Maryland's IGERT Program in Language Science

Summary of Activities and Outcomes (Year 3: 2010-2011)

Introduction and Executive Summary

Our IGERT program in Language Science ("Biological and Computational Foundations of Language Diversity") is at the end of its 3rd year. Funds should last for around 3 more years, so we are at the mid-point of the initial funding cycle.

Many aspects of the program are going very well indeed. Student participation is very good relative to other similar programs, both in terms of numbers, and in terms of student leadership. The program includes around 50 PhD students from 8 departments, and around 40 faculty from 10 departments and centers. Unusually for an IGERT program, around half of the participants are not receiving NSF-funded fellowships. Students are progressing through the program, moving outside their 'comfort zone' in many ways, and are building new partnerships. They are starting to graduate and secure good jobs. In the past year students have transformed the program through creation of an impressive organizational structure. They have now achieved 'ownership' of the program, an important component of successful IGERT programs.

Broader efforts to build a large and inter-connected language science community are starting to pay off. Around 160 researchers have been involved in program activities in some form in the past year, many more than last year. There is a growing sense of common purpose among the university's many language scientists. New faculty hires in a number of programs are already having impacts on interdisciplinary connections. Connections to the Center for Advanced Study of Language are noticeably stronger. Various programs have made excellent new faculty appointments in language science. We are also beginning see examples of impacts that extend beyond language science specifically, as students in other areas are inspired by the success and energy of language science students.

Many of the challenges identified at the 2010 Advisory Board meeting have been addressed. Student leadership has been strengthened and institutionalized. An 'apprenticeship' program for new students has been created. Various efforts have contributed to the 'decentralization' of the program away from Linguistics. A number of activities have helped to build awareness of interdisciplinary opportunities in language science. Plans are underway for how to build upon the success of the IGERT program to pursue more ambitious goals.

However, a number of challenges remain. Awareness and interest in interdisciplinary activities is uneven, and there continues to be a perception (partly justified, partly not) that language science is dominated by Linguistics. Close monitoring is needed to ensure that all students benefit, visibly so, from their interdisciplinary training. Substantial changes in the university administration, plus the fact that language science is spread across so many departments and colleges, means that it is particularly important to ensure continued understanding of goals and opportunities.

1. Participation

Student Enrollment

Highlight: 11 new student participants, Philosophy students join the program.

49 PhD students from 8 different departments are formally connected to the IGERT program in some way, either by submitting a full application, or by applying to be a program affiliate. Of these, 36 have submitted full applications, and all but 2 are actually following through on their plans.

Department	Full (NSF fellows)	Affiliates
Computer Science	1 (1)	0
Electrical Engineering	1 (1)	0
Hearing & Speech	1 (1)	3
Human Development	1 (1)	5
Linguistics	21 (10)	2
Philosophy	2 (1)	1
Psychology	2 (2)	0
Second Lang. Acq.	7* (1)	2
TOTAL	36 (18)	13

* Of the SLA students who submitted full applications to the program, 2-3 are not active in the program.

The number of students is unusually large for an IGERT program.
Challenges: Linguistics has the largest group of language science students within one academic unit at the university (around one third of the total), so a higher participation rate is to be expected. However, even after taking this into consideration, Linguistics is over-represented among student participants.
Important: this is an observation about raw numbers, not about the contributions of individual students. Students from a number of departments are highly active in the program. But in terms of active participation, the other departments are not represented proportionally to the number of students in each program.

Faculty Involvement

Highlight: new faculty hires are already having an impact.

41 faculty are involved in the program in some fashion (including some new hires starting in 2011; *see separate document summarizing participation*). The faculty represent 10 departments and the Center for Advanced Study of Language and the National Institutes of Health.

Around 25 faculty are involved in mentoring IGERT full participants or affiliates, either as a primary or secondary mentor, or as the sponsor of a research rotation.

Many faculty have taught IGERT courses, given research talks at Winter Storm or the IGERT Lunch series, or have served on the Faculty Executive Committee.

