad</b> <sup>ab</sup>	1	<b>2.25</b>	<b>8.43</b>	<b>1.40</b>	<b>5.54</b>	<b>&lt;0.01</b>	<b>&lt;0.01</b>
Covariates							
Female <sup>ac</sup>	1	5.39	20.19	0.17	0.68	5.68	21.97
African American <sup>abc</sup>	1	7.55	28.26	5.04	19.98	1.47	5.69
Latino/a	1	0.02	0.06	0.30	1.21	0.73	2.84
Days Registered before census standardized <sup>4 abc</sup>	1	2.84	10.63	1.57	6.24	3.55	13.76
Had unmet financial need <sup>abc</sup>	1	1.13	4.24	1.03	4.10	1.84	7.13
Enrolled full-time <sup>b</sup>	1	0.15	0.56	1.36	5.41	0.69	2.69
First-generation status <sup>a</sup>	1	2.16	8.08	0.47	1.87	<0.01	0.01
Direct Admit <sup>abc</sup>	1	6.07	22.73	8.35	33.12	4.33	16.77
First Fall GPA standardized <sup>5 abc</sup>	1	223.60	837.45	261.59	1,037.72	297.58	1,152.09

<sup>a</sup> Statistically significant effect for this covariate on 6-year cumulative GPA (2010 cohort) net the effect of the other covariates ( $\alpha \leq 0.05$ ).

<sup>b</sup> Statistically significant effect for this covariate on 5-year cumulative GPA (2011 cohort) net the effect of the other covariates ( $\alpha \leq 0.05$ ).

<sup>c</sup> Statistically significant effect for this covariate on 4-year cumulative GPA (2012 cohort) net the effect of the other covariates ( $\alpha \leq 0.05$ ).

<sup>1</sup> For 2010 cohort, dependent variable was 6-year cumulative GPA. Only students who were retained through the first year were included.

<sup>2</sup> For 2011 cohort, dependent variable was 5-year cumulative GPA. Only students who were retained through the first year were included.

<sup>3</sup> For 2012 cohort, dependent variable was 4-year cumulative GPA. Only students who were retained through the first year were included.

<sup>4</sup> In order to aid in interpretation, days enrolled before census was standardized around the mean number of days enrolled before census (56.7 days) and standard deviation (24.8) for IUPUI beginners who began prior to 2013. The Sum of squares and F statistic reported here describe the effect of registering earlier than the average number of days before census.

<sup>5</sup> In order to aid in interpretation, GPA was standardized around the mean Fall GPA (2.73) and standard deviation (1.04) for IUPUI beginners who began prior to 2013. Therefore, the Sum of squares and F statistic reported here describe the effect of earning an above-average GPA in the first fall semester.

*Note: Bold typeface used to highlight study abroad results. Not an indication of significance.*

## Appendix F

### Results of Logistic Regression on 4-year and 6-year Graduation for Beginning Student Cohorts

Parameter	4-Year Graduation			6-Year Graduation		
	B <sup>1</sup>	Std. Error	Odds Ratio	B	Std. Error	Odds Ratio
<b>Study Abroad</b> <sup>ab</sup>	<b>0.44</b>	<b>0.20</b>	<b>1.56</b>	<b>1.58</b>	<b>0.42</b>	<b>4.86</b>
Female <sup>a</sup>	0.15	0.05	1.16	-0.05	0.06	0.96
American Indian/ Alaska Native	-0.30	0.78	0.98	0.94	0.61	0.34
Asian	-0.08	0.23	1.22	0.30	0.17	1.18
African American	-0.43	0.22	0.86	-0.02	0.15	0.86
Latino/a	-0.41	0.23	0.88	0.15	0.17	1.02
Native Hawaiian/ Pacific Islander <sup>4</sup>	2.06	1.19	10.38	--	--	--
Two or More Races <sup>4</sup>	-0.37	0.26	0.91	--	--	--
Ethnicity Unknown	-0.17	0.27	1.12	0.36	0.20	1.25
Days Registered before census standardized <sup>2 ab</sup>	0.30	0.03	1.35	0.20	0.03	1.22
Received Pell first fall	-0.09	0.06	0.92	-0.11	0.06	0.90
Enrolled full-time <sup>ab</sup>	1.74	0.21	5.68	0.86	0.13	2.36
First Generation <sup>ab</sup>	-0.29	0.05	0.75	-0.34	0.06	0.71
Direct Admit <sup>ab</sup>	0.75	0.05	2.13	0.48	0.06	1.62
Fall GPA standardized <sup>3 ab</sup>	1.46	0.05	4.31	1.04	0.05	2.84
Intercept <sup>5</sup>	-3.48	0.28		-0.88	0.18	

