



Transcript

Welcome:

Aileen: Hi everyone, on behalf of the U.S. Department of State's Bureau of Educational and Cultural Affairs and the Institute of International Education, we welcome you and we thank you for joining our Gilman Scholarship Program Web Symposium Series for the 2013-2014 academic year. My name is Aileen and I work with the Gilman Scholarship Program. Today's topic we'll be talking about connecting outreach and advising STEM (Science, Technology, Engineering & Math) majors for programs abroad.

Gilman Web Symposium Series:

A little bit more about the web symposium series. The web symposium series is brought to you by the Gilman Scholarship Program, and this is just a way for us to start relevant discussions about foreign policy topics in education abroad. So upcoming this year, we'll be having a webinar in January on Working Together = Working Abroad, which will focus on study abroad offices collaborating with career services offices to send students abroad. In February, we will have a webinar on studying abroad in Latin America and the Caribbean. If you're interested in contributing to these webinars or signing up for them, you can find the links on our website that will be available in the coming weeks. We really want to bring experts and leaders in the field and program alumni together to present on these pertinent topics in higher education. Recordings will be posted online later. If you want to listen to our previous web symposiums, we have them on our website at www.iie.org/gilman. If you go to the multimedia section under Web Symposium, you can find recordings of our previous webinars. One of the webinars focused on encouraging students with disabilities to study abroad, and another one gave more information on getting more students to intern abroad. So we definitely encourage you to check out the rest of our web symposium series.

Gilman International Scholarship:

A little bit more about the Gilman Scholarship Program. The scholarship's mission is to diversify the kinds of students who study and intern abroad and the regions where they go. We are really proud to say that over the past 12 years since the scholarship's inception, we've given out over 14,000 scholarships to deserving undergraduate students. The program targets students with high financial need, and these students are underrepresented in study abroad. To be eligible for the scholarship, students must be receiving the Federal Pell Grant. Specifically, the scholarship provides up to \$5,000 for students to study and intern abroad, and students studying critical need languages are eligible to receive up to \$8,000. A new initiative this year is an emphasis on credit bearing career-oriented internships abroad. This has always been an option for Gilman applicants, as long as students were receiving credit for internship or independent research abroad, they would have been eligible for a Gilman Scholarship. But now, this year, we have set aside 150 awards available specifically for students who are participating in credit-bearing internships abroad. So if you have any students that will be interning this year, we definitely encourage you to direct them our way. And you can view more on our website including informational webinars and videos.

Presenters:

A little bit more about the presenters, as I said before, my name is Aileen O'Donnell, I am an Assistant Manager with the Gilman International Scholarship Program and we work out of the IIE Houston Office. And I work with advisors and in campus relations as well as overseeing the outreach coordination of our Gilman Program alumni. And I'm very pleased to be joined by Helena Wilkins who is the coordinator for International Programs for all engineering majors at the University of Texas at Austin. Today she'll be sharing her insights on what she's learned about the field of engineering and successful initiatives that have increased the number of engineering majors to study abroad at UT. And although

Helena will be focusing primarily on engineering majors, her methods can also be applied to other STEM majors. Also joining us today is Emily Wiechers, who is an Outreach Coordinator with Cultural Vistas. Cultural Vistas has designed innovative programs for STEM majors and Emily will talk about the importance of these programs using their evaluation data and what they're doing to ensure quality programs. And this information should be beneficial for advisors and students on college campuses, especially for advisors that are working on smaller campuses and who can't really create these unique programs or don't have the time to dedicate to creating something new. They can work with these providers to give their students these opportunities to go abroad. And we are also joined by Gilman Scholarship Alumna, whose name is April Gillens, and she studied abroad as an engineering major in Ireland in 2008. She is now a doctoral candidate in environmental engineering at Clemson University, and she'll be sharing her student perspective and how her experience continues to impact her today in her academics as well as her career. And at the end of the presentation, we'll have time for questions and answers, and throughout the presentation, you'll be able to chat in the chat box any questions you might have and we'll answer those questions at the end.

STEM & IIE Open Doors Statistics:

So just a brief overview of Open Doors data, the red highlights are students that are studying STEM fields, so as you can see there are a lower number of students from the STEM fields that are going abroad in comparison to other majors such as social sciences, business, humanities. So, today, we are going to really focus on what these challenges are, which sometimes includes a dense STEM curriculum, faculty attitudes, other appealing opportunities, those types of things. Our panelists will discuss those.

STEM Student Resources for Study Abroad:

We also are going to have a virtual floor, so at this time I'd like to open it up, so if anybody knows of any great resources to share with colleagues and students for advising STEM majors, you can type in your recommendations into the chat box, and we'll share those with everyone at the end of the presentation.

Simple Strategies for Raising Participation & Diversity in Engineering Education Abroad:

And now we're going to move on to hear more from Helena, who plans to discuss what she's learned about engineers at UT (The University of Texas at Austin), the barriers for study abroad for engineers, and how she's helped handle these challenges by designing quality programs, conducting outreach with engineers, and going to where they already are to conduct this outreach. And so, although Helena will be focusing primarily on engineering majors, her methods can also be applied to other STEM Majors.

Helena Wilkins Versalovic:

Well thank you. My goal for this presentation is to empower study abroad advisors, be it inside a study abroad office, or inside a college office to approach working with STEM and especially engineering students with enthusiasm and an open mind. Most of us have a background in the social sciences or in the humanities, so sometimes the language of engineering and STEM can seem daunting. The curriculum integration and the diversification movement inside the study abroad field in the last few years has helped us get closer to STEM and at least begin to have a conversation about the differences and similarities of our target populations.

