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## Successful Engineering and Technology Student Mobility: Key Student Perspectives and Quality Determinants Before, During and After Student Exchange Under the Atlantis Programme

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# Successful Engineering and Technology Student Mobility: Key student perspectives and quality determinants before, during and after student exchange under the Atlantis programme

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## ABSTRACT

In this paper, we describe the lessons learned, and determinants of quality, from two Atlantis programmes. Additionally our two student authors will share key student perspectives relevant to student mobility: (1) before they visited the partner university, (2) while they were studying at the partner university and (3) after they returned to their home university.

Purdue University and the Dublin Institute of Technology, together with the Hochschule Darmstadt and Pennsylvania State University, were successful in securing an Atlantis mobility grant [1] for four years to support student and staff mobility between the United States and Europe. The programme has just completed its third year and both engineering and technology students have benefitted from it.

Subsequently Purdue University, Dublin Institute of Technology and the Universitat Politècnica De Catalunya were successful in securing an Atlantis grant to implement a dual degree MSc in Sustainability, Technology & Innovation [2]. This programme is now underway and the first students have begun study in partner universities.

Given that the core theme for this SEFI Annual conference is *global engineering recognition, sustainability, mobility*, this paper will address aspects of all three of these topics from both a student and an academic perspective. Among the key determinants of quality [3] that will be highlighted are student selection, student preparation and orientation (both out-going and incoming), student housing considerations; instructional culture differences; student plan of study establishment; student finances; accommodation of miss-matched calendars; purposes and nature of faculty mobility; programme operation and personnel; project

communication and evaluation [4]. The concept of sustainability will be approached in terms of both the content and experiences designed into the students' plan of study as well as the continuation of the exchanges and dual degree programme beyond the four year externally funded projects that enabled their initiation. Because no academic paper can present first person student insights, perspectives, and concerns and because these are also central to the success of such programmes, we have carefully involved two students in the preparation of our paper and delivery of the presentation. In turn, they have interacted with other exchangees so that a broad perspective is presented. The summary findings of the projects' third party evaluator [5] will be summarized to yield a complete 360° overview of what makes such important exchange and study-abroad programmes in engineering and technology fields successful. Finally, we will conclude with a brief highlighting of the evaluation design, assessment and monitoring systems needed to maintain effective forward progress for such project.

The paper will be presented by two faculty/academics associated with managing the Atlantis programmes and by two students who participated in the Atlantis programmes.

## Keywords

Atlantis; dual degree; transatlantic; student mobility; engineering education; technology education; sustainability

## 1. INTRODUCTION

*"The whole experience was awesome and I wouldn't take it back for anything."*

Ryan Fleming, Purdue Mechanical Engineering  
Technology Junior (3<sup>rd</sup> year) student who undertook full-semester exchange at Dublin Institute of Technology during Spring 2008.

The EU-US Agreement through the Atlantis Programmes supports consortia of higher education and training institutions working together at undergraduate or graduate level to improve their educational services, to compare and modernise curricula and to

develop joint study programmes with full recognition of credits and qualifications. The EU-US Atlantis Programme funds innovative projects across three strands: mobility projects, double or joint “transatlantic degrees” for students in the EU and US and policy-oriented measures. The main focus of activities must be on transatlantic rather than intra-European or intra-American interactions. Funded activities, such as the development of curricula, joint study programmes, exchanges and study abroad with provision for mutual credit recognition and language and cultural preparation, should be of demonstrable benefit to higher education students, vocational education and training learners and teachers/trainers/administrative staff.

One example of an Atlantis mobility programme is the DETECT Exchange Mobility programme. DETECT was initiated in 2007 and represented the collaborative response of four transatlantic engineering, design and technology education institutions (Dublin Institute of Technology, Ireland; the University of Applied Science, Darmstadt, Germany; Purdue University and the Pennsylvania State University, USA). DETECT was developed to respond to a 21<sup>st</sup> century global educational imperative; namely that increasingly innovative engineering and technology design will be accomplished by multidisciplinary knowledge integration in a collaborative, cross-cultural, networked, global, and digital environment. The project is a four year project which commenced in September 2007. As a core element, DETECT supports full semester transatlantic student exchange, with 24 ‘full-semester’ student exchanges originating from each side of the Atlantic over the course of the project. Under the auspices of this project, faculty exchange is also undertaken. Faculty exchanges focus on innovative and sustainable common collaborative transatlantic projects.