However, there are rather uneven levels of involvement and 'buy-in' to cross-departmental activities. Most IGERT activities have been coordinated by a core cluster of Linguistics faculty, with support from a small group of faculty from other departments who are closely engaged. Long-term success will depend on significantly broadened leadership in language science initiatives.

2. Student-led Activities

Highlight: student organization and student-led activities have been outstanding.

2.1 Language Science Day (new event: September 2010)
Student Committee: Shevaun Lewis (LING), Giovanna Morini (HESP), Sunyoung Lee-Ellis (SLA), Pedro Alcocer, Shannon Barrios, Alexis Wellwood (LING)

In September 2010 students from the IGERT program organized *Language Science Day*, the first of what we hope will become an annual event. The goal was to make the university's language scientists aware of their broad community, to showcase diverse research activities and opportunities, to make students aware of training possibilities, and to jump-start potential interdisciplinary connections. The event also aimed to identify new language scientists to add to our mailing lists, and potential new student recruits for the IGERT program. The event covered all areas of language science, including cognitive, computational, engineering, clinical, theoretical, philosophical, biological, and educational approaches. It consisted of a lunch mixer, a couple of overview presentations, and a poster session. It was held at the Clarice Smith Performing Arts Center, and was followed by a dinner and party at the home of Colin Phillips and Andrea Zukowski.

The event was very well received. There were around 120 participants from 11 departments, programs, and centers. The interest in the event was so high that organizers had to turn away some potential participants. Around two-thirds of invitees and a slightly lower proportion of participants were from departments other than Linguistics

Language Science Day was sponsored jointly by the IGERT program, by the Center for Advanced Study of Language (CASL), and by the Department of Linguistics. Planning has begun for Language Science Day 2011.

2.2 Winter Storm
Student Committee: Giovanna Morini (HESP), Derek Monner (CS), Alex Drummond (LING), Susan Teubner-Rhodes (PSYC/NACS), Sol Lago (LING), Candise Lin (EDHD), Megan Sutton (LING), Dan Parker (LING)

Winter Storm remains one of the signature activities of our IGERT program. It is an intensive workshop that meets all day, every day for 2 weeks in late January, immediately preceding the Spring semester. It is open to all students and faculty. In 2011 Winter Storm was coordinated by a committee of 8 students from 5 departments, led by Giovanna Morini from HESP. Around 100 students faculty from 13 departments or research centers participated in some or all of Winter Storm. This year participants included a team of visitors from Korea, who are trying to create a similar interdisciplinary community in Seoul, and a group of 6 students from Gallaudet University's VL2 NSF Science of Learning Center (it is a distributed center, so the students came from labs around the country).

Based on last year's feedback, the student committee held an in-depth course on computation and statistics using the *R* package throughout the entire duration of Winter Storm. This took place every morning, and was led by students Ewan Dunbar and Alex Drummond (LING). Daily lunch talks featured a diverse set of language science faculty, and highlighted new faculty hires. Students cooked lunch each day for the talks – 16 students contributed to this effort. Afternoon sessions were devoted to meetings of Special Interest Groups and 4 professional development sessions, led primarily by recent graduates or new faculty. Students also organized a party and a happy hour to encourage informal networking.

Winter Storm has been so successful that there is now a concern that its size could interfere with its success.

Much information on the Winter Storm workshops can be found in the wikis that students created as a repository for all WS activities: http://www.languagescience.umd.edu/wiki.

2.3 Outreach Activities
Student Committee: Erika Hussey (PSYC), Yakov Kronrod (LING), Candise Chen (EDHD), Sunyoung Lee-Ellis (SLA), Shannon Barrios (LING), Annie Gagliardi (LING), Alex Drummond (LING), Anna Lukyanchenko (SLA), Jeff Lidz (LING, faculty advisor)

- *Northwood High School:* we organize two activities per year with Northwood High School in Silver Spring, a school with 65% minority enrollment. The main connection is with the AP Psychology curriculum, but the broader aim is to use language science as a model of how a field is relevant *across the curriculum*. Jeff Lidz has given three talks at NHS, most recently to ~150 students. The student Outreach Committee has organized successful half-day

workshops for NHS students at the university. In February 2011 this involved a visit by almost 100 NHS students, for whom IGERT students organized 10 different activities, focusing on different areas of language science.