The good, the bad and the ugly:

Because I live in Texas and I grew up watching spaghetti westerns, I decided to summarize my findings in the phrase, "The good, the bad and the ugly." The good is amazingly good. Everything you learn working as a study abroad advisor will apply to working with engineering students. Your experience really counts. Engineering students, contrary to stereotypes, are very articulate and social on top of being outstanding planners. So your job is going to be easier. They write great essays, they are excellent in applying for scholarships, they budget really well. There are also great resources such as the Gilman Scholarship that have helped us fund STEM students and diversify the population of STEM students. There is also a lot of support from the federal government in terms of grants from the National Science Foundation. There's also a lot of corporate support on behalf of STEM students and especially engineering students, and many other scholarships that are particular to the colleges that you can use to support and promote your students.

So, what is the bad? Well you have to work a lot harder and smarter to counter react the perceived and real barriers. Because engineers do not hear a lot from their peers, because their peers haven't studied abroad in the numbers that they have in the college of liberal arts for example. Less than 5.5% of the undergraduates here in the engineering school have studied abroad. So you are really going to have to talk to the students and let them know about their opportunities.

Empowering Strategies:

To try to increase the numbers, I have come up with a couple empowering strategies that will help you design quality programs and also send a different kind of message to recruit students and have them come over to your office or understand the importance of study abroad.

So what can you do to add value to the programs? Ask what's important to engineering students, what's important to their faculty? And then match and surpass those opportunities. What is the message in the college about study abroad? What is being said? What is negative? What is positive? And what should be said about study abroad from your stand point? How can you communicate this to marketing and presentations? I worked a little bit with the communications team when I first took over. I hadn't really even realized the full potential of that collaboration, but it really helped me a lot to see how we could convey a message and make study abroad be seen in a positive light. And also, how do you connect with your students, who other students meet?

Who are the Engineers?:

In order to set the stage to start working on this, learn about your population. Who are the engineers? Well, roughly 8 out of 10 are males, and this is pretty obvious when you come into the college. Once I did a presentation and there wasn't a single woman in the audience. They are also above average students who like to solve problems with their science and math backgrounds. They're interested in cutting edge technology, research and innovation. They want to use it, they want to learn about it, they're eager. Depending on their major they may be interested in business practices, research, or entrepreneurship. Remember they are doing research and their goal is to use this technology so they want to commercialize it and a lot of them, especially engineers right now, would dream of having their own companies or in chemical engineering. A lot of them are risk and debt averse. And why is that? A lot of them get a lot of scholarships to be in the STEM field, so they're not used to getting loans like a lot of liberal arts students. They are also very very focused on graduating on time. They're very GPA conscious because actually, the career office, in working with our corporate interviewers, has let us know that there are GPA cut offs and they are very much aware of this because during orientation as freshmen they receive information about this.

What is the engineering world like?:

The other thing that I wanted to discuss is that the engineering world at large. When you're outside of it, you look at it and you think all engineers are the same, then you come in and you discover wow, there are sub-cultures and there are eight departments. And each one of them has a different personality. And then you look at the degree plans of the eight different degrees from chemical, aerospace, civil, architectural, etc. and you discover that they have very very few courses in common. And when courses are in common, they are also are tailored specifically for chemical engineers as opposed to biomedical engineers. And then of course it's very sequential, it's very densely packed for example, some of the majors only have two to four electives that students can take, that they can choose to take and sometimes the electives that are outside of engineering are already prescribed. They're not electives, they're degree requirements. For example, American History, American Government. They have very few social sciences and languages that are not required at all, for example at UT Austin.

So there is very little time, they are very, very busy people. And there is a tremendous push to graduate in four years. Engineers take more than the average four classes or five classes, they take usually five or more classes in order to graduate in four years. And a lot of those classes have laboratories. So that's very important to know. So, the students

are going to be thinking, "What is in it for me? Why should I study abroad?". They have so many opportunities here on campus and they want to evaluate them and prioritize them.

Address "Why" & not just "How":

So to give you an idea, less than 8% of the UT Austin study abroad population comes from engineering. And I think it's because they really have a tremendous crunch in terms of time. And they are evaluating opportunities and looking at the offerings and thinking "Is this for me? Is this a waste of my time? What am I going to learn about this? Should education abroad be a priority?". So I address the "Why", and not just the "How", because I don't want to be preaching to the converted. The students that want to study abroad are going to come to me. But I'm trying to get the others to understand why it's important to the Dean, why it's important to our government, and our entire world to have engineers involved and understanding the courses of globalization, other cultures, other values. So I start talking to them in freshmen orientation about the globalized century, also being the high-tech century and quoting, now they're into numbers, they're into facts. Facts, so I did a lot of research. For example, Newsweek reported that engineering is the most common background of all the CEOs in the top 1,000 companies. I was surprised to find that out. I knew that it was the case in Europe, but I didn't know that it was also the case in the U.S., this always catches the attention of students.

And then engineering has also become what they call the new liberal arts degree, a lot of engineers are going into banking, finance, so the engineering degree is extremely valued.

What do UT Engineers value?:

But what do UT engineers value? What are they looking for in the opportunities outside of the degree requirements? So great teachers and cutting edge topics. They want to be cutting edge, they want to be the best, because these are really bright students. A lot of my peer advisors have 800 on their math course for the SAT for example. They also want hands-on experience because for the first couple of years they have a lot of theoretical large courses. They want to be engaged with their possible career opportunities and path. They want to explore, there's so much to do in engineering, and also there's a high value placed on paid summer internships which are extremely available to give you an idea. Even freshmen petroleum engineering get summer paid internships their first year. So I have to compete with that. And then the other thing they value a lot is visiting industry, they call them externships, and learning from industry representatives. A lot of them come here to visit the student organizations and they also come twice a year to our career fair. Our career office organizes the fourth largest fair in the country, so hundreds of companies come to recruit our students, and you see all of the engineering students wearing suits, even freshmen year to go and mingle with these recruiters, knowing that maybe their chances of getting an internship the first and their second year of school is minimal, they get practice this way. And also they are trying to figure out a career path and looking for mentors. These are very important considerations in terms of their evaluations of opportunities out there. So, my goal has been to try to match and surpass these expectations and I have seen that there is definitely a vacuum of programming for students that are in the first couple of years.