A second example of an Atlantis Programme is the STI Masters Programme. This is a four semester international programme of study developed for a minimum of 48 mobile students over the four-year project life: 24 European students and 24 students from the United States. For this project the participating institutions are Purdue University (USA), Dublin Institute of Technology (Ireland) and the Universitat Politècnica de Catalunya, (Barcelona, Spain). Students take a set of suitably integrated courses (subsets of pre-existing suites of courses) focused on technology, innovation and sustainability. Graduates from the STI Masters (STIMS) Programme will obtain a Dual Masters Degree (MSc/MS), one from the European institution through which they entered the programme and one from the United States partner institution, Purdue University. The authors are implementing lessons learned from the DETECT project as they work to implement the STIMS project.

## 2. ADMINISTRATION

Both projects required active teams of administrators and faculty, at each participating institution, working together with an engaged student body to achieve the ambitious objectives stated in the

proposals. One lesson that was quickly learned was that no single faculty member could deliver such a demanding range of activities by themselves. The work simply required administrative commitment and action, detailed familiarity with the programs and academic requirements of collaborating institutions, continuous responsiveness to student needs, and much more. Academic leaders such as Deans and Department Heads, academic advisors, financial aid personnel, international and study abroad offices, student housing managers, registrars and bursars were all required to focus on the project and help our students have a successful experience. All of this is in addition to a cadre of dedicated faculty at each institution who took the exchanging students under their wing and supported their learning.

This section discusses the administration of the two Atlantis programmes described above. It will briefly describe some of the administrative differences between a mobility programme and a dual degree programme. The discussion will address the following aspects of administration:

- Student selection
  - o Students were carefully selected based on academic performance AND their degree of initiative and ability to work in the face of uncertainty. Interviews were used in all cases. Language was a secondary issue.
- Student preparation and orientation
  - o Students were afforded up to three levels of orientation – Institutional orientation provided to all outward bound and inbound students, departmental orientation provided by the project administrators, and instructor level orientation provided by the faculty involved in delivering the program. It should be noted that our projects evolved to capitalize on a fourth level of orientation, namely peer, i.e. student to student orientation both before and after overseas travel.
- Local student issues, e.g., housing
  - o Housing, banking and transport proved to be the key local outside (the university) issues experienced by students. Internal issues tended to coalesce around the differences in instructional culture between the students’ home and host universities. Notably, peer orientation and interaction proved significantly useful in these realms.

*“Having to adapt to an educational environment that was significantly different than my home institution was a very important experience to have as a developing professional. I was exposed to a completely different way of doing things, and will very likely be exposed to similar situations in my professional career. It was important to experience another culture to develop a more global perspective on engineering and technology as a whole. I don’t believe that this was just a good experience to have, but an extremely necessary experience for all students to have as professionals. The program causes students to open their eyes and see things in a different light.*”

*This has permanently affected my thinking and the way I approach problems and tasks, and I am extremely glad that I participated in the program.”*  
Purdue student commenting on DETECT.

- Academic calendar matching
  - o Each participating institution, actually their program faculty, had to make significant accommodations in order to address the demands engendered by varying semester start and end dates. These accommodations included proctoring of exams for collaborating universities, allowing students make up time, permitting schedule flexibility, and more.

The section concludes with a few summary observations on the aspects of the administration of the programmes that exhibit good quality.

- Administrative commitment is essential
- Linking program activities to the institutional and department strategic plans and goals is important
- Faculty have to be prepared to invest extensive amounts of time and demonstrate considerable flexibility
- Peer orientation and support is highly desirable
- Success demands a team of collaborators at each institution

### 3. ACADEMIC PERSPECTIVES

This section will discuss the academic aspects of the programme, including development of the student study plan; instructional culture differences and academic management of the programmes.

