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# Annual Report 2014

This document contains text extracted from our web-based annual report to the National Science Foundation, submitted 1/1/14

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# LANGUAGE PLASTICITY

genes brain cognition computation

A National Science Foundation IGERT Ph.D. training program  
at the University of Connecticut



## **PART 1: PROJECT SUMMARY**

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### **1A. Project characteristics (not included in this extract; NSF-specific details)**

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#### **1B. Research achievements (list 3, limit of 1000 characters each)**

1. IGERT Associate Kornilov is bridging cognitive neuroscience (w/faculty Magnuson & Landi) and behavior and molecular genetics (w/ faculty Grigorenko). Grigorenko has been genotyping residents of a remote Russian village with high incidence of language impairment and absence of other cognitive deficits. As reported last year, Kornilov assessed cognitive and linguistic abilities in impaired and unimpaired village children with 6 experimental electroencephalography tasks. Event-related potentials reveal normally detailed phonetic resolution in impaired children; deficits emerge in linguistic and nonlinguistic tasks requiring sustained attention, with intriguing differences in sensitivity to phonological overlap (e.g., impaired children show less sensitivity to certain phonological mismatches). The team has one EEG paper under review, another in prep., and will soon submit the 1st genome-wide association study (GWAS) of language impairment with a rigorously diagnosed, phenotyped and genotyped sample.
2. IGERT fellow Russell Richie is involved in a project that combines empirical data on lexicons in emerging sign languages (Coppola, PI) with a computational model that contrasts lexicon conventionalization in different social networks. The study focuses on how different communities converge on common lexical terms. The goal is to gain insight into language emergence, typically an area where few data are available. In this case, the data come from two different sources: Nicaraguan Sign Language (NSL), a recently emerged language among deaf students in the Nicaraguan capital Managua, on the one hand, and Nicaraguan “home sign” systems, on the other. In home sign, a deaf signer interacts with hearing members of his/her family individually (i.e. other family members do not sign to each other). Empirical data show that NSL signers converge much faster than home signers onto a common lexicon. The model shows that NSL signers may have converged faster because of denser patterns of interaction.
3. IGERT fellows Castelluccio and Rendall and Associate Truong are linking a CNTNAP2 mouse knockout model of autism spectrum disorder (ASD) to ASD phenotypic data from humans. Specifically, IGERT faculty member Eigsti’s data (Eigsti & Fein, 2013) showed that heightened auditory spectral discrimination was linked to worse language delays in children with ASD; other labs report impaired auditory temporal processing in ASD. IGERT faculty Fitch and students have explored auditory processing in the mouse CNTNAP2 knock-out model. Findings (Truong, Rendall, Castelluccio, Eigsti & Fitch, in prep) indicated a parallel profile, with heightened auditory discrimination and impaired spectral processing. This profile, with a mouse knockout model showing enhanced behavioral abilities, is nearly unprecedented, and provides a strong foundation for further examination of socio-communicative abilities in the CNTNAP2 mice to probe for further parallels with ASD.

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#### **1C. Education achievements (list 3, limit of 1000 characters each)**

1. We launched the remaining 3 of our 5-course “Foundations” sequence that provides students from diverse areas (from linguistics to neuroscience) with sufficient background in each other’s fields to allow them to work in collaborative teams. Foundations 2 (Psycholinguistics and Linguistic Structure) covers fundamentals of linguistics and psycholinguistics with enough depth to begin reading those literatures. Foundations 4 (Neurobiology of Typical and Atypical Language Development) and 5 (Neurobiology of Typical and Atypical Language Function) are both going on this semester. We have observed tremendously increased interest in talks from other areas as trainees (and some faculty) have been exposed to greater depth regarding the interdisciplinary study of language.
2. Our “breadth mentorship” and team-based models of training continue to succeed in opening new lines of trainee-led research. Last year, 6 projects had emerged. As of this April, this number has

increased to 21. A few highlights include a project including one trainee and faculty from three programs in developing more sensitive electrophysiological indices of attention to linguistic events in infants; a Linguistics/Communication Disorders collaboration (two trainees, 1 faculty member) testing Linguistic theory predictions regarding patterns of deficits in aphasia regarding pronominal production; a Psychology/Linguistics collaboration on the use of physical space for abstract linguistic function in signed languages and possibly hearing persons' gestures; and a Linguistics/Developmental Psychology/Cognitive Psychology collaboration on electrophysiological indices of prosodic processing in spoken and signed languages.

3. We continued our "J-Term primers" this year with short courses on complex trait genetics, EEG/ERP analysis, formal semantics, computational linguistics, the R statistical programming language, the Python programming language, and comparative research using special populations. In addition, we hosted State Representative Gregg Haddad for a discussion of how/when public policy makers get information about science, and how we could provide objective research analysis for them (also mentioned under outreach activities). These activities stimulated substantial discussion, expanded our trainees' technical abilities, and gave them face-to-face access to an actual policy maker.

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**1D. Trainee achievements (max 3, limit of 1000 characters each)**

1. Fellow Richie received a Cognitive Science Society Computational Modeling Prize at the 2013 annual meeting for his work on lexical conventionalization. He then published this work as part of a first-author paper: Richie, R., Yang, C., & Coppola, M. (2014). Modeling the emergence of natural language lexicons in homesign systems. *Topics in Cognitive Science*, 6(1), 183-195.
2. 23 projects involving IGERT fellows and/or associates have been launched. All of these are interdisciplinary (they include students and/or faculty from at least 2 of our 6 programs). 4 involve 2 or 3 students. These range from mouse models of autism to human genomics of language to comparative population (brain injured vs. not) investigations of language motivated by theoretical linguistics (see research achievements). Many of these projects have been enabled in crucial ways by pilot funding from the competitive innovation incentive fund.
3. IGERT trainees mentored over 30 undergraduates in laboratory settings, transmitting knowledge, skill and excitement about our research topics. Many of these undergraduates now plan to pursue advanced degrees in STEM fields.

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**1E. Barriers to implementation (max 3, limit of 1000 characters each)**

1. Faculty time
  - Barrier: IGERT faculty do not have enough time (a) to develop new collaborations inspired by our language plasticity themes, nor (b) to "cross-train" deeply, as we need them to achieve our goal of transforming faculty members' ability to engage in cross-disciplinary research.
  - Response: In response to our advisory panel's recommendation that we find a way to secure course releases for faculty for research and/or cross-training time, we negotiated "at-cost" course-buyout arrangements with all participating programs. Faculty who do lab rotations or actively take courses can qualify for these buyouts, paid for with our unrestricted funds from our university.