International Engineering Education Abroad:

The traditional view has been that study abroad is for the junior year. International engineering and education, my office was founded in 2005 by our current vice-provost who is a mechanical engineer. She has done a program for the last ten years to France. Curriculum integration is in the very, very early stages. A few students that are anticipating studying abroad for this semester inevitably want courses, or new courses that we haven't figured out the credit for. So every student that comes in spends quite a long time trying to get all the credit lined up, because the degree is so sequential. Sometimes the best situation is for students to come in with a lot of electives.

Challenges for Semester Programs:

Some of the challenges for semester programs are that we are competing with the internships. The students that take a fall or spring semester might not be here to meet with recruiters that come to recruit for a summer internship. And then they might not be able to stay on track to graduate on time unless they have advanced placement credit and

therefore can afford to take electives that might not necessarily count for their degree but that might enrich their studies and make them more interesting.

Curriculum Integration & Program Design:

In adding value, one of my main strategies I was looking at the programs and thinking, “How can we make them richer? How can we make them better than the opportunities they have here so they won’t be able to resist them? And they will see the value of the experience more clearly?” One, by designing faculty-led programs we are adding the validity of having a faculty attached to our program, which already says to the students, “Hey, if the UT professor wants to go on this abroad, there must be a really good reason to do so, right?” So that’s a way of attracting populations that would not normally be attracted to study abroad. They’re going to be in smaller courses than the average large courses of the first couple of years. We try to look for departmental course requirements and we are lucky at UT that we have a process that was started in the international office and a proposal that none of the colleges of copied to streamline applying for faculty-led courses for the faculty and for screening the faculty. So I meet with a lot of faculty and come up with ideas about great opportunities for students. We try to connect the students with researchers abroad as well as industry experts and then visit or shadow some of the industry experts or getting involved in problem-solving activities. We have a couple of programs like this. Our goal is that most of our faculty-led programs will have some of these components in the future. We are also planning for our semester exchanges to have more customization as well.

Some of the course examples were just mentioned like our Nanotechnology and Innovation, this is our new four week program that focuses on learning about Nanotechnology and using it as a platform to teach students how to view their research, look for commercialization opportunities, and international patterns, venture capital, and also have Spanish students in the classes in Spain that are experts in Nanotechnology and faculty that have started their own businesses so that they can get a feel for the globalization of that area of engineering.

Nuclear & Radiation Engineering Maymester:

Another program that we started three years ago is a class that gives an overview of the nuclear and radiation field by world experts, and one of the best partners that we have in terms of ranking in the engineering field, Technical University of Delft. They have a nuclear reactor and it’s quite a great program that focuses on all kinds of uses of radiation including research and medicine, not just energy. The students get talks from PhD students and faculty who are doing cutting-edge research and they love it. They also have a laboratory every week. This is fascinating to the engineering students. One of my students that attended, when asked to talk about the benefits of the program, he said, “Well, I learned how to use radiochemistry. I visited a nuclear reactor. I attended conferences. I participated in conferences. I made a network of people in my field. And I got to also make some really great friends.” This was really helpful to him in his interviews for getting a really good internship when he came back.

Create Programs for First & Second Year Students:

The other type of program that has been in existence for quite a few years now is one that was designed in conjunction with a freshman interest group for the first year 2003, and then it came back in 2010, just as a single standing Maymester. We work in collaboration with an affiliate and of course, is coordinated by the international office with which we partner. So that’s a lot less work for me, the Nuclear Engineering program I have to run myself. But I do quite a bit of promotion for this program and advising for the students as well. Our college pays for the faculty salary and the TAs. I think for a lot of you that are in small offices out there, working with partners and some of them are very well known in the field who customize programs such as IES, CIEE, here locally we have API, ISA, and many others, I think there are about 3 or 4 here in Austin. If you have never heard of these resources I highly recommend looking at NAFSA as a possible resource for a list of affiliates that do customize programs.

Increasing Spring Reciprocal Exchange:

In terms of the semester programs, I thought I would show you one of our models that was created by our vice-provost when she visited the university which is Sungkyunkwan University in Korea, outside of Seoul. It works very closely at Samsung. So in order to attract students to go there, we ask them that they guarantee internships for students at the

end of the semester. This really helped raise enrolment as you can see. It didn't work very well this year, and we'll go into that. But I think it's very important to be able to sustain the relationship in terms of guaranteeing internships.

Integrate Service-Learning into Education Abroad:

The other type of program that's very common is probably most of you in the engineering field have heard of, the non-profit engineers without borders USA that has about 880 chapters around the country. The city of Austin also has a chapter and UT also used to have one, but then it was converted into a regular class called Projects for Underserved Communities in the fall and the spring in order to have better health and safety and also engineering supervision of the projects. The students get to implement the projects in the summer and this is something that engineers are very attracted to because engineering is at the core of so many complex global challenges in healthcare, medicine, energy, food safety, manufacturing, communications, environmental issues. And these are very cross-disciplinary programs because we need the help of social workers and we need the help of people who are experts on the local cultures. As you would in the real world, if you work for the UN or you work for USAID, in trying to help the community needs, let's say after a human disaster, like an earthquake, or let's say, engineers are always being called to solve problems such as air pollution, water pollution, things that are only going to get worse. Actually, there is an academy for the global challenges that I could talk a little more about.

So engineers are not just interested in business they are also interested in these larger issues, but engineering is a very, very success-oriented and business-oriented culture, especially here in Texas. A lot of our students are hired by energy companies.