#### 3.1. Development of the Student Study Plan

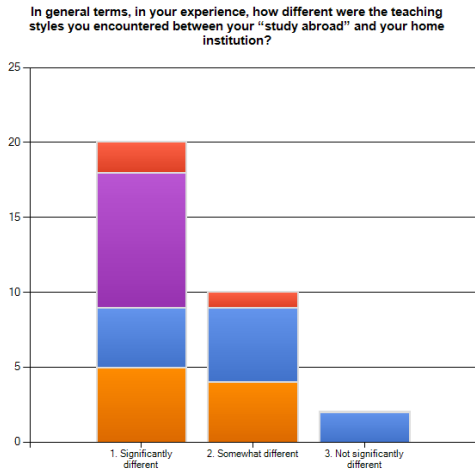
European exchange mobility students on the DETECT programme are typically 3<sup>rd</sup> year students in a four year programme at their home institution. Thus when undertaking a mobility exchange, they are not in an “award year” within their European institution. Their overall final award level (e.g., First Class Honours, 2<sup>nd</sup> Class Honours, etc.) in their programme of study is normally determined only by their grades in the Final Year of their home programme. Their final award is not influenced by their grades in third year. However, to progress to Final year, it is necessary to obtain 30 ECTS in their third year. Hence, in third year they take 30 ECTS (normal load) at the home institution; i.e. 5 ECTS/course x 6 courses. For European Exchange mobility students approved to go to a US institution, appropriate course committee members at their home institution match the 30 ECTS normal home load using a “2 ECTS Credits” to “1 Credit Hour” ratio. European students therefore take 15 Credit Hours (normal load) at the US institution. This is typically five US courses. An appropriate US portfolio of courses is chosen - closely matching in content and level to what they would have

undertaken had they studied at their home institution that semester. These courses are “approved as equivalent” by the Head of Department in their programme in Europe. As they are undertaking study in the US for a full semester, European students are effectively “exempted” from their standard six home courses. The students’ performance in their US courses and the number of credit hours accruing are reported by their host US institution to their European institution. Provided the exchange mobility students meet the requirements in their US courses to obtain 15 US credit hours, they are approved to progress in their home programme to the Final Year of the programme.

US students coming to Europe are also typically in the third year of a four year programme. However, the US system of Grade Point Averages means that student grades in the third year of their programme do count in the determination of their award level in the USA. This is where a grade equivalence table becomes necessary. When US students come to Europe, they match the 15 US Credit Hours they would take in Europe with a relevant mix of European courses (typically 30 ECTS credits) approved by their department head. The European institution provides their European transcript to our US counterpart institution. However, European institution also advises their regarding the Grading Equivalence Scale for these grades. In this way, US partners can see the match between the students’ European grades and US equivalent grades. It is necessary in these cases to use the grading equivalence scale in order to determine US equivalent grades; because in the case of US students only, their grades in the third year of their programme do affect their final award.

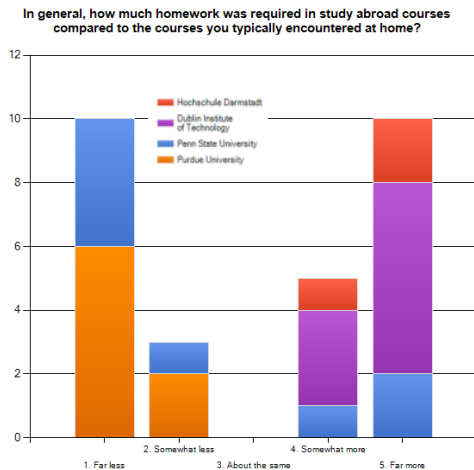
#### 3.2. Instructional Culture Differences

From all feedback, it is clear that Atlantis DETECT students found significant instructional culture differences between both geographies. Welker and Kenney [12, pg. 7], upon their review of the existing literature deem the existing assessment on study abroad to be *in its infancy*. In a recent and directly relevant study [6] of “study abroad” students, 62% of respondents classified the teaching styles between their “home institution” and their “study abroad” institution as “significantly different” on a five point Likert Scale, as summarised in Figure 1.0 below. This study comprises predominantly students who had completed “study abroad” under the DETECT Programme and the study was undertaken jointly by researchers at Dublin Institute of Technology, Penn State and Purdue University.