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**1F. Outreach activities**

1. Diversity mentoring 01/01/2014, *Undergraduate*: IGERT Fellow Sawi has been an active mentor for the McNair Scholars Program "Asiantation Mentory Program".
2. Diversity recruiting 10/09/2013, *Undergraduate, Gallaudet University*: Faculty member Coppola and Trainee Gagne made a short presentation and spoke one-on-one with about 15 undergraduates, 4 graduate students, and 5 faculty members about the training program, as part of our efforts to recruit Deaf scientists.

3. Diversity recruiting (2014) 02/15/2014, *Undergraduate, Gallaudet University*: Faculty member Coppola and Trainee Gagne made a short presentation and spoke one-on-one with about 10 undergraduates, 4 graduate students, and 5 faculty members about the training program, as part of our efforts to recruit Deaf scientists.
4. Graduate recruiting / informational presentation for minority students 11/13/2013, *Annual Biomedical Research Conference for Minority Students*: Faculty member Naigles & associate A. Shaw visited poster sessions, talked to presenters with projects relevant to our IGERT, discussed connections. Students were invited to examine our IGERT website and contact us directly (3 did) about applying.
5. IGERT trainee mentoring of undergraduates 01/01/2014, *Undergraduate*: IGERT trainees have mentored 30+ undergraduates this year in laboratory work and/or directed readings. Many of these students will now apply to PhD programs in STEM fields. (Note the date is placeholder, as this activity spanned the entire year.)
6. Interview for article "Socioeconomic status can affect hearing" 11/18/2013
7. Interview for article "The Effect of Socioeconomic Status on How the Brain Processes Sound" 10/29/2013, *Media*: Article in the Hartford Courant featuring the work of IGERT faculty member Dr. Erika Skoe entitled "Socioeconomic status can affect hearing" published November 18, 2013
8. Interview with Radio3 (Italy) 01/26/2014, *Media*: IGERT faculty member Lillo-Martin interviewed by Rossella Panarese on Italy's Radio3 regarding her public lecture the previous day for Rome's International Science Festival.
9. K-12 STEM mentoring 01/01/2014: Fellow Sawi has facilitated participation of our IGERT in the Kids and UConn Bridging Education (KUBE) program, a one-on-one mentoring program with middle school students from nearby Killingly and Windham, CT.
10. Meeting with state legislative representative 01/16/2014, *Policy makers*: IGERT faculty & trainees met with Representative Gregg Haddad to discuss (a) how legislators learn about science, (b) how science is relevant to public policy makers, (c) how we could be of use by presenting objective research analyses.
11. Mentor connection 01/01/2014, *High School Students*: 3 high school students were mentored in the lab by Fellow Rendall and learned how research progresses in behavioral neuroscience laboratories.
12. Middle school discussion of technology for studying brains 06/14/2013: IGERT faculty member Inge-Marie Eigsti engaged 20 middle school students in a discussion of brain imaging, with a focus on how imaging is useful in better understanding autism spectrum disorder and how we use brain imaging in research.
13. Psychological research: College & beyond (for Advanced Placement High School students) 02/24/2014: Fellows Richie & Rendall gave 30 min. talk w/15 min. Q&A to 2 sections of AP Psych. We described how we got where we are, explained our IGERT, & each spent 10 min. describing our labs' research. Goal: inform HS students how to pursue science careers.
14. Public lecture for brain injury advocacy group 03/07/2014, *community, patients, caregivers, professionals*: IGERT faculty member Carl Coelho made a presentation on the assessment of communication following traumatic brain injury
15. Public lecture: I suoni, i segni e le forme del linguaggio (Sounds, signs, and structures of languages) 01/25/2014: IGERT faculty member (Lillo-Martin) gave a presentation on the nature of sign languages, and how sign languages have both basic similarities to spoken languages and important modality effects, as part of the Festival delle Scienze.
16. Public lecture: The Organization of (Single-Word) Reading: Insights from Cross-Language Research 11/06/2013: This hour-long talk by faculty member Rueckl provided a brief history of behavioral, neuroimaging studies and computational modeling studies of reading to an audience of educators and policy makers.

17. Scientific facilitator for brain injury support group 01/01/2014, *community, patients, caregivers*: Fellow Lindsey meets with this group to tell them about the science behind brain injury intervention, and facilitates support group meetings more generally.

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**1G: Remarkable achievements / discoveries to submit as "NSF Highlights"**

None submitted.

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## PART 2: Participants

Abbreviations: LING = Linguistics, PNB = Physiology & Neurobiology; SLHS = Speech, Language & Hearing Sciences

Psychology: BNS = Behavioral Neuroscience, CLIN = Clinical, DEV = Developmental, PAC=Perception-Action-Cognition

### Faculty

- |   |  |
|---|--|
| 1. Bortfeld, Heather - DEV/Haskins Labs                     | 14. Myers, Emily - SLHS/PAC/Haskins Labs |
| 2. Calabrese, Andrea - LING                                 | 15. Naigles, Letitia - DEV               |
| 3. Coelho, Carl - SLHS                                      | 16. Pugh, Ken - PAC/Haskins Labs         |
| 4. Coppola, Marie – DEV/LING                                | 17. Ramanathan, Pradeep - SLHS           |
| 5. Eigsti, Inge-Marie - CLIN                                | 18. Read, Heather - BNS                  |
| 6. Fein, Deborah - CLIN                                     | 19. Rueckl, Jay - PAC/Haskins Labs       |
| 7. Fitch, Roslyn - BNS                                      | 20. Sheya, Adam - DEV                    |
| 8. Grela, Bernard - SLHS/Haskins Labs                       | 21. Skoe, Erika - SLHS                   |
| 9. Grigorenko, Elena – Haskins Labs/Yale Child Study Center | 22. Snyder, William – LING/Haskins Labs  |
| 10. Landi, Nicole - DEV/Haskins Labs                        | 23. Spaulding, Tammie - SLHS             |
| 11. Large, Edward - PAC                                     | 24. Sprouse, Jon - LING                  |
| 12. Lillo-Martin, Diane - LING/Haskins Labs                 | 25. Tabor, Whitney - PAC/Haskins Labs    |
| 13. Loturco, Joseph - PNB                                   | 26. Theodore, Rachel - SLHS              |