- *SLRF pre-conference workshops*: Students from the IGERT program, together with Colin Phillips (LING) & Nan Jiang (SLA), organized an all-day series of methods workshops at the Second Language Research Forum (SLRF) conference, held in College Park in October 2010. Despite atrocious weather, the workshops were quite successful, attracting 150-200 participants.

  Workshop themes were: cognitive neuroscience: Colin Phillips (LING), Wing-Yee Chow (LING), Jeff Chrabaszcz (PSYC/NACS), Shannon Barrios (LING); memory & Language: Brian Dillon (LING), Erika Hussey (PSYC/NACS); analysis & visualization using R: Pedro Alcocer (LING), Ewan Dunbar (LING); working with children: Candise Lin (EDHD), Min Wang (EDHD); eye-tracking for language research: Jared Novick (CASL), Susan Teubner-Rhodes (PSYC/NACS), Shayne Sloggett (LING), Alan Mishler (CASL); E-prime & Praat: Annie Tremblay (Illinois), Sunyoung Lee-Ellis (SLA), Anna Lukyancheko (SLA)
  http://www.languagescience.umd.edu/wiki/SLRF2010

- *Maryland Day*: the IGERT program sponsored a tent organized by the infant studies group at this community outreach event for the university (90,000 attendees in late April).

The high school outreach has been very successful, and students have developed a series of effective activities, now stored on the program wiki. Graduate students have found it valuable to work together on developing accessible and engaging materials. We are now beginning discussions of how the outreach program might be extended.

2.4 Lunch talks
Student Committee: Susan Teubner-Rhodes (NACS/PSYC), Derek Monner (CS), Sunyoung Lee-Ellis (SLA), Ewan Dunbar (LING), Erika Hussey (NACS/PSYC)

In 2010-2011 the weekly 'IGERT Lunch' talks, were organized entirely by a student committee led by Susan Teubner Rhodes (PSYC/NACS). The goal of the series was the same as in previous years, students (and occasionally faculty) presented their research to a broader audience than they would normally speak to. This year we moved the talks to a new location on campus, in an effort to broaden participation and 'decentralize'. Typical attendance was still 30-40 people, and over the year, about half of the people who ever attended were from Linguistics, half were from other departments. But among regular participants, more than half were from Linguistics. Students organized lunch each each week, and the talks were consistently well received.
http://www.languagescience.umd.edu/wiki/LunchTalks.

Challenge: we still struggle to get a representative sample of attendees at the talks. Although the talks were moved adjacent to SLA, participation from that group remained limited. Concerns about scheduling that were raised last year were addressed through a survey, which showed that the existing time was the best.

2.5 Wiki pages
Student Committee: Pedro Alcocer (LING), Dan Parker (LING), Ellen Lau (LING, faculty advisor)

In addition to the new Language Science website (languagescience.umd.edu), students created a language science wiki site (languagescience.umd.edu/wiki) that is used as the primary venue for storing and coordinating information about activities, events, and shared methods expertise.

2.6 HESP Happy Hour Toolkit Series
Students and faculty from Hearing & Speech Sciences this year began a series of workshops designed to spread expertise in software and research applications commonly used in language related fields. These workshops are sponsored by the College of Behavioral and Social Sciences (BSOS), and are open to the entire language science community. Topics so far have included advances in using CLAN for coding child language data, and speech synthesis and scripting in PRAAT.

