The International Propagation Partner’s Program

Abstract:
The following document presents an overview of the Propagation Group’s International Propagation Partner (IPP) program. The program has been very successful and productive, enjoyed by all the participants. Note: It is a requirement of the Propagation Group that all US-born PhD students spend 1 term overseas before completing the dissertation.
Current **IPP Institutions**

Current laboratory members include:

- **Sampei Laboratory, Osaka University** (Osaka, Japan)
- **University of Auckland** (Auckland, NZ)
- **Morinaga Laboratory, HIU** (Hiroshima, Japan)

*Map of the IPP laboratories.*

Other study-abroad universities have included:

- **Politecnico di Torino** (Torino, Italy)
- **Munich University** (Munich, Germany)
- **Georgia Tech Lorraine** (Metz, France)
List of IPP Participants

The relationship with University of Auckland began with Prof. Sowerby’s first sabbatical to Virginia Tech in 1997, where he met a very green graduate student named Greg Durgin. Numerous visitations ensued, resulting in research collaboration in the areas of frequency-selective surfaces and radio channel sounding/modeling.

Prof. Kevin Sowerby
This native New Zealander is a key member of a prolific laboratory that studies physical-layer wireless issues. Visits to Georgia Tech: numerous

Visits to Georgia Tech:
December 2006

Prof. Michael Neve
This Kiwi is an expert in radio wave propagation, writing seminal papers on the application of diffraction theory to propagation modeling. Stay at Georgia Tech: December 2006

Prof. Gregory D. Durgin
Director of the Propagation Group.
Stay at U. of Auckland: January 2007

Short-Term (~2 weeks)
UofA Student Visits:
Ulric Ferner (06)
Robin Chiang (08)
Salim Namik (08)
Andrew Austin (08)
Ljiljana Simic (09)

Ryan J. Pirkl
Student researcher studying spatio-temporal channel modeling and measurement. Visit to U. of Auckland: February-April 2008

Matthew S. Trotter
Student researcher studying energy-harvesting communications. Visit to U. of Auckland: March-April 2011

Matthew S. Trotter
Student researcher studying energy-harvesting communications. Visit to U. of Auckland: March-April 2011
The relationship with Osaka university began with Prof. Durgin’s 2001 postdoctoral fellowship at Morinaga Laboratory. The relationship continues to this day with numerous professional and personal exchanges. The key research focus is collaboration in various multiple-antenna radio systems for the development of new wireless applications.

**Prof. Gregory D. Durgin**
ダーギングレージグ
Post-doctoral fellow in Morinaga Laboratory researching MIMO channel models.
Stay at Osaka University: March 2001 to March 2002

**Kazunari Yokomakura**
横枕 一成
Sampei Laboratory PhD student studying multiple-transmit, multiple-receiver antenna systems for wireless communications.
Stay at Georgia Tech: June 2006 through August 2006

**Joshua D. Griffin**
グリフインヅヨーツユ
Student researcher studying multiple antenna systems in backscatter radio links.
Stay at Osaka University: August 2006 through October 2006

**Joel T. Prothro**
プロースロヴョール
Student researcher researching how fabrication materials influence RF tag links.
Stay at Osaka University: August 2006 through October 2006

**Haruka Obata**
小畑 晴香
Sampei Laboratory PhD student studying MIMO channel models for wireless communications.
Stay at Georgia Tech: August 2007 through September 2007

**Prof. Seiichi Sampei**
三瓶 政一
Director of Sampei Laboratory at Osaka University.
Stay at Georgia Tech: August 2007
The relationship with Hiroshima International University (HIU) began with Prof. Durgin’s sensei from Osaka University, Prof. Morinaga, retired from his senior faculty position and became department head at the fledgling HIU. HIU has built a world-class undergraduate and graduate program in information sciences and engineering virtually overnight.

Prof. Gregory D. Durgin
ダーギングレージグ
Friend of several HIU faculty, Prof. Durgin has visited HIU on several occasions.