### Fellows

1. Castelluccio, Brian – CLIN (Eigsti)
2. (Ammon) Gagne, Deanna – DEV (Coppola)
3. Green, Joshua – CLIN (Eigsti)
4. Jenkins, Theodore – SLHS (Coelho)
5. Lindsey, Andre – SLHS (Ramanathan)
6. Meza-Gonzalez, Iliana – PAC (Myers)
7. Nguyen, Dung – LING (Snyder)
8. Rendall, Amanda – BNS (Fitch)
9. Richie, Russell – DEV (Coppola)
10. Sawi, Oliver – PAC (Rueckl)
11. Shaw, Kathleen – DEV (Bortfeld)
12. Smith, Garrett – PAC (Tabor)

### Associates

1. Alpers, Nora – DEV (Naigles)
2. Carrigan, Emily – DEV (Coppola)
3. Chin, Iris – DEV (Naigles)
4. Gomes Bertolino, Karina – LING (Lillo-Martin)
5. Goodwin, Anthony – DEV (Naigles) [graduated]
6. Johns, Alexis – PAC (Myers/Magnuson)
7. Kornilov, Sergey – PAC (Magnuson)
8. Kurian, Anish – PAC (Pugh)
9. Petrosino, Roberto – LING (Calabrese)
10. Shaw, Ashlee – PAC (Magnuson)
11. Truong, Dongnhu – BNS (Fitch)

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## 3. PROJECT FEATURES

**3A. Trainee preparation in multidisciplinary/interdisciplinary research** (*briefly describe up to three of the promising practices for preparing IGERT trainees to conduct collaborative research that transcends traditional disciplinary boundaries*)

1. Our weekly brownbags are a simple but effective mechanism. These bring people together, expose us to each other's research, and naturally leads to further collaborations. We also devote some sessions to reviewing the IGERT themes and encouraging students and faculty to make new

connections. To energize this event, we spent the Fall using this venue for overview talks from each of our 6 participating programs. This Spring, we have experimented with typical research talks as well as brainstorming sessions. Both last year and this year, Talk Shop has been the origin of about half of our new collaborations.

2. Our Foundations courses culminate in team-based research projects and/or grant proposals (for internal or external funds). These team-based efforts have pushed students to design projects related to our IGERT goals, and to discover ways to bridge their home disciplines and those of other trainees. Several of these projects have led to active research programs.
3. Our Breadth Mentorship component has been even more successful than we had hoped. We explicitly opted against a formal lab rotation mechanism because students in some participating programs have heavy coursework or laboratory time constraints. Instead, trainees must identify a breadth mentor and meet with him/her on a regular but informal basis to discuss connections between their respective fields. Being required to do this has led most Fellows to launch a new collaboration including their breadth mentors, (often) their primary advisors, and (often) other relevant faculty and trainees.

*Mark the following components of multidisciplinary/interdisciplinary research preparation that apply to the majority of IGERT trainees involved in your project during this reporting period.*

- Trainees undertook formal coursework/training in research methods, practices, and instrumentation in their primary discipline equivalent to traditional graduate students.
- Trainees had practical, hands-on laboratory and/or field experience in conducting research across the breadth of disciplines in the IGERT program.
- Trainees undertook formal coursework/training across the breadth of disciplines encompassed by the IGERT project.
- Trainees undertook formal coursework/training in both the ethical conduct of research and ethical conduct related to the themes encompassed by your IGERT project.

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**3B. Trainee preparation in professional skills** (*Briefly describe up to three formal training activities [e.g. coursework, workshop, professional speaker] for preparing IGERT trainees to effectively communicate science to general audiences.*)

1. We invited our innovation consultant, Dr. Kristian Simsarian, Director of the Interaction Design Program, and Fellow at IDEO (global design consultants), to run a training workshop on brainstorming, communication, and team building in August. A group of 20 faculty and trainees attended, and learned how to conduct these activities. By participating in them, trainees learned how to lead such activities, which will facilitate collaboration, teaching, and innovation.
2. In February, we conducted an internal retreat, where trainees who participated in Dr. Simsarian's workshop led brainstorming, communication, and team building exercises they learned in the workshop. In a key exercise, trainee-faculty teams brainstormed about possible new research projects, and then had to present the idea in the form of a skit that would be accessible to a general audience. A post-retreat survey indicated that the retreat was successful in increasing communication among IGERT personnel and providing some insight into how to communicate to general audiences.
3. In January, we met with State Representative Gregg Haddad to discuss how/when public policy makers get information about scientific research. When we discussed how we might be of service (by providing objective research analyses to legislators). Representative Haddad suggested we distribute a 'research digest' to the General Assembly, summarizing recent discoveries in Brain and Cognitive Sciences at UConn and internationally. Trainees are running with this idea, and have formed a committee to develop a research digest. This is requiring the trainees to write research summaries that are accessible to a general audience, and to solicit such summaries from their

fellow trainees and the IGERT faculty. The student committee plans to distribute the research digest to the General Assembly in the Fall.

*Mark the following components of professional skills development that apply to the majority of IGERT trainees involved in your project during this reporting period.*

- Trainees undertook coursework/training that included regular faculty critique of and feedback on professional writing.
- Trainees authored, submitted, or published research papers in refereed journals.
- Trainees undertook coursework/training (e.g., brown bags, seminars) that included regular critique of and feedback on professional speaking/presentation skills.
- Trainees made presentations at academic/scientific professional conferences or meetings.
- Trainees presented results from their IGERT project to professional, nonacademic audiences (e.g., industry, government).
- Trainees undertook coursework/training to develop media-based or information technology-based communication skills.
- Trainees produced multimedia materials, Web sites, or other cyber-enabled tools to communicate the results of their IGERT activities to external audiences.
- Trainees used multimedia materials, Web sites, or other cyber-enabled tools as part of their interdisciplinary scientific training and collaboration.
- Trainees received training in team-building and project management skills.
- Trainees received training in effective time and task management.
- Trainees participated as members of teams engaged in joint research, education, and/or outreach efforts.
- Trainees led teams engaged in research, education, and/or outreach efforts.

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**3C. Trainee preparation for STEM careers** *(Mark the following components that apply to the majority of IGERT trainees involved in your project during this reporting period)*

- Trainees received training or instruction (e.g., courses, workshops) in effective teaching practices. Trainees developed and presented course and/or curriculum materials.
- Trainees served as mentors to others (e.g., graduate students, undergraduates, laboratory technicians).
- Trainees received training/mentoring in grant proposal preparation.
- Trainees authored/coauthored and submitted grant proposals.
- Trainees received training/instruction on the interaction between academic research and industrial technical requirements.
- Trainees received training/instruction for applying their research to address public policy concerns or issues.
- Trainees had internships (off-campus, research, educational, and/or work experiences) in nonacademic settings (e.g., industry, government).
- Trainees had professional interactions other than internships with nonacademic employers (e.g. industry, government) in order to learn about career opportunities and requirements.
- Trainees communicated, worked, or collaborated with scientists of other nationalities.