One notable benefit of these workshops is that they are an initiative for the language science community that is clearly not led by Linguistics. More information at the Language Science wiki, languagescience.umd.edu/wiki.
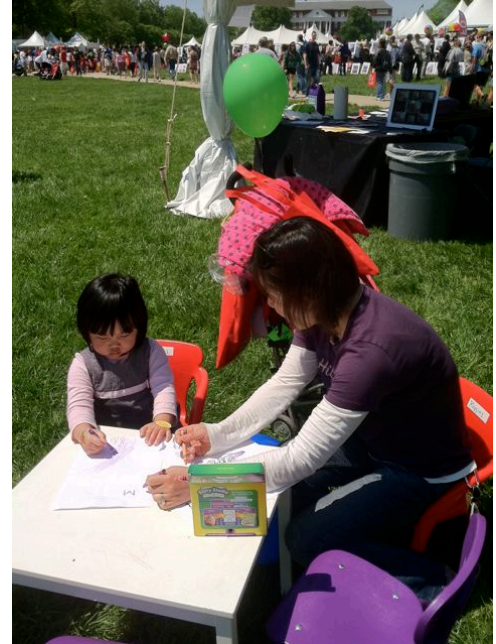
3. Programmatic Activities

3.1 New Courses

Highlight: Naomi Feldman's course proved a great success in facilitating discussion in the CS realm.

In the IGERT proposal we described a number of new courses. As of Spring '11 we have offered all of the new courses outlined in the proposal.

- Y3 (Fall '10): *Seminar on Infant Perception* (800-level, Rochelle Newman, HESP).
- Y3 (Spring '11): *Introduction to Computational Modeling of Language* (600-level, Naomi Feldman, LING). This new core course fills a critical need for foundational training in computational modeling. It is taught by Naomi Feldman, who fills a new position that was secured in connection with the IGERT award.
- Y4 (Fall '11): *Seminar on Language Production* (800-level, Bob Slevc, PSYC)
- Y4 (Spring '12): *Seminar on L1-L2 Language Acquisition* (800-level, team of faculty from SLA & LING). This course will aim to bring together experts on first and second language acquisition, in an effort to promote cross-talk between these areas.

Summary: our new course offerings largely meet the goals laid out in the IGERT proposal, but breadth of enrollment has not always met expectations.

3.2 Advanced Rotations

Highlight: the rotations have proven to be more difficult to implement than expected; they will need slight restructuring.

As a part of the program's expectation that students' training take them 'outside their comfort zone', students carry out an 'advanced lab rotation'. We require this for NSF-funded fellows; and encourage it for other full participants. The second cohort of IGERT students is currently going through this process. The Faculty Executive Committee has established criteria for approving rotation plans: students should (i) move 'outside their comfort zone', and (ii) move outside their home department. If one of these goals is not met by the rotation, then it should be met by another aspect of a student's training.

These projects are at varying stages of development

- NSF Fellows, Cohort #2
  Erika Hussey (PSYC/NACS): gene splicing with Steve Roth (KNES), investigating genotype differences that underlie cognitive control
  Dave Kush (LING): language and memory with Bob Slevc, PSYC
  Giovanna Morini (HESP): electrophysiology and memory in children with Tracy Riggins, PSYC
  Shannon Hoerner (LING): speech perception in bilinguals, with Nan Jiang, SLA
  Pedro Alcocer (LING): advanced electrophysiological tools with Jonathan Simon, Elec. Eng.

- Full participants, other funding
  Alex Drummond (LING): computational linguistics with Hal Daumé, CMSC
  Ewan Dunbar (LING): analyzing neural recordings from ferret auditory cortex with Jonathan Fritz and Shihab Shamma, Elec. Eng.
  Wing Yee Chow (LING): lexical processes in second language acquisition with Nan Jiang, SLA
  Shevaun Lewis (LING): rotation delayed
  Suzanne Freynik (SLA): no rotation; works on various CASL projects

Summary: the goals of this program requirement are being met in part. But there are some concerns about how consistently students undertake the rotation, and about the 'deliverables' that result from these activities. Need for more planning, monitoring, earlier initiation.

3.3 Student Committees (new this year)

Highlight: student leadership transformed the program.

Following the challenge from the 2010 Advisory Board meeting, students organized themselves into a highly effective series of committees, which coordinate major program activities. A Student Executive Committee works in close connection with the Faculty Executive Committee.

Challenges: the student organization this year was remarkably successful, and showed leadership from students in a number of departments. Maintaining this momentum will not be trivial.

3.4 Student Collaborations

Highlight: A number of new cross-departmental student collaborations have been formed as a result of the program.