**Figure 1. Classification of "teaching style difference" by home institution of respondent.**

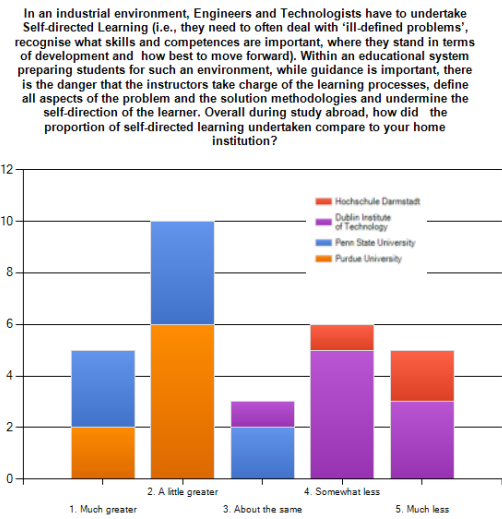
In particular, it was clear from this study [6] that both US and European students found a significant difference in the amount of "homework required" between the home and the study abroad institution as can be seen from the responses in figure 2 below. It was clear that the instructional culture in the USA required much more homework than the instructional culture in Europe. This was backed up by many statements from the European students, for example "[t]he emphasis was on the continuous assessment rather than exams" and "[i]n-class quiz's are common and unannounced in Purdue and account for a substantial amount of the overall grade."



**Figure 2. Classification of "homework requirement at study abroad institution" by home institution of respondent.**

However, European DETECT students who participated in "study abroad" also pointed to their perceived difference of the use of "self-directed learning" between European and US institutions.

This can be seen from the responses summarised in figure 3 below.

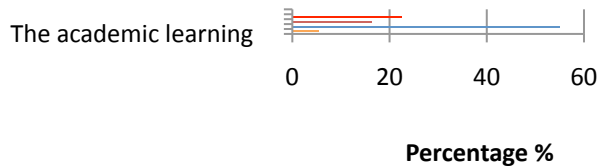


**Figure 3. Classification of "Self-Directed Learning at study abroad institution" by home institution of respondent.**

European students believed there was less "self-directed learning" in US programmes. The comments of some European students on the US learning environment were as follows: "[m]aterial is presented like a step-by-step guide on what to do" and "[l]ess emphasis on encouraging students to be creative / solve problems on their own" and "[l]ess focused on an individual learning how to learn and research, and more on learning specific things" and "there was less individual learning as in you are always told what you have to do". By contrast, after reflecting more on his/her study abroad experience, one US student commented that his home institution could provide "more opportunity to learn on your own and not be given busy work".

It was clear also from the study [6] that academic learning was not perceived as the most valuable learning of the programme. More than 58% of the respondents saw the core value as being in the skills and competencies developed by having to experience and adapt to a different culture. This is highlighted in figure 4 below.

**Overall, which of the following component of the study abroad experience do you perceive as having been most valuable in terms of its effectiveness in developing the skills, attitudes and behaviours required by the 21st Century engineer/technologist?**



**Figure 4. Respondents' perception of the most valuable component of the study abroad experience.**

### 3.3 Academic Management of the Programme

This section provides the students' perspective on the academic aspects of the programme. For conciseness we provide abbreviated comments from H-DA mobility students and Purdue mobility students.

Darmstadt students travelling to the US commented that they found their programme to be more hands-on, with more assessments required throughout the semester. Specific quotes from H-DA exchange students included: *"they have home works, weekly tests, weekly labs, midterm exams and a final exam, compared to just one final exam at the end;"* *"[v]ery focused on learning things by heart"* (not so many underlying principles); lecturers had *"more interaction with the students"* and that *"the courses are smaller (30 people compared to 120);"* and that their US programme compared to H-DA was *"[v]ery lab oriented (again less theory and more focus on practical applications)."*

Purdue students travelling to Europe echoed these differences but from their own perspectives. Specific quotes from Purdue students included: *"Our curriculum at Purdue is based heavily on lab work, whereas at Hochschule Darmstadt there was little to no lab work;"* that *"DIT focused more on the theoretical aspects of my classes, while Purdue was more hands-on"*. Purdue students in Europe commented that they found *"[n]o homework, quizzes or projects - just one test"* but also that European institutions were *"more concerned that I learn the concepts than with making deadlines and completing work examinations and grading format."* In Europe there were *"[l]ess organized lectures which covered much less material in the semester, focused on 3-4 main topics while at Purdue, we would focus on 6-9 main topics in a semester."* *"One particular lecture at Hochschule Darmstadt lasted 5 hours, once per week. This would be highly unusual at Purdue;"* and that *"[l]ectures were longer and less stimulating."*

By way of a summary relevant to the academic aspects of the programmes it should be noted that students and faculty alike have confirmed the substantive nature and quality of the programs and instruction at each partner university. Clearly this began by selecting collaborating institutions of a similar nature, value system and mission in addition to being of high ranking in their respective countries quality hierarchy. The use of laboratories, instructional equipment, industry involvement all speak to this shared value system. Flexibility, not only on the part of institutions, programs, and faculty, but also on the part of the participating students contributed to the success of the exchanges.