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**3D. Tactics for recruitment and broadening participation** *(One purpose of IGERT is to create a program strategy and a plan for recruiting, mentoring, retaining, and graduating U.S. graduate students that includes efforts aimed at members of groups underrepresented in science and engineering. With these goals in mind, please respond to the following questions for this reporting period.)*

Do you have an overall, active plan with a specific set of goals and timelines for the recruitment and retention of trainees, including specifics for broadening participation of groups underrepresented in science and engineering?

Yes

Regardless of your response to the previous question, please describe up to three of the promising tactics and results for recruiting qualified trainees to your IGERT project during this reporting period.

- Tactic:** In our promotional materials (website, brochures, posters, emails to colleagues and student groups at a variety of institutions, but especially historically minority serving institutions) we have emphasized our commitment to mentoring all students, but with special attention to the needs of students from underrepresented groups. We have also stressed the diversity commitment of the UConn Graduate School and the support and mentoring programs it offers to diversity students. **Result:** Our communication efforts have paid off. We have seen emails administrators at MSIs have sent on to students emphasizing what an opportunity our IGERT program is. More concretely, most of our participating PhD programs observed marked increases in the numbers of applications from members of underrepresented groups.
- Tactic:** We invited our strongest applicants to visit our campus, with special attention given to communication with members of underrepresented groups before, during, and after their visits. We told all students about our emphasis on mentoring, and discussed the mechanisms within our program and the UConn Graduate School to address particular needs of students from underrepresented groups. In addition, we arranged meetings between applicants from underrepresented groups and the diversity officer from our graduate school. **Result:** Last year, we were remarkably successful at recruiting members of underrepresented groups: 5 of 8 new fellows in the fall come from underrepresented groups, and 4 of 8 are women. However, this year, since the deadline for our annual report is before the April 15 decision deadline, we do not yet know whether candidates from underrepresented groups will accept our offers.
- Tactic:** We emphasize the need for strong mentorship by primary advisors and breadth mentors. We also work with students to make them planful in achieving their intellectual and practical skill goals, and to lay the groundwork for successfully launching independent research careers when they graduate. **Result:** Our fellows have each become involved in multiple collaborations that extend beyond their home PhD boundaries. Our students report that they feel well-supported and well-mentored. As we are in Year 2, we cannot yet report on our students' success after training, but we have so far achieved 100% retention. We conduct individual student meetings that indicate a high degree of satisfaction with the program, and very high self-ratings of course and research progress, indicating high student satisfaction.

Please describe the extent to which each of the following practices have been productive for recruiting trainees overall to your IGERT project during this reporting period.

RECRUITING PRACTICE	PRODUCTIVE	SOMEWHAT PRODUCTIVE	NOT PRODUCTIVE	NA
Relationships with NSF programs that can provide an undergraduate pool of potential IGERT trainees (e.g., REUs, NSF Centers)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Relationships with faculty and programs at other academic institutions	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use of recruiting resources on your campus (e.g., career service office, graduate studies office)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collaboration with other IGERT projects on recruitment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Use of professional meetings, conferences, associations to communicate with, reach out to, and market to potential IGERT Trainees	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other Please specify: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Please describe the extent to which each of the following practices have been productive for recruiting underrepresented minority and women trainees to your IGERT project during this reporting period.

RECRUITING PRACTICE	UNDERREPRESENTED MINORITIES	WOMEN
Relationships with NSF programs that specifically focus on broadening participation of underrepresented minorities or women in STEM (e.g., LSAMP, AGEP, TCUP, or ADVANCE)	<input type="radio"/> Productive <input checked="" type="radio"/> Somewhat productive <input type="radio"/> Not productive <input type="radio"/> NA	<input type="radio"/> Productive <input checked="" type="radio"/> Somewhat productive <input type="radio"/> Not productive <input type="radio"/> NA
Use of resources on your campus (e.g., academic advancement programs, offices for campus diversity, or minority and women's student groups)	<input type="radio"/> Productive <input checked="" type="radio"/> Somewhat productive <input type="radio"/> Not productive <input type="radio"/> NA	<input type="radio"/> Productive <input checked="" type="radio"/> Somewhat productive <input type="radio"/> Not productive <input type="radio"/> NA
Interaction with professional associations, organizations, or committees serving underrepresented minority communities or women (e.g., National Action Council for Minorities in Engineering, Society of Women Engineers, committees in professional societies focused on minority communities and women)	<input type="radio"/> Productive <input checked="" type="radio"/> Somewhat productive <input type="radio"/> Not productive <input type="radio"/> NA	<input type="radio"/> Productive <input checked="" type="radio"/> Somewhat productive <input type="radio"/> Not productive <input type="radio"/> NA
Bridge programs for entering graduate students	<input type="radio"/> Productive <input type="radio"/> Somewhat productive <input type="radio"/> Not productive <input checked="" type="radio"/> NA	<input type="radio"/> Productive <input type="radio"/> Somewhat productive <input type="radio"/> Not productive <input checked="" type="radio"/> NA
Mentoring or advising arrangements that take advantage of underrepresented minorities or women faculty or graduate students on campus	<input type="radio"/> Productive <input type="radio"/> Somewhat productive <input type="radio"/> Not productive <input checked="" type="radio"/> NA	<input type="radio"/> Productive <input type="radio"/> Somewhat productive <input type="radio"/> Not productive <input checked="" type="radio"/> NA
Relationships with faculty and programs at minority-serving academic institutions (e.g., historically black colleges and universities, Hispanic-serving institutions, or tribal colleges)	<input type="radio"/> Productive <input type="radio"/> Somewhat productive <input type="radio"/> Not productive <input checked="" type="radio"/> NA	<input checked="" type="radio"/> NA
Collaboration with other IGERT projects on recruitment	<input type="radio"/> Productive <input type="radio"/> Somewhat productive <input type="radio"/> Not productive <input checked="" type="radio"/> NA	<input type="radio"/> Productive <input type="radio"/> Somewhat productive <input type="radio"/> Not productive <input checked="" type="radio"/> NA
Other Please specify: <input type="text"/>	<input type="radio"/> Productive <input type="radio"/> Somewhat productive <input type="radio"/> Not productive <input checked="" type="radio"/> NA	<input type="radio"/> Productive <input type="radio"/> Somewhat productive <input type="radio"/> Not productive <input checked="" type="radio"/> NA

### 3E. International opportunities

PART 1: Briefly describe up to three training experiences or components that provided exceptional "added value" for preparing IGERT trainees to be successful in international/global science and engineering. NOTE: This can include U.S.-based experiences.

