

Maryland Language Science Center Fellows Program

2014 Guidelines for Applicants

Deadline for receipt of applications: Thursday, March 27th, 2014

Benefits of Participation

For students

- engage in innovative interdisciplinary training guided by the best faculty experts in the area
- develop research skills not normally available in a single department
- participate in collaborative research
- learn to communicate with diverse groups, and contribute to scientific outreach
- develop leadership skills through student-led initiatives
- succeed by support from a strong peer network
- benefit from funding for research and travel
- be an integral part of the largest language science community in North America, a University of MD priority area

For faculty/departments

- cutting-edge training enhances students' career prospects
- professional development activities help students' presentation and communication skills
- students can bring new expertise to the home department
- student projects can foster lasting cross-department collaborations
- access to additional funding for research and travel
- enhances department visibility and supports recruiting outstanding students
- improves department's ability to compete for new grants, gifts, etc.
- be an integral part of the largest language science community in N America, a U of MD priority area

General Information

The program

The Maryland Language Science Center is announcing the new Language Science Center Fellows student-training program that builds on the successes of the NSF-IGERT program in language science. The Fellows program offers students the environment and support to become interdisciplinary scholars of language, and helps students develop into adaptable researchers ready to meet the challenges of the current job market. The Fellows program is committed to supporting students throughout their PhD career towards a successful completion of their PhD.

The program's main goal is to strengthen the language science community at the University of Maryland by offering students and faculty venues and resources for interdisciplinary training and collaborative research. The program will offer a variety of forms of support for US and international students alike.

Eligibility

Application is open to ALL currently enrolled U of Maryland graduate students in language science (although it is geared towards PhD students) who are able to pursue the program, regardless of citizenship, current funding status, advisor, or home PhD program.

Key Dates:

March 15	notify program via email of intent to apply
March 27	all application materials due – electronic submission only
From mid-April	admission decisions & funding commitments note that applications sometimes require revision before a decision is made

Email contacts: Csilla Kajtar (ckajtar@umd.edu), Colin Phillips (colin@umd.edu)

Note: Prospective students and their advisors are encouraged to familiarize themselves with the goals of the IGERT program, its potential benefits, and the different components of the program, given that the Fellows program is continuing towards very similar objectives. Information is available at: <http://www.languagescience.umd.edu/resources/documents.php>

Application

The program has a competitive application process and is open to all graduate students in language science, although it is geared towards PhD Students. Fellows are expected to design and follow through on both a training and a research plan, so students are encouraged to apply in their first or second year of studies to receive full benefits from participation. Once admitted to the program Fellows remain part of the program until the end of their PhD program. The first two years in the Fellows program are expected to be more intensive in terms of involvement level, however. The new program's outline, as it is presented here, was established and agreed upon by a committee of faculty and students.

A LSC Fellow's plan of study generally involves activities in 4 primary areas that are considered central to the goals of the LSC:

- Interdisciplinary coursework that enhances the breadth of students' knowledge in the area of language science, particularly in areas that would not typically be encountered in a more traditional plan of study. Students will incorporate in their training plan a set of 4-5 courses that are falling outside of their main area of study.
- Interdisciplinary experience designed to provide the student with hands-on training outside their core research area. This could take the form of a rotation in another lab, a language policy externship, a field-work experience outside of the student's home discipline, or other experience-based activity.
- Community outreach. All LSC Fellows are expected to take part in at least one outreach activity per year.
- Service and leadership experience. All LSC Fellows are required to serve on at least 1 LSC committee per year, with the additional requirement to serve as a committee chair or event organizer one year during the Fellowship period.

The application process is designed to help students outline a roadmap to their training and research plan for their entire PhD program of study. The students work with their advisors and the program administration designing the plan, submit it for evaluation but the LSC Fellowship Committee which provides them with detailed feedback to ensure the students success in their PhD careers at UMD. Students will implement their research and training plans over the course of the first year in the program and, under advisor and committee supervision, will revise and make changes as needed at the beginning of their second year. A full application has 3 sections, consisting of (1) student records, (2) a plan of study (6-7 pages, including 4 sub-parts representing the four areas of activity described above) and (3) letters of support.