## 4. INDEPENDENT PROGRAMME EVALUATOR PERSPECTIVES

In this section we present summary findings of the programmes' third party evaluator, Barnes Technologies International, LLC (BTILLC). This section provides an independent perspective of the factors that make exchange and study-abroad programmes in engineering and technology fields successful.

BTILLC collected data using a pre-post, mixed model design to conduct its process and outcome third party evaluation of the Atlantis DETECT Project. Data measuring student perspectives were collected via surveys and interviews. Direct observation of project activities and document review processes were used to create programme component descriptions.

### 4.1 Student Measures

The following definitions of student measures were used for evaluation purposes.

**Expectations** – Summary of student remarks describes what they wanted to gain from the exchange experience and the degree to which those expectations were met.

**Learning Gain** – Programme design descriptions and student responses measure the degree to which the students met academic goals and the factors associated with their learning environment.

**Language Gain** – Data capture student perspectives on using a non-native language to live and study in another country and other measures of language proficiency.

**Cultural Sensitivity** – Summary of student comments describes the degree to which the students' global awareness and appreciation changed as a result of the exchange experience.

**Transfer of Knowledge** – Student comments provide evidence of the change in behaviour that occurred during the exchange experience.

### 4.2 Student Perspectives

The table below provides a summary of student perspectives on their exchange experience before departing on their semester abroad, during their semester abroad and after their exchange had completed.

**Table 1. Summary of Student Perspectives on the Exchange Experience**

	Before Exchange	During Exchange	After Exchange
Student Expectations	<p>To learn new life skills from people of different cultures.</p> <p>To learn about another educational system.</p> <p>To be exposed to a different perspective on some of the engineering topics.</p> <p>To meet people from all over the world and form long lasting relationships with the students from the host institution.</p> <p>To be challenged in a new academic environment.</p> <p>To live in a big city, such as Dublin, a big change from small town Indiana life.</p>		<p>All expectations were realized – a great experience.</p> <p>Students were able to spend some time living in another culture.</p> <p>Students learned a lot about the other cultures from international students from all over the world.</p> <p>Students improved foreign language skills and learned how another country’s college system works.</p>
Learning Gain	<p>Courses were aligned so that students would not lose credits or add to the number of semesters to complete degree requirements.</p>	<p>Hosting faculty were very friendly and helpful.</p> <p>Students felt that the course content was appropriate and fit well with the home programme of studies.</p> <p>Students had some difficulty transitioning to a different educational system.</p> <p>Lecturers knew their subjects very well and explain everything in a precise and logical manner.</p>	<p>All students studying at DIT or H-DA successfully completed their ECTS requirement.</p> <p>All students studying at PU or PSU successfully completed their course requirements.</p>
Language Gain	<p>Students from H-DA did not have any languages concerns; they all had adequate English speaking ability</p> <p>PU and PSU students studying at H-DA took a three week German course based on their entering language capability and once per week during exchange semester.</p>	<p>United States students had to write a lot of technical papers for assignments. It took a little bit more time to write in German, but everything worked fine.</p> <p>Most students indicated that they did not have any problems speaking German for daily living or in coursework.</p>	<p>English skills were adequate before the trip to the United States, however, the exchange increased confidence in speaking the language.</p> <p>All students who exchanged at H-DA successfully passed their German exam.</p> <p>The exchange programme definitely helped to improve language skills.</p>
Cultural Sensitivity	<p>Students had some anxiety about studying in a foreign country.</p> <p>Students were not well-informed of the history, economy, or culture of the exchange country.</p>	<p>Students travelled extensively during the exchange, either with classmates, roommates, or other international students.</p> <p>Students soon felt comfortable living in a foreign country and interacting with local citizens.</p> <p>Some students studying at DIT and H-DA were initially uncomfortable using the public transportation system of their</p>	<p>Students benefited from specific experiences such as: meeting and interacting with people in another country, getting introduced to new sports, travelling to see the country, visiting Washington DC and exploring Smithsonian Museum, and learning in a new way.</p> <p>Students shared positive</p>

