Department to Department Partnerships in Mathematics

To: CIGE  
From: Department of Mathematics  
Re: A report summarizing results and future work regarding the D2D Partnerships with the Universities of Glasgow and Aberdeen in Mathematics grant, summer 2017.

Results Summary

The overall results from the Department of Mathematics visit to the Universities of Glasgow and Aberdeen are extremely positive. Conversations at both universities resulted in course equivalencies being established in both directions, figuring out a way for their students to be able to study abroad here, getting a better sense of what type of mathematics and physics programs the universities have so that we can better prepare our students, receiving information on what resources they have for international students and information on opportunities within the cities and surrounding areas, and developing an on-going relationship with the members of the mathematics and physics departments.

We will be able to better advise our students about where they should go now that we know what classes and opportunities are available at each university. Also, having first-hand knowledge of the locations will enable us to internally prepare our students alongside the information they receive through CIE. Duffy will take the lead in the Department of Mathematics in informing the students about the various study abroad opportunities as well as act as the department study abroad advisor. Our students are very excited to have these opportunities; and, our department is excited to offer these opportunities as well as continue to work with the Universities of Glasgow and Aberdeen.

More details can be found in the sections below.

Glasgow

Before leaving Duffy was in communication with many people at the University of Glasgow setting up meetings and exchanging preliminary data. In email conversations with Dr. Misha Feigin, Maths Exchange Coordinator, before the trip he was happy to help with establishing course equivalencies for us, however, was doubtful that it would work for their students to study here. Duffy met with Feigin and Dr Tereza Neocleous, Statistics Exchange Coordinator, and they were able to work out a way for their students could come here in their Year 2 studies. This includes an agreement that they could do a directed independent study (under Duffy) on the course we do not offer here and take a physics course. Additionally, about a dozen course equivalencies were established for our students and they agreed to work with us so that our students studying abroad in Fall could take their exam early or have it proctored here (they take their exams in Spring). Overall the conversation was extremely positive and productive and we all left very excited about the possibilities. Since returning, Feigin has put Duffy in contact with the new Maths Exchange Coordinator, Dr. Sira Gratz, and has passed all of the information on to her. Gratz and Duffy have emailed and she is equally excited to be working with us. She will keep in mind possibly coming here to see our program and campus firsthand.
The other main purpose in visiting Glasgow was to learn more about their summer programs in mathematics and physics and establish whether it would work well for our students. The summer program was started for a University of California school and this will be the first summer our students may also enter into the program. Duffy met with Dr. Andrew Wilson, director of the Maths summer school, and sat in on one of his classes. They are looking to grow their maths program (20 students currently) and are happy to welcome our students into the program. After talking with Wilson, seeing the syllabus and example homework sets, observing a class, and talking with the students in the program, Duffy believes it is a great fit for our students. It satisfies both Math 312 and 324, one or both of which are required by all of our majors as well as other STEM majors. Thus, it is a great opportunity for many of our STEM majors to be able to study abroad. Duffy also met with Dr. Craig Smith about the Scottish history and culture class that is taught alongside the math courses. Wilson has said that if we wish our students to have more math and not take the Scotland course, he is happy to add more material to the current courses or add another 2 credits of math. We have decided for the moment to have our students take the culture class, but are definitely keeping in mind this possibility. Likewise, the physics summer school is a great summer study abroad opportunity for our students. It is a larger program having about 90 students, but they are happy to have our students in their program. Duffy met with Dr. Eric Yao, Physics summer school director, and observed the labs and discussion sessions. This summer program counts for Phys 231 and 232. They have two tracks: engineering and life sciences. As these are the first two courses physics majors take, it would be for those who decided after their first year to switch to physics and need to catch up as well as all of the STEM majors that require these courses.

Duffy also met with the Summer School Manager and Coordinator, Lexy Docwra and Maxine O’Donnell. They discussed the summer programs in general and what resources they have for the students. They have student leaders so that the international students get to know locals who show them around. They also hold many events, including a welcome ceilidh which Duffy attended. Even universities holding their own summer programs on the campus are welcome to these events.

The university has a lot of international students in general, and so they have a lot of support for them as well as a lot of ways for them to integrate into the Scottish culture. Duffy met with Rhona Gordon and Colette McGowan, International Exchanges and partnerships manager, about semester long study abroad logistics. They are happy to help us as we send our students to study abroad.