- *Computational models of critical period effects*: emerged from a research group at Winter Storm 2009. Led by Derek Monner (CompSci student) and Robert DeKeyser (SLA faculty), with student collaborators from HESP and LING. Abstract submitted to SLRF 2010 conference.
- *Ferrets & Phonemes*: emerged from a research group at Winter Storm 2010. An entirely student-led project, bringing together students from Elec Eng., Linguistics, Biology, CompSci. Aim is to use a combination of linguistic and machine learning expertise to analyze patterns of neuronal activity to speech sounds recorded directly from ferret auditory cortex.
- *Memory & ERPs ('MERP')*: emerged from a research group at Winter Storm 2010, involving 3 LING and 1 HESP student. Focus is on better understanding striking parallels between ERP findings in the memory and language literatures, which apparently have been rarely discussed previously.
- *Cross-linguistic Event Perception*: emerged from Woodward/Lidz IGERT seminar, led by Sunyoung Lee-Ellis (SLA) and Shannon Hoerner (LING). Investigates Korean Heritage learners' categorization of spatial relations that are expressed differently in the two languages. [See 'highlight' piece in 2010 NSF Annual Report.]
- *Developing Eye-tracking Infrastructure*: cross-department student teams have collaborated on establishing the two new eye-tracking labs supported by the IGERT. *EyeLink* eye-tracker for reading studies (PSYC & LING & CASL collaboration). *ASL Remote* eye-tracker for visual world studies with children and adults (HESP & LING collaboration).
- *Bilingual and Heritage Learner Perceptual Training*: emerged from Winter Storm 2011, involving faculty and students from HESP, SLA, LING, and EDHD. Aim is to test whether heritage learners who exhibit loss of native language perceptual sensitivity would show an advantage in 'reviving' their native abilities in a training study.

3.5 New Symposia Sponsored

Highlight: Second Language Research Forum pre-conference workshops (150-200 participants)

We proposed to sponsor symposia at leading disciplinary conferences that showcase the value of interdisciplinary language research. The goal of these symposia is to take the message of our program to a broader audience. We have already organized four such workshops.

- 2008-2009: Linguistic Society of America (San Francisco), symposium on 'Psychosemantics of natural language quantifiers'; organized by Jeff Lidz
- 2009-2010: International Society for Infant Studies (Baltimore), symposium on 'Statistical inference in infant language acquisition'; organized by Bill Idsardi and Jeff Lidz
- 2009-2010: Maryland Mayfest (College Park), workshop on 'Linking language acquisition and language typology'; organized

by Linguistics graduate students
- 2010-2011: Second Language Research Forum (College Park), workshop on psycholinguistic methods in SLA; organized by Colin Phillips, Nan Jiang, and many students

3.6. Internal Assessment

Highlight: comparing focus group results from new and graduating student reveals how the program changes student perspectives on interdisciplinary research.

NSF requires all IGERT programs to engage in a formative assessment process, in order to monitor program progress and to identify strategies for improvement. Our internal assessment is carried out in coordination with the University of Maryland's Office of Institutional Research, Planning, and Assessment (IRPA), under the direction of Sharon La Voy and her graduate assistant Jill Jones.

New this year:

- Faculty focus group - May 2010
- New student focus group - September 2010
- Graduating student focus group - January 2011, similar questions to the new student group, to aid comparison
- Annual Winter Storm survey - January 2011
- Ongoing process to develop qualitative and quantitative measures of program outcomes, developed by a team of students and faculty. This includes surveys, plus attempts to use computational tools from topic modeling to develop a quantitative measure of interdisciplinarity that could be applied to different areas (the *i-index*). Efforts to continue in Summer '11.

3.7 Creating Language Science Identity

Highlight: new language science website up and running; more improvements in progress in the form of a dynamic database of publications. 'Language Science' has a growing identity on campus.

This past year we focused on building a non-Linguistics centered website to reflect our view of the language science community: http://languagescience.umd.edu. Some enrichment of the content is still in progress. Students and faculty created various wiki pages in a highly collaborative manner. Email reflectors have been used for all events, reaching up to 160 language scientists at the university. These initiatives have helped to build a sense of identity and 'branding' for the language science community.