*Training experiences/components:*

1. Our arrangements for international experiences require trainees to develop project proposals well in advance of international internships, to maximize the utility and productivity of the trip both for the trainee and their international hosts. Several trainees are preparing proposals with the goal of arranging an international research visit in the next grant year.
2. The week of April 1, we are helping to sponsor (using university funds supplied to our program) an international workshop on multilingualism at Haskins Laboratories which is bringing (listed) international partners from Taiwan, and Spain, and Finland, as well as scientists willing to welcome our trainees to their labs in Israel, India, and Japan. We are arranging meetings between our trainees and these internationally renowned scientists.

**PART 2**

**Is international participation required for all trainees involved in your IGERT project?**

Yes

No

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**Did one or more trainees from your IGERT project engage in an international experience through the project during this reporting period?**

Yes

No

**If yes, please click on the "Add an International Experience" button below to describe the experience and the country. NOTE: You will need to repeat this step for each country in which trainees engaged in an international experience during this reporting period.**

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**Identify the value/opportunities for faculty that resulted from the international experiences of the IGERT project.**  
(Mark all that apply)

Faculty have developed new collaborations.

Faculty have developed new access to facilities/skills.

Faculty have developed new opportunities for research/education/training.

Other

*Briefly describe up to three research or educational achievements resulting from the international component. Each achievement may involve a single trainee or a group of trainees.*

1. Faculty have continued to build new collaborations with our international partners. Trainees are involved in some of these projects, but have not yet gone on international visits. One notable project uses functional magnetic resonance imaging (fMRI) to compare the brain circuits involved in reading in 4 languages (English, Chinese, Hebrew, and Spanish). Contra published studies from other groups suggesting reliance on different circuits in English, Italian, and Chinese, we have found remarkable overlap in the precise circuits used for spoken and written language processing (and "convergence" zones that activate as part of the spoken and written language processing circuits) for four typologically very distinct languages.

Were there active partnerships/collaborations outside of your university through your IGERT project during this reporting period?

- Yes  
 No

*This was an error; we should include Grigorenko at Yale, and ongoing projects with colleagues in France, Spain, Finland, and Taiwan.*

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## 4. EVALUATION AND IMPACTS

### 4A. Project evaluation

Do you have an overall plan with milestones and timelines for measuring progress toward attaining key IGERT project goals?

- Yes  
 No

If your IGERT project paid for professional evaluation services external to the IGERT institution or used expertise internal to your institution to aid in the evaluation process, please share their contact information.

Organization/individual name:

Address:

E-mail address:

Phone:

Web site:

Was this an external evaluation service provider?

Please describe a key insight, and your response to it, if any, that has been identified through assessment and evaluation during this reporting period.

1. **Insight/learning:** While our external evaluation survey will be completed after this report's due date, we have gained 3 crucial insights from our advisory panel (Spring, 2013), a retreat, and brainstorming sessions. First, the program would benefit from increased student involvement in designing/implementing program activities. Our advisory panel advised that greater student involvement would foster student commitment and enthusiasm. Second, the challenges posed by conducting interdisciplinary research in areas from neuroscience to linguistics demand conscious efforts to establish common ground of technical terminology, and we were not succeeding in sufficiently third this barrier. Third, faculty needed to be freed from courses and/or given summer support to make it possible for them to fully engage in interdisciplinary cross-training alongside students. **Response:** Regarding these three insights we have (1) increased student participation in

and leadership of committees that guide program activities, which has greatly improved student participation and morale (not that morale was low before); (2) we included introductory overviews of our 6 participating programs in our weekly brownbag, have established a convention of raising "jargon alerts" during talks when unfamiliar terminology is used, and have made overviews of terms and assumptions a 'required' part of brownbag talks; (3) we are using funds we receive from the university to support faculty course buyouts and in cases of extraordinary effort, summer salary, allowing more faculty to participate in courses, lab rotations, and other mechanisms for cross-training.

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## 5. PUBLICATIONS/ PRESENTATIONS

- 69 publications in refereed journals
- 15 book chapters
- 10 conference publications
- 98 other conference presentations

*\* indicates IGERT trainee supported through NSF fellowship*

### Publications in refereed journals (69)

1. Almonte, F., Kim, J. C., & Large, E. W. & (2014). Mode-locked neural oscillation predicts human auditory brainstem responses to musical intervals. *Hearing Research*, 308, 41-49.
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### **Book chapters (15)**

1. Blumstein, S.E., & Myers, E.B. "Neural Systems Underlying Speech Perception." In *The Oxford Handbook of Cognitive Neuroscience*, edited by Oschner, K. & Kosslyn, S., 507–523. Oxford: Oxford University Press, 2013.
2. Chen Pichler, Deborah, Lee, James, & Lillo-Martin, Diane (2014). Language Development in ASL-English Bimodal Bilinguals. In David Quinto-Pozos (Ed.), *Multilingual Aspects of Signed Language Communication and Disorder*, 235-260. Bristol, UK: Multilingual Matters.
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### **Conference publications (10)**

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2. Davidson, K., \*Gagne, D., (2014) Vertical Representation of Quantifier Domains. Proceedings of Sinn und Bedeutung conference, Basque Country, Spain.

3. Garrapa, L., Bottari, D., Grimaldi, M., Pavani, F., Calabrese, A., De Benedetto M., & Vitale, S. (2013). Processing of /i/ and /u/ in Italian cochlear-implant children: a behavioral and neurophysiologic study, 14th Annual Conference of the International Speech Communication Association (ISCA), Interspeech, Speech in Life Sciences and Human Societies , Lyon (France), 25-29 August 2013: 2272-2276.
4. Kelty-Stephen, E., Tek, S., Fein, D., & Naigles, L. (2014). Specific effects of joint attention on language development in children with autism spectrum disorders. Proceedings of the 38<sup>th</sup> Annual Boston University Conference on Language Development. Cascadilla Press.
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6. Müller de Quadros, R., Lillo-Martin, D. & Chen Pichler, D. (2013). Early Effects of Bilingualism on WH-Question Structures: Insight from Sign-Speech Bilingualism. In Stavroula Stavrakaki, Marina Lalioti & Polyxeni Konstantinopoulou (Eds.), Proceedings of GALA 2011, 300-308. Newcastle upon Tyne: Cambridge Scholars Press.
7. \*Rendall, A., Truong, D., \*Castelluccio, B., Eigsti, I.E., Fitch, R.H. (2013). Language deficits in autism and assessment of the *Cntnap2* mouse. Program No. 533.03/S9. 2013 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2013. Online. (Also presented at Neuroscience at Storrs, Dec 2013).
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9. Theodore, R. M. (2013). Talker-specific perceptual processing: Influences on internal category structure. Proceedings of the 14<sup>th</sup> Annual Conference of the International Speech Communication Association (Interspeech 2013), 2802-2806.
10. Theodore, R. M., Myers, E. B., & Lomibao, J. (2013). Listeners' sensitivity to talker differences in voice-onset-time: Phonetic boundaries and internal category structure. Proceedings of Meetings on Acoustics, 19, 060248.