Lastly, Duffy met with Dr. David Fearn who is the International Dean and Professor of Mathematics about the University’s flexibility in helping us get our students abroad and their desire to work with us.

Overall, it seems like Glasgow is willing and excited to work with us and they offer many great opportunities for our students.

**Aberdeen**

As with the University of Glasgow, Duffy was in email communication with various people at the University of Aberdeen before travelling. Mathematics course information was exchanged with Dr. Assaf Libman, Head of Mathematics, and she was in correspondence
with the Head of School, Jan Skale. While Skale was unable to meet, she did designate someone to meet in her stead.

Duffy met with Libman for several hours going through every course to establish equivalencies (about 30) and to discuss course preparation and expectations. They have a more proof-based, pure math approach. This is good for our students, but also good to know in terms of knowing which of our students are likely to succeed there. Because of the inflexibility of their students’ schedules, it is difficult to figure out how they can come here. However, it was established their students could study here their second year. Duffy also went on a hike with Libman and his son and had dinner with his family. It was a productive couple of days in establishing a relationship between the two universities and working out logistics.

Course equivalencies were also established with Physics. Duffy met with Dr. Geoffrey Dunn, Senior Lecturer in Physics. After returning and talking with Dr. Lyle Ford, it was determined that because of the semesters physics classes are offered here, it will be very difficult for Aberdeen students to come here. However, Dunn, Ford, and Duffy will continue to work on this problem.

Duffy also met with Paul McBean, Lead International Officer for the Americas and Dominic Milne, Deputy Head of the International Office who talked about the campus as a whole (including a full tour) as well as their fantastic International Student Center. This center is for international students and UK students who want to study abroad. They offer many local culture and fun activities and trips as well as provide support. Aberdeen is a very diverse city and welcoming to all. Mary-Alice, Partnerships Office, informed Duffy that Aberdeen is starting to make their campus available for other schools to run summer programs at their campus. This is especially of interest to us in terms of Immersion Programs. Also, Duffy met with Prof. Bill Naphy, Dean for North America about expanding collaborations. In addition to math and physics, he mentioned that our nursing/pre-med programs might be interested in developing an exchange.

Again, the University of Aberdeen is willing and excited to work with us and they offer many great opportunities for our students. Overall, it was a very productive trip.

**UWEC - actions taken**

Since returning Duffy has been staying in communication with the partners at Glasgow and Aberdeen as well as meeting with relevant people on the UWEC campus. In meetings with Drs. Alex Smith and Lyle Ford, courses equivalencies were verified and submitted. These are now available on the Transfer Wizard. Various members of the advising team have been informed of the opportunities so they can help direct our students in making their schedule. Also, Duffy met with Colleen Marchwick and Cheryl Lochner-Wright, CIE, to share what she learned so that they can direct our students to these programs. Shanti Freitas was told about possible summer immersion opportunities at Aberdeen.

Furthermore, Duffy has spoken to the math majors and physics majors at their beginning of the year meetings to make them aware of the many opportunities. A handout with highlights of the opportunities was emailed out to math majors and minors and Duffy is visiting classes as invited by her colleagues. Duffy will be the department study abroad advisor. Feedback after these meetings has been very positive. Many students have expressed interest and have met with Duffy to discuss the possibilities.
Future

We expect these collaborations to lead to many of our mathematics and physics students choosing to study abroad either in the summer program or for a semester. The number and variety of courses they are able to take allows a lot of flexibility in terms of which semester they are able to go and makes it easier for most students to fit study abroad into their four year plan. Furthermore, both universities offer different courses than we offer here. This will be especially helpful for our students preparing to go to graduate school as they can take more advanced classes and others that are recommended in preparation for further studies. It is expected students who study abroad will share what they learned in their classes and in math club when they return.

Duffy is going to continue to work with her colleagues in Actuarial Science to help them find equivalencies in Finance. Already a couple of courses have been identified at the University of Glasgow which would fit into the actuarial science students’ tight schedule. We are confident that we will be able to work study abroad into their four-year degree plan. Before now there was not much opportunity for them to do any study abroad as just fulfilling GE/LE requirements would put them behind. Already, the summer program at Glasgow will fit very well with what they need.

Duffy will continue to encourage Glasgow and Aberdeen to send some of their students here and will work with them to help them do so. This also will probably include helping make up a brochure to send them to give to their students to advertise our program.

There are opportunities for other departments to get involved as well. For instance, STEM majors which require math and/or physics courses as well as Aberdeen is very interested in talking with Nursing.