Challenge: it continues to be difficult to raise awareness of all that is happening in such a large community. Our efforts to convey that the community has strengths in many areas remain a work in progress – there are still many who perceive that language science at the university consists primarily of CASL (some people) or Linguistics (other people).

4. Recruitment and Application Process

Highlight: the new apprenticeship program created an improved gateway to the program for new students, and engaged experienced students in mentoring newcomers. Both of these ideas emerged from the 2010 Advisory Board meeting.

Unlike many IGERT programs, we recruit students to our program only after they are already enrolled in a U of Maryland PhD program. This approach has a number of motivations.

(i)   It allows students to get involved in program activities before they officially join the program, ensuring that students have a better idea of what they are getting into.

(ii)   It allows us to ask that students develop a detailed research and training plan in order to join the program.

(iii)   It reduces potential difficulties of assigning funding 'quotas' to departments, and increases commitment from students and their advisors or home departments, since they are relieved of a funding commitment that they had already made to the student.

(iv)   It allows students to reapply for NSF fellowships two years in a row, if they are not successful the first time around.

(v)   We still use the program as a recruiting 'carrot', but we can focus on the intellectual benefits of Maryland's broad language science community, rather than on the financial consequences. This is healthy.

We have, in general, been very satisfied with our use of this model. But some aspects need improvement.

4.1 Recruitment to PhD Programs

Our impression is that PhD student recruitment to participating departments has not yet been significantly affected by the presence of the IGERT program. Individual participating programs all face area-specific recruiting challenges, and we have seen little change in this in the past two years. The competition for admission is different across the participating programs, and we have not sufficiently leveraged our combined strengths to benefit recruiting.

Examples: in 2011 Linguistics received 150 PhD applications for a cohort of 6 students, of whom at least 4 will likely become IGERT participants. SLA had an unusually good recruiting year, with 7 new students expected. Some will have interest in cross-department activities, but most are international students, so are not eligible for NSF-funded fellowships. In some programs there have been strong new faculty hires, but there is a lag in the impact of this on student recruitment. (Context about participating programs can be found in the original IGERT proposal on pp. 38-44.)

This is an area that we targeted for improvement in Year 3. We made some progress in 'branding' and in on-line materials, but there is much to do to create broad awareness of the opportunities. This must continue to be a priority in Year 4.

4.2 Application Process

New this year: IGERT Apprenticeship

Students submit an extensive application before they join the program as full participants (see additional application document, and sample applications provided to advisory board in 2010). Applications are reviewed once per year, in the Spring semester. The structure of the application has remained largely unchanged over the 4 application cycles to date, but the review process has been improved in a number of ways.

Student applications consist of: (i) CV; (ii) transcripts; (iii) training plan [2 pages]; (iv) research plan [4 pages]; (v) outreach plan [1 page]; (vi) 2 reference letters; (vii) advisor commitment letter. Students who prepare an NSF GRF application in the fall have a head start in this process.

In the first years of the program, students received limited feedback or no feedback at all on their applications, but we have implemented a more structured process that provides students with reviews prepared by the Executive Committee, and that engages students in a revision process that aims to lead to better developed plans. For example, the committee may ask that students meet with specific additional faculty from other departments in preparing their revised proposal, or may ask that they provide further details on the feasibility of their research plan. The revision process is sometimes more valuable than the initial application process … perhaps unsurprisingly, since the same is often true of faculty grant applications.

Following discussions at the 2010 IGERT Advisory Board meeting, in 2010-11 we implemented a new IGERT Apprenticeship program for new students. This basically recognized students as full program participants, except that they had not yet completed a full proposal. Apprentices were encouraged to participate in program activities, including Winter Storm and outreach, and were given guidance on the application process. Apprentices were paired up with experienced students, who helped them with additional feedback on their proposals. We recognize that it can be daunting for a first-year PhD student to develop an extensive proposal, but we think that the improvements to this process have made it more effective.