### **Conference presentations (98)**

1. Abrams, D., Robins, D., Adamson, L. & Fein, D. (2013, May) Lower Diagnostic Severity is Predictive of Not Maintaining Early ASD Diagnosis. International Meeting for Autism Research, San Sebastian, Spain.
2. Bean, A., Fein, D. & Naigles, L. (2013, April) Categories of Young Children on the Autism Spectrum. Poster presented at the Society for Research in Child Development Biennial Meeting, Seattle.
3. Bean, A., Khaledi, M., Tovar, A., Fein, D., & Naigles, L. (2013, June) Attention and Learning in Young Children on the Autism Spectrum. Poster presented at the Society for Research in Child Language Disorders, Madison, WI.
4. Bisailion, M., Sylvia, R., Salvador, K., & Theodore, R. M. (2013). Locus of phonological deficits in adults with dyslexia: Preliminary evidence. Presented at the 16<sup>th</sup> annual Frontiers Exhibition in Undergraduate Research, University of Connecticut, Storrs, Connecticut.
5. Brozdowski, C. R., Gordils, J., & Magnuson, J. S. (2013, November). Contra the Qualitatively Different Representation Hypothesis (QDRH), concrete concepts activate associates faster than abstract concepts. Talk presented at the Psychonomic Society, Toronto.

6. Brozdowski, C. R., Gordils, J., & Magnuson, J. S. (2013, November). Using text instead of pictures in the Visual World Paradigm: Phonological, semantic, and perceptual similarity effects. Poster presented at the Psychonomic Society, Toronto.
7. Casey, K., Bohner, A., Marmon, S., Theodore, R. M., & Vasil-Dilaj, K. (2013). Effects of auditory and visual variability on word learning in children. Presented at the 16<sup>th</sup> annual Frontiers Exhibition in Undergraduate Research, University of Connecticut, Storrs, Connecticut.
8. Castagnetti, J., \*Shaw, K. E., & Bortfeld, H. (2013). Sensitivity to audiovisual sine wave speech synchrony in preverbal infants. Poster presented at the annual meeting of the University of Connecticut's Language Fest, Storrs, CT. April 27<sup>th</sup>.
9. \*Castelluccio, B.C., Schuh J.M., Myers E.B., & Eigsti, I.M. (2013, November). Neural substrates of affective language processing: an event-related fMRI study. Poster presented at the Society for Neurobiology of Language, San Diego, CA.
10. Chin, I., Vosoughi, S., Goodwin, M. S., Roy, D., & Naigles, L. (2013, May). Dense Data Collection Through the Speechome Recorder Better Reveals Developmental Trajectories. Poster presented at the International Meeting for Autism Research, San Sebastián, Spain.
11. Chin, I., Vosoughi, S., Potrzeba, E., Goodwin, M. S., Roy, D., & Naigles, L. (2013, April). Verb use in a child previously diagnosed with ASD: Dense recordings reveal typical and atypical development. Poster presented at the Biennial Meeting of the Society for Research in Child Development, Seattle, Washington.
12. Cho, P.W., \*Smith, G., & Tabor, W. (2014, March). Skewed lexical distributions facilitate recursion learning in an artificial grammar task. Poster session presented at the 27th Annual CUNY Conference on Human Sentence Processing, Columbus, OH.
13. Collison, B., Grela, B., Spaulding, T., Rueckl, J., & Magnuson, J. S. (2013, July). Individual differences in shape bias are predicted by non-linguistic perceptual ability. Proceedings of the 35th Annual Meeting of the Cognitive Science Society, 3910.
14. Coppola, M. & \*Gagne, D. (2013). Explaining (and improving!) deaf children's poor mathematical performance: Combining perspectives from cognitive psychology, language, and education research. Society for Research in Child Language Preconference: Development of Deaf and Hard-of-Hearing Children, Seattle, WA.
15. Coppola, M. and \*Gagne, D. (2013). Narrative coherence in an emerging language. Poster presented at the 11th Theoretical Issues in Sign Language Research Conference, London, England.
16. Davidson, K., \*Gagne, D. (January 2014). Vertical representation of quantificational domains. Poster presented at Linguistic Society of America conference, Minneapolis, MN.
17. Davidson, K., \*Gagne, D. (September 2013). Vertical representation of quantificational domains. Poster presented at Sinn und Bedeutung conference, Basque Country, Spain.
18. Davidson, K., Goodwin, C. & Lillo-Martin, D. (2013, July). Language Transfer in ASL/English Bimodal Bilingual Children with CIs. Presented at Theoretical Issues in Sign Language Research (TISLR) 11; London, UK.
19. Davidson, K., Lillo-Martin, D. & Chen Pichler, D. (2013, November). Spoken language development in native signing children with cochlear implants. Presented at Boston University Conference on Language Development (BUCLD) 38; Boston, MA.
20. de Marchena, A., Garcia-Perez, R. M., & Eigsti, I. M. (May, 2013). Components of perspective taking in autism. Paper presented at the International Meeting for Autism Research (IMFAR-13), San Sebastian, Spain.
21. Eagan, E.T., Wallace, S.E., & Coelho, C. (2013, November). Use of an iPad with TouchChat to facilitate conversation for an individual with severe aphasia. American Speech-Language-Hearing Assoc. Convention, Chicago, IL.