	Before Exchange	During Exchange	After Exchange
		exchange country.	comments about the overall exchange experience, addressing topics related to the benefits of learning a lot about another country and being able to not only visit, but live and experience everything. In general, students became more acceptant of other cultures after spending time living and studying abroad.
Transfer of Knowledge	Students hoped to learn new material from a different perspective.	Students report that courses in the exchange institution contain new topics and that the new skills and the coursework may help students to get better jobs. Students were intrigued by the fact that two apparently vastly different education systems could prepare students for the same professional degree.	Students expressed that their thinking has changed in regard to their options after graduation. Some expressed a desire to travel more. Students shared that they have more self-confidence and are able to think about problems from other perspectives.

### 4.3 Student Quotes

#### EU to US

*Well, I'm really glad that such opportunities exist and I would like to thank anyone involved in making this happen. I hope you guys will continue to promote international student exchange programmes as it is one of a lifetime experience not just for Europeans, but for Americans as well.*

*Lecturers know their subjects very well and explain everything in a precise and logical manner. The subjects fit well in the realms of what I would be learning back home. Laboratories somewhat relate to real world and explain things better than just theory crafting which was quite good.*

*I learned a lot about the American culture and from people all over the world that are international students, too. I have some new American friends and I enjoyed the time really. Further, I could improve my English skills and learned how the American college system works.*

*It was interesting to see the difference between American and German courses. The American classes are during the study time a lot of more work because of Quizzes or exams. Instead the pressure is lower at the end of the exams. I believe that the level and the efficiency between German and American classes are at the bottom line the same.*

#### US to EU

*I consider this experience the best thing that I have ever done, and I recommend it to everyone who has the opportunity to do so.*

*Every culture has different views on issues. But mostly there is no view which is right or wrong. I learned a lot about other cultures and I know that every culture has something lovely and interesting.*

*I feel that I am a much more globally cultured person now.*

*The best part of my experience was interacting with students from many countries and cultures.*

*It was interesting learning under a different educational system.*

*I was a part of a weekly 'international cafe' where I encountered students from all over the world. I learned how to communicate with people who speak different languages. We also discussed the subtle and absurd cultural differences.*

*Relationships formed. Trips home with Irish friends. Travelators. Discovering things about American culture I took for granted, like punctuality. But on the opposite side, learning how to slow down and take time for a cuppa tea. Finishing our last project in my group learning class and making it work.*

*I think the exchange programme is a good way for students to experience other culture and to interact with international students around the world.*

*This exchange Semester was one of my best Semesters in College. I had really a great time and learned a lot about America (people,*



culture, education, jobs, life). I liked it so much that I applied for an internship in America but I couldn't get one.

I think every student should do a Semester abroad. In our global economy It is really important that everybody is fluent in English. Further such a Semester is very important not only for the language, it is also very helpful for your personality. If I had the chance to go again I would do it but not only one Semester©

I just had an amazing time and feel I gained so much from it I wish it wasn't over.

Well, I'm really glad that such opportunities exist and I would like to thank anyone involved in making this happen. I hope you guys will continue to promote international student exchange programmes as it is one of a lifetime experience not just for Europeans, but for Americans as well.

Appreciate all the labs that we have, because over here it's all about the lectures and one project and not about the hands on aspect of the ideas.

## 5. PROGRAMME MOBILITY

Mobility is one of the root causes for the success of the exchange programmes and for the wider uptake of collaboration across the participating institutions. The authors refer here to both student and faculty mobility. It should be noted that the described collaboration and exchange began not with a funded project but rather with several institutions each prioritizing the need for international collaboration in their academic and strategic plans. Pursuant to this, each institution invested its own money to support outreach initiatives primarily through faculty mobility. It was such an investment that led to the contact between Purdue and DIT and between DIT and the Hochschule Darmstadt. Subsequently collaborating faculty across the four institutions generated two successful Atlantis proposals that supported the activities described in this report. To date, more than forty faculty have exchanged across the Atlantic for periods ranging from a few days to semester long exchanges. Guest lecture, joint projects, familiarization, planning, formal signings, have all occurred via these exchanges. There have been Fulbright scholar and Fulbright senior specialist exchanges, Presidential and Dean visits, collaborative research development workshops and colloquia and more. Project investments have varied from small ones to a more typical \$2000 per week (total) but institutional investments have been considerably higher.