5. Additional Student & Faculty Highlights

5.1 Student Highlights (cumulative)

- *Job placement:* Students involved in or closely related to the program have received a number of sought-after tenure-track positions. The 2010 haul was particularly strong, with most psycholinguistics positions in linguistics programs going to people trained at Maryland: Diogo Almeida (2009 – Mich St. U); Brian Dillon (2010 – UMass/Amherst); Ellen Lau (2010 – Maryland); Akira Omaki (2010 – Johns Hopkins); Matt Wagers (2008 – UC Santa Cruz); Ming Xiang (2010 – Chicago, Xiang was a UMd postdoc). Dillon is part of a multi-department 'cluster hire' in language science at UMass, a top linguistics department. He starts in Fall 2011.
- *Additional fellowships & awards*:
  o Candise Chen (Human Devt.): 2009 NSF-EAPSI award for research in China
  o Brian Dillon (Linguistics): 2009 NSF-EAPSI award for research in China
  o Annie Gagliardi (Linguistics): 2009 NSF Graduate Research Fellowship
  o Akira Omaki (Linguistics): 2009 NSF dissertation grant

- So-one Hwang (Linguistics): 2010 NSF dissertation grant
- Sunyoung Lee-Ellis (SLA): 2010 NSF dissertation grant
- Sunyoung Lee-Ellis (SLA): 2010 IGERT poster award ($3,000)
- Alexis Wellwood (LING): 2010 SSHRC (Canada) Graduate Fellowship
- Giovanna Morini (HESP): 2011 NSF-EAPSI award for research in Singapore
- Dustin Chacón (LING): 2011 NSF Graduate Research Fellowship
- Erika Hussey (PSYC): 2011 IGERT poster award ($1,000, so far)
- Yakov Kronrod (LING): 2011 AAAS Student Poster award
- Ewan Dunbar (LING): 2011 SSHRC (Canada) Graduate Fellowship

Faculty Highlights

- Despite a hiring freeze, the university made 6 new faculty appointments in language science in 2010: Jordan Boyd-Graber (iSchool – NLP, modeling), Hal Daume (CMSC – NLP, machine learning), Naomi Feldman (LING – computational psycholinguistics), Ellen Lau (LING – cognitive neuroscience of language), Elizabeth Redcay (PSYC – developmental cognitive neuroscience), Bob Slevc (PSYC – language production, language disorders).
- With the hiring freeze ended, the university continued to make strong new appointments in language science: Yi-Ting Huang (HESP – developmental psycholinguistics), Jeff MacSwan (Education – bilingualism and lanuguage education; senior appointment). It also made strong appointments in cognitive science of much interest to language science: Jonathan Beier (PSYC – developmental psychology, social cognition), Suzanne Jaeggi (PSYC – memory, plasticity, cognitive neuroscience).
- *Maryland Neuroimaging Center*. Construction is almost complete on a spacious new center for multi-modal neuroimaging, thanks to major investments from NSF and many university colleges. The effort was led by faculty from the interdepartmental Neuroscience and Cognitive Science program, with substantial involvement from language science faculty and CASL. The facility has around 8000 sq ft., a 3T MRI scanner was recently installed, and plans are underway to house MEG, NIRS, and EEG in the center. Grand Opening: September 20th, 2011.
- *AAAS*. Maryland's language scientists were strongly represented at this year's AAAS meeting. Amy Weinberg (CASL) led a language learning symposium and was featured in numerous media reports, including ABC News. Nan Ratner (HESP) organized a symposium on stuttering research. The timing of this event was impeccable, a week before *The King's Speech* swept major honors at the Academy Awards. Ratner was featured in countless media reports around the world. Yakov Kronrod (LING) won a student poster award. Colin Phillips (LING) gave one of the plenary lectures.
- Lanuage Science faculty have received university internal recognition for their efforts, as mentor of the year for undergraduates (Nan Ratner, HESP, 2010) or graduates (Jeff Lidz, LING, 2010; Colin Phillips, LING, 2011). Colin Phillips was also named as a Distinguished Scholar-Teacher.