Business & Engineering Together

So one of the programs that we created last year in response to a lot of the students dropping because they couldn't do the engineering internship and study abroad, they had to choose one or the other. They didn't have time in their degree. I thought well what can we offer to them? For one, let's have more programs that are customized internships that also have added value in terms of creating other things like networking events, company visits, and language classes. Then the idea for this program evolved after being contacted by someone in the international office that wanted to do internships, and I wanted to do internships. We thought business and engineering would be the perfect combination to create a special niche for business and engineering students to start networking together as they will be in the real world. Early on, have a network and also go together abroad especially advance in preparing them. We are working with two companies that help us place the students, so this is not a lot of work and I think we had about 60 applicants this year.

Incorporate Engineering Values in Study Abroad Marketing

So we are also trying to incorporate some of these engineering values into the study abroad marketing. This is the result of my conversation with the communication team, UT Engineers going global, getting global experience and stay on track. Here we are counteracting that message, Oh you are not going to finish on time. There are possibilities for you to study abroad and finish on time.

Incorporate Engineering Values in Study Abroad Presentations

We also incorporate engineering values in the study abroad presentation. So I show the students that, their global competitors are also collaborators, because they are not always going to be competing. They are going to be collaborating to solve global challenges, through statistics, which engineers and natural science students love. So this graph, actually from the U.S. government shows a number of degrees from different countries in the field of engineering to the right. So you can see that the United States will only have 4% of the world's engineers and other countries will have much higher percentages. The students can already see this in graduate school. Only one out of every four students will go to graduate school here in America, because it's kind of an end professional degree for a lot of them. Some will go to Masters Programs, and most of their peers are going to be from other countries. This will also be the same in the real world. In the real world the companies are choosing the best engineers and they are coming from all over the world. As a matter of fact, the U.S. government is saying we will need one more million professionals in the

STEM field over the next decade to regain a U.S. global competitiveness. So I also talked to the students about the US economy and how we are no longer going to be the number one largest economy in the world and the rise of other economies in the world such as Brazil, China, India, and one of our new programs we created actually is going to take place in India and is going to discuss industry experience. They are going to be problem solving as freshman working together with students from very high levels from the Indian institute of Technology and it's going to be actually run by CIEE, our local partner, and the India Institute of technology, and a professor here from UT who actually grew up in both India and the U.S. and it's going to be coordinated by one of my great colleagues in the international office and we help recruit. So the idea for the program came from us but we are also using resources from outside our office to help us bring this to a reality. I'm really pleased to say we had twenty students apply for this year. So we also incorporate engineering values by showing the students that, this graph for example shows the students the top 1000 companies, and it asks the question do you have internationally mobile employees. And it says 60 percent of them say yes and to the right you can see where the companies are head quartered. So the students learn a little bit about globalization and how fast it is spreading and how much of globalization is being led by high technology and how much engineers are involved in this technology and how it is changing the culture, not just of the United States, our society, or our economy, but the entire world. So we also talk a little bit about cooperating on global challenges and how this relates to culture. So in order to be successful either in business, or in government, or in implementing humanitarian programs using technology, we are going to have to learn about the values and the needs of regional governments and corporations. So I talk with students about how going abroad will make them afford a rare regional expert about what are the forces in that society that are affecting their fields and also the government input into their field in those countries. So if you go to Sweden, they focus a lot on sustainable development. You know they have the history of Chernobyl, in polluting with radiation. So a lot of countries in Europe are against that kind of energy, some countries are in favor, and why is that? So we talk about those things as well.

Making Connections

So how do you make connections? You know, I used to have a lot of information sessions for liberal arts and social science students and a lot of people used to come. You know there is word of mouth, and a lot of their peers study abroad. But you know in engineering, they are so busy, they don't know many people that studied abroad, and maybe they think that studying abroad is not adding value to their education. So I started going to where the students are going to and assembling.

Connect with Student Organizations

I was already being invited to freshman orientations and freshman interest groups as a speaker, and then I noticed the college had so many student organizations. Because it's a professional degree, for example there is the IEEE, which is an Electrical Engineering Professional Association that was founded in 1963 in New York and it has a really wonderful motto about helping humanity through creating technology.

Making Connections

Well they are a national organization, with regional and university chapters that help students in that major become more familiar with the professional standards, and it invites speakers, it invites professors, so I learnt a lot about the field and I could connect with the students by going and speaking at those events. I was also meeting the faculty and academic advisors, and then having my own regular info sessions. I also used some of the incentives for early planning that our international office has modeled. I announced there were scholarships for first generation students but I also created my own early planners semester scholarship.

Learn & Work with Diversity Promoters

I would say learn and work with the diversity promoters here on campus. We are on your campus. We are very likely to have an equal opportunity in engineering program, woman in engineering program, an engineering student life coordinator. They are tremendous resources that can make your job easier and can become your allies when they see the results of your work with students in helping them connect to experiences that are going to retain them and make more excited about being in the field, because one of the big issues in engineering is that people drop out after the first

year or the second year. So it's really important to have more programs for students in those years before they get to their junior year. The students that study abroad in their junior year are the ones that would have done so anyhow. They are the 3.8, the ones with parents who studied abroad before and know the value of a whole semester abroad. When I did my demographics it was really obvious. So the students we are attracting with this first year and second year programs are a more diversified community and a lot of the studies have shown from the president's council of advisors in science and technology that in order for the U.S. to get that one million STEM students we are going to have to reach out to underrepresented communities and retain those students as well. So that's all for me now.

Aileen: Hi Helena, thank you so much. I really enjoyed your presentation and I will have room for questions later. I'm sure the audience will have lots of questions as you presented lots of innovative topics and programs. So now we'll move on to Emily who's with Cultural Vistas.