1. Student records

- a. CV
- b. Academic records (transcripts and test scores). Official copies are not needed; an unofficial transcript downloaded from Testudo is perfectly acceptable.
- c. Description of student's existing funding plan for the PhD, listing the source and anticipated amount of funding. If there is a plan to apply for other fellowships (e.g., NSF-GRF, NIH-NRSA, CEBH) please mention this. (This is needed for reporting purposes).

2. Research and training plan

- a. Training plan, approximately 1 page

This plan should explain the student's training goals as they tie in with their research plan. The plan will incorporate the list of courses students are planning to take to meet their training goals, and mark which courses are mandatory for their home department requirements and which are the 4-5 that are meant to enhance the student's interdisciplinary training in the language

sciences. These courses must be conceptually coherent with the student's plan of study and eventual academic goals, but should go beyond the training the student would receive in their home department.

If the student plans to complete the NACS Certificate program in conjunction with the LSC coursework, then this should be explained.

b. Interdisciplinary experience, approximately 1 page

Students are expected to take part in a major hands-on experiential activity. This could take the form of a rotation in another lab or department, a language policy externship, a field-work experience outside of the student's home discipline, or other experience-based activity. This section of the application should both describe the planned activity, and how that activity meets the following goals:

- It brings the student outside his or her "comfort" zone, and broadens the student's interdisciplinary language science knowledge base
- It exposes the student to methods, approaches, and/or research topics beyond that of the home department

c. Other LSC activities, 1 page

Students are encouraged to discuss their plans for service, leadership, and outreach activities, but it is expected that such plans may change over the course of the student's fellowship period. However, prospective fellows should state their plans to meet the LSC Fellow requirements in these areas.

d. Integrative Research plan/goals, 2-4 pages

The coursework and activities described above are designed to provide students with interdisciplinary training that prepares them to go beyond traditional disciplinary boundaries, and build a unique and innovative program of study. In this section, students should describe their eventual academic goals and research domains, along with a program of research and experiences that would allow them to reach these academic goals. Often, this will take the form of a concrete, detailed program of research that would be carried out in the context of the training program, including an explanation of the importance of the research and how it contributes to the goals of both the student and the LSC. It is important to explain the context for the research, in a fashion that is understandable by an interdisciplinary readership. At its best, the different parts of the LSC Fellowship application should form a cohesive, holistic plan for graduate education that is innovative, creative, integrative, and interdisciplinary.

In order to complete this section, applicants will need to have met (likely multiple times) with both their primary research advisor, and the supervisor of their proposed breadth experience.

3. Support letters

a. Advisor's letter of commitment

This letter confirms that the advisor has discussed the student's plan and that the student's participation in the program has the support of the advisor and the home department. If the advisor is not already a member of the LSC, the letter should also describe how the advisor and/or the home department is willing to contribute to the goals of the LSC.

b. Two confidential letters of recommendation, of which one should be from the student's primary advisor

All documents except for the confidential letters of recommendation (3b) should be submitted electronically by the student to Csilla Kajtar (ckajtar@umd.edu), as a single PDF file. The confidential letters of recommendation should be emailed separately to ckajtar@umd.edu - PDF, MSWord, or email text are all fine, though PDF is strongly preferred.

Admission and funding decisions will be made by the Admissions Committee, which is a representative committee of faculty members from participating departments. Evaluation criteria will include the quality and potential contributions of the application.

IGERT Project Summary for info purposes (taken from NSF proposal)

1. Title IGERT: Biological and Computational Foundations of Language Diversity
Lead Institution University of Maryland
Participating Inst Central Institute for Indian Languages, Mysore, India; Hiroshima and Tohoku Universities, Japan; Universidade Federal do Rio de Janeiro, Brazil; Center for Advanced Study of Language (UMd.); VL2 Science of Learning Center, Gallaudet University; National Institute on Deafness and other Communication Disorders.