5. Infrastructure and Organization

5.1 Program Staff

The Program Coordinator, Csilla Kajtar, works closely with the PI, Colin Phillips, and other faculty on all program activities, manages program finances, coordinates web development and information dissemination, is involved in all program assessment activities, NSF reporting, and serves as a consistent point of contact for students. For the upcoming year Csilla will focus on improving information dissemination and web presence, implementation of outcomes assessment measures, monitoring of student progress, and also contributing to building on the program's success through the Future of Language initiative.

Technical support for program activities has been provided by Phillips' full-time research assistant, whose salary is partially covered by program funds and university match. This year Shayne Sloggett has managed eye-tracker experiments, IRBs, research data backup, data collection for program reporting, etc. *Search currently underway for the Y4 RA.*

5.2 Faculty and Student Executive Committees

Highlight: program management greatly improved by addition of a Student Executive Committee

The current members of the Faculty Executive Committee (FEC) are 3 of the co-PIs on the project (Colin Phillips, LING; Jeff Lidz, LING; Rochelle Newman, HESP) and four other faculty (Min Wang, HESP; Jim Reggia, CMSC; Robert DeKeyser, SLA; Bill Idsardi, LING). A representative from the Student Executive Committee was invited to all of the meetings (Shevaun Lewis, LING and Giovanna Morinni, HESP both served this role). The committee has met monthly since Fall 2009.

The Faculty Executive Committee has focused on such topics as: (i) review of student applications to join the program; (ii) review of student progress through the program, e.g., shaping proposals for advanced rotations; (iii) formulation of program policies on courses, funding, etc.; (iv) discussion of strategies for broadening participation in the program; (v) planning for the advisory board meeting.

The Student Executive Committee (SEC) focused on coordination of many of the major events that the program runs. The SEC also provided feedback to faculty on student concerns and climate, and worked closely with program leadership on planning the Advisory Board meeting. Each of the Student Executive Committee members is the leader of one of the specific student committees. The group meets at least monthly, and coordinates with the Faculty Executive Committee.

Challenges: faculty leadership in the program needs to be broader, and the breadth needs to be more visible. Students now have the impression that they organize everything. Faculty have a different impression. There is a need for improved understanding.

5.3 Funding Sources

Highlight: there were several instances of co-sponsorship of events and students, e.g., Second Language Research Forum, research at Gallaudet, and Language Science Day.

Although the primary source of funding for the program comes from the IGERT grant itself, our ability to support a far broader network of participants relies on many additional sources of support.

- Around 5 new students each year can be supported directly by 2-year NSF fellowships. These are extremely generous fellowships ($30k/year), particularly by the standards of some of our participating programs. We anticipated that this might create problems, but these have not materialized (in most cases).
- The College of Arts & Humanities has provided supplemental funding for international ARHU students (i.e., LING, SLA, PHIL) who are full participants in the program.
- A number of students in the Linguistics program hold Graduate School Flagship Fellowships, these are generous and highly competitive supplemental funding awards that are made to around 10 new graduate students across the entire university each year. By not taking NSF-IGERT fellowships, these students have allowed us to support additional students with NSF funds.
- CASL is an important source of student funding, particularly for students in SLA. This funding does, however, come with significant somewhat-off-campus responsibilities, which can make it more difficult for those students to fully engage in program activities.
- In our initial application the College of Behavioral and Social Science promised additional support for HESP students who participate in the IGERT program (support for PhD students in HESP is a chronic difficulty). We hope that this support will materialize in the not too distant future.

We have tried very hard to get students interested in participating in the program for intellectual reasons, rather than for monetary reasons. This has been only partly successful. In some programs we see significant participation from non-funded students, but in others only the NSF-funded students are active. (In all cases this must also be scaled against the number of potential language science students in each program.)

6. Future of Language

Our aim for the IGERT program was always to use it as a catalyst for broader integration and initiatives in language science at Maryland. We have recently begun a new process that aims to build upon our existing successes by developing plans for how to move our activities to the next level. The current working group includes representatives from 8 different departments or centers at the university. A session at the advisory board meeting will be devoted to this initiative.