STEM & Program Development

Emily: Thank you Aileen, I'm Emily Wiechers, I'm the outreach coordinator at Cultural Vistas. We are a long standing international exchange organization that started in 1960, and we are the result of a merger in 2011 of two international organizations and so we are now a larger provider of programs. I am a Gilman alum, I had a Gilman Scholarship, I studied abroad my junior year of college in Germany where I was studying international business at a technical university in Germany. So I'm really happy to present here today as also a Gilman Alum. So after the merger of Cultural Vistas in 2011, one of the programs that is one of the longest standing programs of these exchange organizations was a technical internship program for students in STEM fields and it needed some revitalization. The numbers were low and we took on the challenge of revitalizing this program called IAESTE.

Barriers to STEM Experiential Education

In order to do that we looked at the challenges faced by STEM students for experiential education opportunities. Helena touched on many of these and I think we know them too. So we went through those same kinds of questions when thinking about what do we need to do in our program offering in order to make this appealing for students, make it doable for them, and Cultural Vistas because of our work with different governments and organizations across the world, especially with this IAESTE program which has partner organizational committees in over 80 countries around the world, we felt we were really well equipped to utilize those partner networks and create a program that would appeal more to stem majors. So we looked at the fact that they have a rigorous structure to their course work and little time for things like language studies, as Helena mentioned or taking the time out to do these programs. We also looked at things that all students, especially underrepresented in study abroad faced why they don't go abroad, like the three Fs or their identity linked to their campus life and not wanting to take time from that. And then we again really focused on the things with STEM student, the length of time that they would be away on a program and how that would affect it. Also most of Cultural Vistas programs focus on work components, internship components and so we knew that this would be something that would appeal to STEM majors knowing that that practical experience is really important to them. So our programs the main focus is the work experience, the tools for the global workplace and therefore we can kind of combine that with language and cultural and even some educational components to enrich it but still keep the focus on the work experience.

Cultural Vistas: STEM Programs

So I'm just going to talk a little bit about some of the program models that we use to support a larger focus on programs for students in the STEM field. We created some new programs in addition to the ones that we already had in order to help feed STEM students into these programs. So we have two models that we work with for undergraduate students. One is a group model, and the other is an individualized model. The first one that we did newly this year, which is a great collaboration of universities, Spellman and Morehouse colleges in Georgia, a foundation that we work with, the Halle Foundation in Germany. It was a STEM LAUNCH study tour that took 20 university students and their two faculty members on a two week excursion in Germany looking at cutting edge technology, research in the stem field and all that Germany has to offer. They visited with host companies, universities and research institutions throughout Germany. It was a great first experience for these students to see what was available out there and what they could gain from

studying abroad or interning abroad, specifically what Germany had to offer and it was again a first immersion experience that was two weeks, so it was short term and we were able to find funding through our partner the Halle foundation for it and so the faculty accompanied them. And then this last year Cultural Vistas proudly launched our first fully funded fellowship program, the Cultural Vistas Fellowship. We administer a lot of fellowships on behalf of a lot of other foundations throughout the world and this was the first one that we fully fund ourselves. We wanted it to focus on underrepresented students in education abroad, so that included STEM fields and we wanted the focus of the program and the internships to be in fields of sustainability so we created a program that is an eight week summer internship in three different countries and it's a very innovative model because it starts with a virtual component that all of the fellows can do from wherever they are, where they get to learn more about each other, the country they're going to be doing their internship in, and the field of sustainability they're going to be focusing on. Then we bring them all together for pre-departure and they have a cultural program and then they go in groups of four fellows each to three different countries including Argentina, Germany and Singapore. So in that sense we select fellows who can have a basic knowledge of Spanish going to Argentina, same for Germany and then with Singapore it's all in English so there isn't a hundred percent language barrier but we also do encourage the language learning so that fulfilled our mission of that. So the program concludes with a service learning component so after they completed their eight week internship in summer, they do follow on service projects in their home communities that really gives them the opportunity to strengthen their leadership skills they've gained from being abroad. So that was again, something that focused on STEM majors, we recruit heavily stem majors for this fellowship program and it's a short term experience. And then for the more individualized, I would say, independent majors who know more of what they want to do in their career field that led into strengthening our International Association for the Exchange of Students for Technical Experience, the IAESTE Program, that started in 1950, again it has a partner network in 80 countries and each of those countries has local chapters so there's support for all the interns in these countries, and these are paid internships that are between 8 to 12 weeks. So again looking at the time that students want to spend that's most ideal, summertime and also that issue of needing to have a paid internship, so these are paid internships. There are internships that focus more on research and others that focus more on training. And finally, Cultural Vistas has an internships abroad department that is a service that we have created that gives students customized internship placements so it really focuses on finding something for them in their fields. These can be both paid and unpaid and it is a service, so it is a fee based program. However, we have created a scholarship funds specifically for it, knowing again that that is an issue. The range of time that people can do those is very flexible. They can start them at any time of the year; they can do them in summer, winter, and fall, all year long. They can do it for as little as three months in summer. So there's a lot of flexibility with that, giving people those options. We also offer language course stipends. So if they wanted to do, like they didn't have time to study for a full semester a language. We do intensive month long language courses in summer as well, that we offer scholarships and stipends to those students for. So these programs all kind of work together. We found with the STEM LAUNCH that after having that experience, many of these students were interested in then participating in something like a Cultural Vistas Fellowship or an IAESTE internship experience.