2. INTELLECTUAL MERIT. Human language is both universal within the species and highly variable across populations. This IGERT will train young scientists to understand language diversity by combining tools of behavioral, computational and biological research. The goal of the project is to create a model for sustainable change in the science of language. We argue that this requires change in the role of academic departments that focus on language, creating units that form the hub of a collaborative network, rather than attempting to simply remove traditional departmental boundaries. We also contend that sustainable change, i.e., change that will persist across time and across institutions, depends strongly on the pursuit of diversity, encompassing both language diversity and diversity of participation. The starting point for the project is a language research community at the University of Maryland that is perhaps uniquely well positioned to combine expertise from linguistic, computational, cognitive and neuroscientific approaches to language with clinical and pedagogical concerns, drawing upon an extensive network of existing connections that span nine departments in five colleges. The first goal of the IGERT is to build upon our existing interdisciplinary success to break down further barriers to collaboration and cross-training. The second goal of the project is more outward-looking. The aim is to promote sustainable change through local and international collaborations and outreach efforts that will build infrastructure for interdisciplinary work on diverse languages, build awareness of the science of language among younger and underrepresented groups of students through high school and undergraduate partnerships, while also training IGERT students to be effective agents of change in their own future careers.

The training program will create a framework that allows students to translate broad foundational training into innovative interdisciplinary research. The training plan provides coursework, research training, and environment that are all geared towards the goal of preparing students for interdisciplinary research projects and equipping them to build similar collaborative networks at other institutions in their future careers. Preparation for interdisciplinary research projects will be provided by broad coursework in language and cognitive (neuro-)science, integrative pro-seminars and a post-candidacy lab rotation that pairs trainees with students from other disciplines. A central component of the IGERT is the *Winter Storm*, an intensive two-week workshop that provides foundational skills training, building student partnerships through research projects, review and updating of research goals, and professional development. In addition, the IGERT builds upon international connections that will advance interdisciplinary training in language in India, Japan, and Brazil, while providing IGERT trainees with access to broader multilingual perspectives. The IGERT will partner with an NSF-supported Science of Learning Center based at Gallaudet University, expanding local training opportunities for deaf students.

3. **BROADER IMPACTS.** This interdisciplinary training model developed in this IGERT will have a national and international impact. The project will create resources and train graduates that can promote the integration of psychological, neural, and computational tools with multi-lingual expertise at other institutions. The project will strengthen a series of international collaborations through which students can contribute to infrastructure for interdisciplinary research in countries where linguists have less ready access to experimental and computational expertise. The project will enhance the use of computational and neuroscientific techniques in studies of atypical language and second language learning. A program of outreach activities at the undergraduate and high school level, plus the partnership with Gallaudet University, will enhance participation of underrepresented groups in science.

Course List

The University of Maryland offers a huge variety of courses in different areas of language science. This is a *non-exhaustive* list of courses to serve as examples and that may be relevant to language science students who are participating in the Fellows program. Students should consult with their advisors and other faculty, including the program director, for feedback on individual course plans.

Special courses

These are examples of courses offered as seminars aimed at an interdisciplinary audience. Topics frequently change.

LING889B Seminar in Categorization; (3 credits) W. Idsardi
LING848 Seminar in Comp Psycholinguistics; (3 credits) P. Resnik
LING849 Seminar in Developmental Language Disorders; (3 credits) A. Zukowski
HESP818L Seminar in Infant Language Acquisition; (3 credits) R. Newman
LING859 Seminar in Language Acquisition; (3 credits) J. Lidz & A. Woodward

NACS600 (*PermReq*) Ethics in Scientific Research; (2 credits) A. Popper and C. Moss and P. DeShong and R. Dooling.

Linguistics and Language Diversity

Courses offered annually (fall-spring sequences):

LING610 Syntactic Theory; (3 credits) H. Lasnik [*fast moving introductory course; presupposes minimal background, focus on syntactic argumentation and evidence.*]
LING611 Issues in Syntax; (3 credits) N. Hornstein
LING620 Phonological Theory; (3 credits) W. Idsardi [*This sequence focuses on the cognitive science of phonology.*]
LING621 Issues in Phonology; (3 credits) W. Idsardi
LING660 Introduction to Semantics; (3 credits) P. Pietroski/V. Hacquard
LING661 Issues in Semantics; (3 credits) V. Hacquard/A. Williams

These are a selection of the advanced seminars that are offered regularly:

LING698A Language & Mind (3 credits) N. Hornstein and P. Pietroski
LING819 Seminar in Syntactic Theory; [Varying topics] (3 credits) N. Hornstein / H Lasnik
LING879 Seminar in Semantics: [Varying topics] (3 credits) P. Pietroski, V. Hacquard, A. Williams
LING663 Pragmatics; (3 credits) A. Williams and V. Hacquard