22. Earle, S., and Myers E. (2013). The effect of sleep on learned sensitivity to a non-native phonetic contrast. Paper presented at the December 2013 meeting of the Acoustical Society of America.
23. Earle, S., Spaulding, T., & Grela, B. (2013, June). To match or not to match: The effect of matching children with SLI and typical children for nonverbal IQ on nonverbal IQ. Poster presentation at the Symposium on Research in Child Language Disorders, Madison Wisconsin.
24. Eigsti, I-M., Stevens, M., Schultz, R., Naigles, L., Kelley, E., Orinstein, Al, Tyson, K., Troyb, E., Barton, M. and Fein, D. (2013, May) Neural Activation to Sentences in Individuals with High-Functioning Autism, Typical Development, and Autism Spectrum Disorder Optimal Outcome. International Meeting for Autism Research, San Sebastian, Spain.
25. Eigsti, I. M., Col Cozzari, G., Rosset, D., Da Fonseca, D., & Deruelle, C. (May, 2013). Lack of Embodied Effects on Stimulus Encoding in HFA. Paper presented at the International Meeting for Autism Research (IMFAR-13), San Sebastian, Spain.
26. Eigsti, I. M., Stevens, M., Schultz, R., Naigles, L., Kelley, E., Orinstein, A., ... Fein, D. A. (May, 2013). Oral presentation: Neural Activation to Sentences in Individuals with High-Functioning Autism, Typical Development, and Autism Spectrum Disorder Optimal Outcome. Paper presented at the International Meeting for Autism Research (IMFAR-13), San Sebastian, Spain.
27. Eigsti, I.M. (2013, August). Language and Mind in Autism. Society for Research in Child Language Disorders. Keynote speaker. Madison, WI.
28. Eigsti, I.M. (2013, July). Language and Mind in Autism. International Congress of Linguists. Oral Presentation. Geneva, Switzerland.
29. Fein, D. (2013, May) Screening, Diagnosis, and Intervention in Albania. Presented at Global Autism Public Health Initiative meeting, International Meeting for Autism Research, San Sebastian, Spain.
30. Fein, D. (2013, May). Social/Emotional Functioning in Optimal Outcome Children with a History of Autism Spectrum Disorders. International Meeting for Autism Research, San Sebastian, Spain.
31. Fein, D., Tyson, K., Barton, M., Eigsti, I-M., Naigles, L, Troyb, E., Orinstein, A. & Helt, M. (2013, May) Social/Emotional Functioning in Optimal Outcome Children with a History of Autism Spectrum Disorders. International Meeting for Autism Research, San Sebastian, Spain.
32. Fitch, A., Fein, D. A., & Eigsti, I. M. (May, 2013). Detail and gestalt focus in spontaneous descriptions by individuals with optimal outcomes from ASD. Paper presented at the International Meeting for Autism Research (IMFAR-13), San Sebastian, Spain.
33. Flaherty, M., Goldin-Meadow, S., Senghas, A., & Coppola, M. (2013). Growing a spatial grammar: The emergence of verb agreement in Nicaraguan Sign Language. Poster presented at the 11th Theoretical Issues in Sign Language Research Conference, London, England.
34. \*Gagne, D., Coppola, M. (September 2013). Modality Effects in Developmental Psychology: An interdisciplinary approach yields new integrative insights. Poster presented at the Northeast Conference for Teachers of Psychology, Bridgeport, CT.
35. Glushan, Z., & Calabrese, A. (2014, January). Unaccusative Unergatives: Russian and Italian Parallels. The 88th Annual Meeting of the Linguistic Society of America, January 2-5, 2014, Minneapolis, MN
36. Haisley, L., Hardy, S., Manning, C., Barton, M. & Fein, D. (2013, May) Analysis of the Ages and Stages Questionnaire 3rd Edition (ASQ-3) Compared to the Modified Checklist for Autism in Toddlers - Revised (M-CHAT-R): An Update. International Meeting for Autism Research, San Sebastian, Spain.
37. Hashim, P. Cofman, N., Mukerji, R., Tillman, D., Perszyk, Terner, J.S., Travesio, R., Landi, N., Mayes, L.C., Persing, J.A. & McPartlan, J.C. (May, 2013) Specificity of Atypical Neural Development for Language in Infants At Risk for ASD. Poster presented at the IMFAR meeting, San Sebastian, Spain.

38. Herlihy, L. E., Brooks, B., Dumont-Mathieu, T., Barton, M., Robins, D. L., & Fein, D. (2013, April). Closing the Screening Gap: Demographic Factors and Symptom Presentation for Toddlers who Screen Positive on the M-CHAT(-R). Society for Research in Child Development, Seattle.
39. Jashar, D., Brennan, L., Robins, D., Barton, M., and Fein, D. (2013, May) DSM-5 Criteria Applied to Toddlers Diagnosed with ASD by DSM-IV-TR. D. International Meeting for Autism Research, San Sebastian, Spain.
40. \*Jenkins, T., Coelho, C., & Coppola, M. (April, 2014). Effects of gestures restriction on discourse quality. Poster presented at the Cognitive Neuroscience Society Annual Conference. Boston, MA.
41. Johns, A., van der Lely, H., & Magnuson, J. S. (2013, April). Structure-driven expectations for animacy drive early left event-related potential negativities that are not overridden by contextual expectations. Poster presented at the 20th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
42. Johns, A., van der Lely, H., & Manuson, J. S. (2013, July). Early Event-Related Potentials (ERPs) sensitive to animacy expectations in sentence comprehension are not overridden by context. Proceedings of the 35th Annual Meeting of the Cognitive Science Society, 3992.
43. Johnson, K., Lillo-Martin, D. & Nevins, A. (2014, January). I suoni, i segni e le forme del linguaggio (Sounds, signs, and structures of languages). Invited presentation, Rome's International Science Festival; Rome.
44. Kelty-Stephen, E., Fein, D., & Naigles, L. (2013, April). Language development in children with ASD: A longitudinal study of grammar and lexicon. Poster presented at the Society for Research in Child Development, Seattle, WA.
45. Kelty-Stephen, E., Fein, D., & Naigles, L. (2013, May). Language development in children with ASD: A longitudinal study of grammar and lexicon. Paper presented at the International Meeting for Autism Research, San Sebastian, Spain.
46. Kelty-Stephen, E., Tek, S., Fein, D., & Naigles, L. (2013, November) Specific effects of joint attention on language development in children with ASD. Poster presented at the Boston University Conference on Language Development, Boston.
47. Kelty, E., Fein, D., and Naigles, L.(2013, May) Detail and Gestalt Focus in Spontaneous Descriptions by Individuals with Optimal Outcomes From ASD. International Meeting for Autism Research, San Sebastian, Spain.
48. Koulidobrova, E. & Lillo-Martin D. (2013, November). A 'point' of inquiry: The case of the (non-) pronominal IX in ASL. Presented at Pronouns @ Tübingen: The Impact of Pronominal Form on Interpretation; Tübingen, Germany.
49. Kurian, A. M., Zhao, J., Magnuson, J., & Rueckl, J. (2013, November). Phoneme transposition effects in spoken word recognition. Poster presented at the Psychonomic Society, Toronto.
50. Landi, N. (2013). New Directions in Cognitive Neuroscience Research on Dyslexia (November, 2013). Presented at the 2013 annual meeting of the International Dyslexia Association, New Orleans, LA.
51. Landi, N. (August, 2013). Reading and language impairments, behavioral, neuroimaging and genetic perspectives. Presented at the International Dyslexia Association, CT Branch. Southern Connecticut State University, New Haven CT.
52. Landi, N. (November 2013). Reading and language impairments, behavioral, neuroimaging and genetic perspectives. Presented at the 2013 annual meeting of the International Dyslexia Association, New Orleans, LA.
53. Large, E. W. (2013). Neurodynamics of music. 9th Annual NeuroMusic Conference, McMaster Institute for Music and the Mind, McMaster University, Hamilton, Ontario, Nov 23, 2013.