Assessing the Quality of Internships

When assessing the quality of the internships, it's important that you have established trusted relationships with your host companies and you build reliable partners in the countries you are working with. So, if you are an organization or a university that needs that, you might look for a provider that has already those relationships established, you might look for a partner in another university, like Helena mentioned, with this partner university in Korea I believe, and so we assess the quality of the internships and the internship host by clearly communicating our expectations and goals that this is a learning and skill based program and what the students want to get out of it and make sure that's clear at the beginning. We also really work with the students to have an honest assessment of their skill set, career goals, and their language skills if that's applicable. We evaluate and we use a lot of different evaluation tools at the end of the internship, even actually it starts really from the beginning of the internship and through till the end to ensure quality and satisfaction from all sides. And we check in regularly both with the host companies and the interns to assess the progress of the internship, engagement, and satisfaction on both sides. When issues arise as they sometimes do that's when we really rely on that in-person communication, in-person visits whenever possible or with our partners to help

settle anything like that. Making sure that these internships are of high quality. So that's obviously important to STEM majors, too. They want a cutting edge experience and they have very little time to waste.

STEM Program Outcomes

So going back to the STEM LAUNCH study tour, that was something we started because we felt that there would be a benefit in having some short term programming options available, especially for STEM fields and this would get STEM students interested and feed them into programs like IESTE and Cultural Vistas Fellowship. After the STEM LAUNCH study tour concluded, our post program survey found that 83% of the students would consider a higher degree in a STEM field because of their experience on this program. So keeping students in long term learning in perusing graduate study, that this helped them to become more aware of their career pathway. So 88% of the respondents said that they became more aware of work opportunities and 77% became more aware of research opportunities. And 100% of them said they were likely to go abroad again after that that experience.

Vision to Reality: Pursuing Programming

In terms of long term program planning, bringing the vision to reality and perusing programs yourself, so what we did was we started when we wanted to focus on getting more STEM students through our programs. We revisited our program portfolio and we set our mission. We set a strategic plan for 2, 5, and 10 years out. We reviewed our existing MOUs and looked at what partners that we currently have and how we could utilize them to create these programs or we looked at where we needed to forage new forms of partnerships in order to create these programs and so through doing that and identifying the partners you need and the funding that you need to successfully create the program and then finally we look at the strength and weaknesses of those providers so that we know then what the expectation is that we will need to work with them for, are they looking, for instance the Halle foundation wants to support study abroad for students from the state of Georgia so, you know, we focused on creating programs for student from colleges in the state of Georgia, so then, other programs we would not work with them on for instance. So looking at that long term program planning, those were the steps that we took in order to create this more comprehensive portfolio of STEM programs for study abroad. Thank you very much.

April Gillens

Aileen: Thank you so much Emily, I think that was great. If you have any questions for Emily and Helena you can type them into the chat box and were going to move along and I would like to introduce our Gilman Alumna, April Gillens. She studied abroad in Ireland in 2008. She's a biological engineering major from North Carolina A&T, and she'll talk a little bit more about the student perspective and any advice she might give on those issues. Hi April.

April: Hi, hello everyone, my name is April Gillens, I'm currently a doctoral candidate at Clemson University and my program of study is environmental engineering. So I studied abroad at the University of Limerick during the spring semester of 2008. That was actually the second semester of my sophomore year.

Connecting the Dots

So the first step that I took in planning to study abroad is I looked for universities abroad that offered engineering programs. I was in biological engineering and I couldn't find as many biological engineering programs abroad but I did see some mechanical engineering programs and even aeronautical engineering programs that were interesting. So it was helpful for me to study abroad within my sophomore year because the courses that I ended up taking while abroad were the more general engineering courses. And that's something that I spoke with my advisor about beforehand and that's something that he advised me to do because typically the junior and senior level courses are specific to our department at North Carolina A&T so I was able to take some of the basic courses like dynamics, engineering dynamics, and I also took two electives as well in fluid mechanics and electives to keep you on track for graduation, and you also want to make sure you get approval for the transfer of those credits. This was a long process for me. I chose, I'd say 5-8 different course that I could take during that time that I was studying abroad and I matched up the course description, maybe about 3 courses descriptions that every one course that I would take at my home university. I presented those courses descriptions to my advisor and he took some time to determine whether those courses could be equivalent, I

also had to take that to my department chair as well as the dean of my college. I was able to get all the approvals for the courses that I could take, so that made the process better. Because I wanted to make sure I was getting credit when I studied abroad. Another thing that I was able to determine is whether those courses would count as pass or fail credits or would I be getting a letter grade. The way it worked at my university when students study abroad, all you get is a pass or fail. So you'll still get letter grades at your institution abroad, but it's up to your home university to determine whether those grades will factor into your GPA or whether they'll just be pass or fail and those grades won't factor into your GPA. In my case the grades didn't factor, but of course I passed all my courses. So after everything was established with my courses, I felt more confident that I was actually going to be able to study abroad. So I went ahead and got my passport and started looking for funding for study abroad, and the Gilman scholarship was one of the first scholarships that I considered for funding as well as the program that I studied abroad through which is the American institute for Foreign Study, I was able to apply for some scholarships within their program as well. An important thing to do before you leave is register with the U.S. Embassy for whatever country you're going to go to. That way you'll be updated on things that are going on in the U.S. I frequently got emails from the U.S. Embassy. There was actually a voting period when I was in Ireland and I had to go and cast a vote during the time that I was there and I was able to do that because I registered through the embassy and they had the appropriate documents for me. Another benefit about registering with the U.S. Embassy is if there's some type of crisis that happened within Ireland I would be accounted for because the embassy knows I was there. Another thing you should know before you study abroad is applying for immigration when you go to the country that you're going to. So there was a certain procedure for me to apply for immigration, I had to do it within a certain time, and as a part of the immigration, applying for immigration, I had to show about \$2,000 dollars in my bank account and I have to have some type of justification as to why I was there studying abroad of course and I also had to pay about \$150 dollars just for my immigration card and the stamps and my sticker. Immigration is different for different countries but before you go abroad it's very important to understand what you need to do for immigration.