Cognition and neuroscience

Regular core courses include:

EDHD721 Cognitive Development and Learning: An Introduction; (3 credits) D. Bolger
EDHD779Q Special Topics in Human Development: Bilingual/Biliteracy Acquisition; (3 credits) M. Wang
EDHD840 Language and Literacy Development; (3 credits) M. Rowe
HESP602 (*PermReq*) Neurological Bases of Human Communication; (3 credits) Yasmeen Shah
HESP610 Aphasia; (3 credits) Y. Shah

HESP626 Language and Learning Disabilities; (3 credits) F. Roth
HESP724 Research Design; (3 credits) R. Newman
HESP818 (PermReq) Seminar in Language Processing; (3 credits) N. Ratner
LING640 Psycholinguistics; (3 credits) C. Phillips
LING641 Issues in Psycholinguistics; (3 credits) C. Phillips

Courses eligible for the NACS certificate:

NACS608 Neuroscience and Cognitive Science Seminar; (1 credit) R. Araneda. *This is the weekly NACS speaker series. Students who plan to take the NACS Certificate must enroll in this course in at least 2 semesters.*

NACS641 Fundamentals of Neuroscience; (4 credits) R. Araneda & D. Soares. *Limited enrollment, priority to NACS PhD and NACS Certificate students. Plan ahead if you intend to take this course.*

NACS642 Cognitive Neuroscience; (4 credits) D. Bolger

NACS 643 Computational Neuroscience; (4 credits) Dan Butts

NACS644 Cellular and Molecular Neuroscience; (4 credits) E. Quinlan

NACS645 Cognitive Science; (4 credits) W. Idsardi

Other courses:

NACS728A ABC of Prefrontal Cortex

PHIL879N Seminar in Philosophy: Representing Numbers; (3 credits) P. Pietroski

PSYC607 Advanced Topics in Human-Learning and Cognitive Psychology; (3 credits) M. Dougherty

PSYC611 Advanced Developmental Psychology; (3 credits) Tracy Riggins, Jude Cassidy,

PSYC6XX Development of the Social Brain; (3 credits) Elizabeth Redcay

PSYC6XX Language Production; (3 credits) Bob Slevc

PSYC798M Seminar: The Seven Sins of Memory; (3 credits) M. Dougherty

SLAA649T Theories and Change in Second Language Acquisition; (3 credits) M. Long

SLAA741 Cognitive Processes in Second Language Learning; (3 credits) R. De Keyser

SLAA749Y Bilingual Language Processing/ L1 Transfer; (3 credits) N. Jiang

SLAA760 Fundamentals of Second Language Assessment; (3 credits) S. Ross

Computational/Neural Modeling

Individual student needs are likely to be particularly varied in this area, and it is recommended that students consult closely with their advisors and other faculty about the most appropriate choice of courses in this area. Please consult the Computational Linguistics Wiki for guidance on ways to navigate the computational community at UMD: <http://languagescience.umd.edu/wiki/Computational%20Linguistics>

Courses offered on a regular basis:

LING689A Introduction to Computational Modeling of Language; (1-3 credits)

N. Feldman [Relevant to all. *Normally a spring course. Presupposes minimal background. A good starting point.*]

CMSC723 Computational Linguistics I; (3 credits) H. Daume [The main gateway course in natural language processing. *Some programming background or practice recommended – consult*]

CMSC773 Computational Linguistics II; (3 credits) P. Resnik

CMSC726 Machine Learning; (3 credits) L. Getoor

ENEE632 Speech and Audio Processing; (3 credits) C. Espy-Wilson

NACS643 Computational Neuroscience; (4 credits) D. Butt [NACS core course.]

NACS 728b Quantitative processing of biological data; J. Simon. [This course is generally offered in alternate years. *Signal processing bootcamp, particularly popular with students who do electrophysiological research.*]

Examples of advanced seminar courses offered less frequently:

CMSC828X Nature Inspired Artificial Intelligence; (1-3 credits) J. Reggia

INFM718G Web Scale Information Processing Applications; (3 credits) J. Boyd-Graber

LING848 Seminar in Computational Linguistics; (3 credits) P. Resnik

Other courses students found quite useful:

PSYC601 Quantitative methods I; (4 credits) M. Dougherty

PSYC602 Quantitative methods II; (4 credits) M. Wang