Joshua D. Griffin
グリフィンツョーツュ
Student researcher studying multiple antenna systems in backscatter radio links. 
Visit to HIU: October 2006

Masayuki Enomoto
榎本 政幸
Graduate Researcher at HIU researching the application of propagation modeling to antenna array systems. 
visit to Georgia Tech August-September 2007

Masaaki Yamanaka
山中 仁昭
Instructor at HIU studying antenna array systems for next-generation Wireless.
visit to Georgia Tech August 2007, 2010

Joel T. Prothro
プロースロツョール
Student researcher researching how fabrication materials influence RF tag links. 
Visit to HIU: October 2006

Kunihiro Ishida
Graduate Researcher at HIU researching the application of antenna arrays to secure wireless systems.
visit to Georgia Tech August-September 2010

Other Notable Study-Abroad Programs

Christopher S. Valenta
Student researcher studying 5.8 GHz Backscatter modulation sensors. 
visit to Munich University and Politecnico di Torino during 2009-2010 academic year

Santiago Hassig
Student researcher studying microwave energy-harvesting. 
Completed MSEE in Georgia Tech Lorraine campus 2010-2011
Frequently Asked Questions (FAQs) About IPP

1) What is the IPP Program?
The International Propagation Partners (IPP) program facilitates study-abroad and exchange programs for the students and faculty of the Georgia Tech. The goal of the IPP program is to increase the competitiveness of Georgia Tech graduate students by exposing them to international research collaborations.

2) What is unique about the IPP Program?
IPP consists of several international laboratories that have close historical ties with the Georgia Tech Propagation Group. The program has three key distinguishing features:

- **Continuity** – Emphasis is placed on continuing exchanges with a select group of key international laboratories in the IPP network.
- **Reciprocity** – IPP laboratories match visits by US students with visits to Georgia Tech by citizen students from their own institutions.
- **Long-Term Stays** – Emphasis is placed on 3 month (1 term) stays by students. Unique to the Propagation Group, all PhDs must study abroad for 1 term before completing the degree.
- **Challenging, Exotic Locales** – IPP network laboratories include prestigious, Pacific institutions in countries like New Zealand and Japan.

3) Why study overseas?
Student research exchange programs increase the recognition of the excellent research that is conducted overseas, provide an international venue for promoting a student’s and institution’s own research, and prepares graduates for the increasingly global nature of engineering research and development. The experience can also be tremendous fun when conducted in an interesting country which good hosts. Some graduate students even find they have their most creative and productive research outputs while overseas.

It is highly beneficial to experience engineering and research in a foreign culture and setting. US engineers, in particular, will be working alongside peoples from all over the world – even if they never leave North America during their careers!
4) What does IPP provide for Georgia Tech students who study abroad?
IPP will help students arrange the following:
- An international research plan for the collaborative visit
- Placement in an international laboratory with foreign mentorship
- Assistance in the acquisition of travel funds
- Inexpensive accommodations for the duration of the trip
- Orientation information for the traveling students
- Paperwork and documentation for conducting research overseas

5) What does the Georgia Tech Propagation Group provide for faculty and students from IPP network laboratories who wish to visit Georgia Tech?
IPP will help international students and faculty can arrange the following:
- Facilities for conducting research during the visit
- Letters of support for overseas research funding agencies
- Inexpensive accommodations for the duration of the trip
- Orientation information for the visit
- Various legal and immigration assistance

6) How are exchanges for Georgia Tech students funded?
Funding opportunities are varied, depending on the destination, proposed project, and timing. Current and past sponsors include:
- Propagation Industry Partnership and Enterprise (PIPEs) program
- National Science Foundation
- Japanese Society for the Promotion of Science
- European Union/US State Department Fellowship
- Other Targeted Industry Donations
Contact Prof. Durgin (durgin@gatech.edu) for information about current opportunities.