Completing the Circle

So some of the lessons I learned while I was studying abroad, for one it was a huge culture shock for me. Out of the twenty students in my study abroad program, from the U.S., I was the only African American student and I later went to an exchange student orientation at the University of Limerick of about a little over three hundred students and I realized I was the only African American at the orientation and I was a little nervous so that was something I had to get adjusted to, but you know, most of the students they really didn't look at my race and it made it more comfortable for me so I was still able to make friends there even though there weren't many African Americans there even in my classes, but that didn't really have a damper on my stay there. Another thing that I wasn't that aware of is currency fluctuations. I came to Ireland with a great amount of American dollars and I would keep watching the currency or the value of the dollar every day and I was trying to figure out well when the best time for me to convert my cash to the Euro, the currency fluctuated very frequently and there was just a day when I had to just go ahead and convert my cash over because it just didn't seem like the dollar, the value of the dollar was getting any better. I did go abroad in 2008 and that was a very economic disaster for the U.S. and while I was there, the few months being at Ireland, the dollar had reached its all-time low. I was taking very careful approaches in spending my money. Another thing is my study abroad program; they offered a meal check which was 11 euros per day. So I would take that meal check and use it to the best of my abilities because it was already in the euro. That was a great benefit in my program. Another thing in my classes, I had to adapt to different teaching methods. At the university of Limerick most of your course work doesn't come into play until the end of the semester and most of my courses, 80% went into the final exam and the 20% was in some homework assignments and some lab assignments and there was one class fluid mechanics I was able to go to a teaching assistant session and get more practice outside of class and we also had a lab for that class as well. We had to turn in lab reports throughout the semester. I was a little worried about the 80% being in the final exam because you only have that one chance to make your score whereas here in the U.S. you have the length of the semester to secure a good grade in your courses so that was one of the things that I had to adapt to, but I was fine. I passed my courses. Another thing I lived in a house with 7 other students of different nationalities. There were 3 French, another American, one Chinese, an Austrian, as well as a Ugandan, and that was the best experience to have ever. Just living with people of different nationalities and our dinner time was always very interesting. We rarely talked about what we did in the day but we would talk about the differences in our culture. I had the opportunity to eat different meals and I was able to cook certain American meals for

my family and I really grew very close relationships with the students that I lived with there. We still keep in contact today. I've met a couple of them when they come to the U.S., so hopefully we could do a reunion later on in life. But they had a great impact on my study abroad experience and I'm very happy to have shared my time with them. The University of Limerick has a university arena and one of the benefits to my study abroad program is they offer free membership to that university arena, so it was right on campus and I was going to the gym practically every day. I took classes in aerobics as well as some aquatic classes and that was a great outlet for me because that's something that I did not do much of when I was at my home university. So it was good to find some time for physical fitness. Some more perks to my study abroad program is they offered a trip for us to go to London, England. That was a great experience. We stayed there for about 3 days and we had a registered tour guide and we were able to spend a few hours throughout the city alone. So that was a great benefit to my study abroad program. So some of the things that I learned when I came back, starting with number 7 is I felt like there was a need to encourage other people to study abroad because this experience really opened my mind in meeting new people and seeing a different teaching method, understanding the fluctuations in the currency, and understanding that I could work in an environment such that everyone is not of my culture, that was one thing that I wanted other people to see more than anything so I would encourage others to study abroad as well. I had the opportunity to speak with high school students for my Gilman follow-on project. I spoke with the senior class of my high school. I was encouraging them to go to college and I wanted them to see that one of the benefits of going to college is you could participate in a study abroad program such as myself. Going to number 8, with the global insights that I gained, I felt that I was more desirable to a lot of employers. Having this experience made me more open to look at jobs that weren't close to home. I'm from South Carolina and I ended up doing internships, one at MIT in Cambridge, Massachusetts, and another at Los Alamos National Laboratory in Los Alamos, New Mexico and while I've been in graduate school I've been able to intern at Lawrence Livermore National Lab in the national lab out in Livermore, California. Not only was I able to gain global insight, but its allowed me to step out of my comfort zone, even exploring other states within the United States and I think that's very attractive to employers because oftentimes when you do gain a job there could be some travel requirements that are attached to your job and you just don't want your first travel experience to be after you've gotten a job and I think it's more attractive to employers if they see that you have traveled and spent some time away from your home university during your college experience. Going to number 9, I gained a greater passion in engineering and continuing higher education, so right now I'm a graduate student but during the time I was in Ireland I went to a post graduate fair and I was looking at different universities in Ireland as well as in England and I was considering doing my graduate education abroad as well. It terms out that I ended up staying in the U.S. but because I studied abroad I wanted to further my education in engineering and it really helps to see that engineering is a global profession and that is very important for you to have some global experiences even if you end up taking a job overseas in engineering, study abroad will help you be able to look for opportunities like that. And also going to number 10, I was able to develop international relationships as I said with the 7 students that I lived with and often times our conversation were about our cultures back home and just gave me great insight as to how some foreign student feel at my home university so when I came back to A&T I was more open to being friends with foreign students and speaking with them, not just about the day to day life on campus but talking to them about their cultures at home and I just think that, that helps a lot of the foreign students because they come to the U.S. and sometimes the culture is very different from theirs and it seems like no one really cares. I was able to open lines of communication between myself and a lot of foreign students and talk more about the culture, want to understand their language, and often asking them, how I would say certain words in their language as well. So those were the lessons that I've learned upon returning.

Questions and Contacts

Aileen: Thanks so much April. We're going to move on to our virtual resources and so we're going to share with you our organizations.