Four year graduation model: Chi-Square= 2110.89, model was statistically significant at  $\alpha \leq 0.05$ .; Nagelkerke  $R^2 = 0.28$

Six year graduation model: Chi-Square= 1120.08, model was statistically significant at  $\alpha \leq 0.05$ .; Nagelkerke  $R^2 = 0.22$

<sup>a</sup> Effect was statistically significant for four-year graduation rates at  $\alpha \leq 0.05$  net the effect of the other independent variables.

<sup>b</sup> Effect was statistically significant for six-year graduation rates at  $\alpha \leq 0.05$  net the effect of the other independent variables.

<sup>1</sup> Unstandardized regression coefficient for these variables, used to determine the degree to which a predicted score may change with a one unit change in the variable.

<sup>2</sup> In order to aid in interpretation, days enrolled before census was standardized around the mean number of days enrolled before census (56.7 days) and standard deviation (24.8) for IUPUI beginners who began prior to 2013. Therefore, the odds of graduating in four years would be 1.34 times greater for a student who registered 80 days before census than for a student who registered 56 days before census.

<sup>3</sup> In order to aid in interpretation, GPA was standardized around the mean Fall GPA (2.73) and standard deviation (1.04) for IUPUI beginners who began prior to 2013. Therefore, the odds of graduating in four years would be 4.03 times greater for a student who earned a 3.77 in their first fall semester than it would be for a student who earned a 2.73.

<sup>4</sup> Native Hawaiian/Pacific Islander and Two or more races not included in six year calculation, as these were not ethnic categories prior to 2010.

<sup>5</sup> Represent the predicted score for a student with none of the characteristics represented in the independent variables.

Note: Bold typeface used to highlight study abroad results. Not an indication of significance.

## Appendix G

### Results of Analysis of Covariance for Effect of Study Abroad on NSSE Student-Faculty Interaction Engagement Indicator <sup>1</sup>

Variable	df	2015 Seniors <sup>2</sup>	
		Sum of Squares	F
<b>Study Abroad *</b>	1	<b>2,155.59</b>	9.22
Covariates			
Enrolled in frequent study abroad programs * <sup>3</sup>	1	1561.40	6.68

\* Statistically significant effect for this covariate on Student Faculty Interaction net the effect of the other covariates ( $\alpha \leq 0.05$ ).

<sup>1</sup> Scale consists of four items on a four-point scale, where 1 = "Never", 2 = "Sometimes", 3 = "Often" and 4 = "Very Often". Item are rescaled to a 60-point scale when calculating indicator. The four items asked students to indicate how often during the past year they had: Talked about career plans with a faculty member; Worked with faculty on activities other than coursework; Discussed course topics, ideas, or concepts with a faculty member outside of class; Discussed your academic performance with a faculty member.

<sup>2</sup> IUPUI Indianapolis senior students who completed the 2015 National Survey of Student Engagement. A total of 960 seniors completed the NSSE survey. Of those, 84 respondents had studied abroad and 876 respondents had not.

<sup>3</sup> Programs with the largest percentage of NSSE respondents who studied abroad. These would include the Herron School of Art and Design (14.6% of respondents studied abroad), Kelley School of Business (7.2%), the School of Public and Environmental Affairs (18.4%), and the School of Liberal Arts (11.9%).

Note: Bold typeface used to highlight study abroad results. Not an indication of significance.

## References

National Survey of Student Engagement (2017). *Engagement Indicators*. Retrieved from [http://nsse.indiana.edu/html/engagement\\_indicators.cfm](http://nsse.indiana.edu/html/engagement_indicators.cfm).

University Planning, Institutional Research, and Accountability (2009, May). *Overseas Study at Indiana University Bloomington: Plans, Participation, and Outcomes*. Retrieved from the IUPUI Office of International Affairs.