Upon completion of both projects, 48 undergraduate students will have exchanged (24 across the Atlantic in each direction). A similar number of graduate students will have exchanged also. Student mobility funding was stipulated by the funding agencies to be 5000 (Euro or Dollars) for the undergraduate exchanges and 6000 (Euro or Dollars) for each graduate student per semester.

Table 2 provides a breakdown of student movement under DETECT.

## 6. PROGRAMME SUSTAINABILITY

In this section we discuss the sustainability of the programmes from the perspectives of funding, administration, academic relevance and student engagement.

An initiative led by DIT is underway whereby each partner institution is being challenged to provide matched internal funding to ensure the sustainability of the DETECT project. This initiative has been well received and is currently under consideration by the Engineering/Technology Dean's at each institution. In addition, external funding sources have been sought. For instance, in the US, Project DETECT co-PI Michael Dyrenfurth met with Matt McKillip [COT Director of Corporate & Research Relations] to discuss the project's sustainability via corporate and other donor support. At DIT, Dr. Mike Murphy has shared the outputs of the project to date with the CEO of the DIT Foundation, an organisation that encourages philanthropic support for initiatives at DIT. This was done to determine if additional support for student can be forthcoming and to date, very positive feedback has been received.

**Table 2. DETECT Funded Student Mobility Statistics: January '08 to June '11**

<b>Sending Institution</b>	<b>Receiving Institution</b>	<b>No. of Full Semester Student Exchanges Completed</b>
Dublin Institute of Technology	Purdue University	14
Dublin Institute of Technology	Pennsylvania State University	4
Hochschule Darmstadt	Purdue University	3
Hochschule Darmstadt	Pennsylvania State University	3
Purdue University	Dublin Institute of Technology	10
Purdue University	Hochschule Darmstadt	3
Pennsylvania State University	Dublin Institute of Technology	4
Pennsylvania State University	Hochschule Darmstadt	3

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The senior leadership of both DETECT lead organisations are committed to sustaining the partnership beyond the period of the Atlantis grant. As evidence of this commitment, in September 2010 at DIT, Dr. Dennis Depew, Dean of the Purdue University College of Technology and Dr. Don Buskirk, College of Technology's International Programme Officer met in Dublin with Dr. Brian Norton, President, and Dr. Mike Murphy, Director and Dean, College of Engineering & Built Environment, DIT with the aim of planning for the longer term sustainability of this project. It was planned then that a Memorandum of Understanding between the two organisations which pre-dated the DETECT project but had been supported by the Project would be renewed for a period beyond the DETECT grant. Subsequently, Professor Brian Norton (DIT President) and Dr. Mike Murphy (DIT Director and Dean College of Engineering & Built Environment) visited Purdue in early 2011 to sign this agreement and discuss future partnership opportunities.

Evidence of the success of these projects can be seen that recently Dean Gary Bertoline, Purdue College of Technology's new dean succeeding Dean. Dennis Depew, and Dean Mike Murphy have affirmed their commitment to continue the exchanges by each investing 20,000 of their resources per annum for the next three years to sustain the initiative.

## 7. CONCLUSION

This paper has presented a very successful Atlantis mobility programme. Throughout, key student perspectives have been provided on various aspects of the programme. These perspectives have come from students from all four partner institutions, and included pre- and post-mobility student comments. The paper concludes with one more such positive comment:

*"My stay in Ireland has been the best time in my life, honestly, and I was lucky to have such a caring advisor/lecturer take care of things for me along the way. I will have nothing but great things to say about Ireland and DIT to the lecturers and my advisors at Purdue University".* Michael Tuccori, Purdue Computer Networking Technology Junior (3<sup>rd</sup> year) Student who undertook full-semester exchange at Dublin Institute of Technology during Spring 2011.

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