STEM Student Resources for Study Abroad

Here is the slide of our resources for study abroad. The first few are actually administered through the Institute of International Education so if you want further information you can visit them. We also have a recommendation from ISA and you can become a member of the IIE Network and utilize our academic partnerships in order to create these unique

and specialized programs for your STEM students. If you want to find out more statistics about the number of students that study abroad or best practices or what's being done, you can look at IIE Open Doors. There's also IIE Passport if you want to look at programs for your students; there is also a white paper created. It was a few years back, but I think a lot of their information's still relevant so on the IIE website under the Research and Publication section you can find a white paper on promoting study abroad in the science and technology field and then ISEP has a really great advising toolkit for STEM majors. So you can check that out on their website as well.

Questions and Contacts

So now we're going to open up the floor for questions. My colleague Claire is here and she'll be fielding some of the questions that we might have had for our panelists.

Claire: Hi everyone, thanks Aileen. We do have a couple questions coming in here for Helena about how she works with faculty to design programs for engineers.

Helena: Our university actually has central study abroad office that puts out a general call to faculty to propose programs and our faculty can do that and then our office also has its own system for promoting the possibility to faculty. I also take a little bit of a proactive role by getting to know the faculty and getting to know the interests of the different departments, I talk to the department faculty chairs and also to my dean about the possibilities that would make sense in terms of our priorities. We have a process that has already been established by our central study abroad office and we mimic that process so sometimes we decide to work together or separately, but we have some general standards already built in. So it makes it really easy. Sometimes depending on whether or not we have a very strong connection with the site abroad, we might or might not choose to bring in a third party provider such as one of the companies that I mentioned or somebody like Cultural Vistas, it depends on the situation. So we have some standards already built in and then we look at the priorities of our departments in engineering. They have to be approved. Courses have to be approved by the chair of the department and then by our team, and then by the international office as well for health and safety.

Claire: Great, thank you. Now we have a question for Emily. Emily, you mentioned a bit about the data you gathered, can you talk a little bit about how you used that, if you used that for marketing to advisors or what you all did with that information that you get.

Emily: Sure, so we use the data in a few different ways. Part of our strategic planning that we set forth from the beginning with this was that you know in 10 years' time we wanted to be able to show the long term impact on STEM students of these programs, so that's kind of the overarching goals and the evaluation that we're using is all focused on being able to show that impact and being in touch with those participants and in the short term we use those evaluation tools for marketing resources. When people have good experiences word of mouth is definitely one of the strongest tools for students to want to come and do these programs. They hear it from another fellow major that they had a great experience. I'm sure if people heard April and her experience if they were studying with her they would be inspired as well. So we often match up students in their universities to do some outreach for us. They've had these great experiences so in the short term definitely yes with marketing and outreach and in the long term to assess impact.

Claire: Great, we've had a question about specifically UT; Helena can non-UT students attend UT engineering programs abroad?

Helena: Not at the moment.

Claire: Ok, great.

Helena: Unfortunately, but we've had many requests. I'll check into it.

Claire: Ok, thanks. We have another question perhaps for Emily or maybe Helena as well, both of you. Have either of you encountered situations where third and fourth year engineering courses in the U.S. undergraduate programs are taught at masters levels outside of the U.S. and if you've encountered that, has that been a problem?

Helena: No actually because the European degree is a three year degree, our junior level students are allowed to take courses at the master level at several of the universities abroad and its very convenient as well because many of the master's degree programs are offered completely in English at some of the top universities. For example, we worked with KTH in Stockholm and all of their master level courses are offered in English and are open to students from all over the world.

Emily: And, you know Cultural Vistas is really more focused on the internship experiences, we don't delve into the studies ourselves so I would go with what Helena said.

Claire: Ok, great. April can you talk a little bit about what inspired you to study abroad and then talk about if you knew going into college that you wanted to study abroad or if an on campus recruiter inspired you to do so.

April: Study abroad was something that was very attractive to me even as I was a high school student. I can remember speaking with a cousin of mine who was in the army and she was saying that that isn't an opportunity available and at first I didn't really go about that process but after I got into college and being a member of the honors program, study abroad is something that they encourage their honor students to do. I also spoke with my advisor about it and he said that it could be done and he actually encouraged me to do it, and he also had given me a job in the study abroad office for a semester. Being in the study abroad office for that semester really allowed me to look into the process of how you study abroad because I saw students coming in and out and the types of orientations that they needed to do. And I was also able to speak with some of the counselors about how to choose a university so that's all available at study abroad offices. One of my main inspirations is I wanted to show that it could be done and that the I guess the stereotype with a lot of engineering students is that it would delay your graduation and that was one of the downsides to it, but after getting the proper controls in place and making sure my credits would transfer and making sure that those courses were available that semester that I was going abroad, that really wasn't an issue for me at all.

Claire: Great, thanks April so much for that, and we actually have another question for you. Was there a form that you used to get your courses approved and what department did you get that form from? Was it study abroad or was it engineering?

April: So there was actually a form through my study abroad program, but that was in order for them to know that I would be taking courses through the University of Limerick. Now, there wasn't a specific form that I had to use for my transfer credits. I believe the study abroad office was able to draft some type of agreement, but basically all they needed was the course name that was available for the course at my home university as well as the course name and number that I would be taking at the university of Limerick and in order for me to get those approvals I drafted my own word document I cut and pasted the course description from my home university the course bulletin and I found something similar to a course bulletin for the university of Limerick and I was able to make a comparison but that was something that I did using my own word document and I sent that document to my advisor, we talked about it, as well as my department chair. I pretty much went up the chain until I got the final signature from the Dean of the College of Engineering. And once I got those signatures, I submitted that to the study abroad office and they took care of making sure I would get those credits because my college had agreed were equivalent to the course that I would be taking at my home university.

Aileen: Thanks so much April, I think we are all out of time. Thank you so much to everybody who was involved, I think this has been a really productive webinar. I know that I've learned a lot from working with these fabulous advisors and Gilman Alumna. If you have any further questions feel free to email us or you can email any of the presenters. Thank you for joining.