54. Lê, K., Coelho, C., Mozeiko, J., Krueger, F., & Grafman, J. (2013). Does Brain Volume Loss Predict Cognitive & Narrative Discourse Outcomes in Traumatic Brain Injury? American Speech-Language-Hearing Assoc. Convention, Chicago, IL, November, 2013.
55. Lê, K., Coelho, C., Mozeiko, J., Krueger, F., & Grafman, J. (2013). The relationship between brain volume loss in TBI and measures of cognition and narrative discourse. Clinical Aphasiology Conference, Tucson, AZ, May, 2013.
56. Lillo-Martin, D., Quadros, R., Chen Pichler, D. & Fieldsteel, Z. (2014, January). Language Choice in Bimodal Bilingual Development. Presented at Linguistic Society of America (LSA) Annual Meeting; Minneapolis, MN.
57. Ludwig, N., Robins, D. & Fein, D. (2013, May). Sex Differences in the Clinical Profiles of Children at Risk for Autism Based On the Modified Checklist for Autism in Toddlers (M-CHAT). International Meeting for Autism Research, San Sebastian, Spain.
58. Magnuson, J. S. (2013, November). Interactive activation models simulate phoneme restoration with appropriate linking hypotheses. Poster presented at the Society for the Neurobiology of Language, San Diego.
59. Mozeiko, J., Myers, E., and Coelho, C. (2013) Neurobiological change following intensive therapy for chronic mild aphasia: An fMRI study. Presented at the November 2013 meeting of the Society for the Neurobiology of Language.
60. Myers, E.B., Mesite, L., Johns, A., & Magnuson, J. (2013). How the brain process talker variability: The role of expectation. Presented at the November 2013 meeting of the Society for the Neurobiology of Language, San Diego.
61. Naigles, L., Suh, J., Eigsti, I-M., Kelley, E., Orinstein, A., Tyson, K., Troyb, E., Barton, M. & Fein, D. (2013, April). Linguistic Strengths & Weaknesses in Optimal Outcome Children with a History of Autism Spectrum Disorders. Society for Research in Child Development, Seattle.
62. Naigles, L. (2013, July) Grammatical strengths and weaknesses in children with autism: Multiple comparisons of comprehension and production across development. Paper presented at the International Congress of Linguistics, Workshop on Language and Mind in Autism. Geneva, Switzerland.
63. Naigles, L., Guerrera, K., Petroj, V., Riqueros Morantes, J., Lillo-Martin, D. & Snyder, W. (2013, November). The Compounding Parameter: New Evidence from IPL. Presented at Boston University Conference on Language Development (BUCLD) 38; Boston, MA.
64. Naigles, L., King, D. & Fein, D. (2013, April) Shifting attention during language processing in typically developing children and children with ASD. Poster presented at the Society for Research in Child Development Biennial Meeting, Seattle.
65. Naigles, L., Suh, J., Eigsti, I. M., Kelley, E., Orinstein, A., Tyson, K., ... Fein, D. A. (May, 2013). Linguistic strengths & weaknesses in optimal outcome children with a history of autism spectrum disorders. Paper presented at the International Meeting for Autism Research (IMFAR-13), San Sebastian, Spain.
66. Navarro-Torres, C., Jyotishi, M., Goodwin, A., Fein, D & Naigles, L. (2013, May) Comparing Grammatical Items in Spontaneous Speech Vs. Parent Report in ASD. International Meeting for Autism Research, San Sebastian, Spain.
67. Navarro-Torres, C., Tovar, A., Fein, D., & Naigles, L. (2013, April). Is Negation a Productive Morphosyntactic Form for Children with ASD? Poster presented at the Biennial Meeting of the Society for Research in Child Development, Seattle, WA.
68. Navarro-Torres, Tovar, A., Fein, D & Naigles, L. ( 2013, April). Is Negation a Productive Morphosyntactic Form for Children with ASD? Society for Research in Child Development, Seattle.

69. Park, J., Cho, S. W., Lee, S. J., Nam, M., & Naigles, L. (2013, April). Syntactic Bootstrapping in Korean: typically developing children and children with Autism. Poster presented at the Biennial Meeting of the Society for Research in Child Development, Seattle, WA.
70. Petrosino, R., Grimaldi, M., Miglietta, S. & Calabrese, A. (February, 2014). (A)symmetries and phonological (under)specification in speech perception. Present at the 40th Incontro di Grammatica Generativa (Italian Generative Grammar Meeting), University of Trento, Italy.
71. Quadros, R. M., Lillo-Martin, D., Koulidobrova, E. & Chen Pichler, D. (2013, July). Noun Phrases in Koda Bimodal Bilingual Acquisition. Presented at Theoretical Issues in Sign Language Research (TISLR) 11; London, UK.
72. \*Rendall A.R., Truong D.T., \*Castelluccio B.C., Eigsti I.M., Fitch R.H. (2013, November). Language deficits in autism and assessment of the Cntnap2 mouse. Poster session at the Society for Neuroscience Conference, San Diego, CA.
73. \*Richie, R., & Yang, C. (2013, July). Elicitation and analytic methods for documenting the lexicons of emerging signed languages. Poster presented at the 11th Theoretical Issues in Signed Language Research, London, England.
74. \*Richie, R., Yang, C., & Coppola, M. (2013). Modeling the emergence of lexicons. Paper presented at the 38th Annual Boston University Conference on Language Development, Boston, MA.
75. \*Richie, R., Yang, C., & Coppola, M. (2013). Modeling the emergence of lexicons in homesign systems. Paper presented at the 35th Annual Cognitive Science Society Conference, Berlin, Germany.
76. Rhimzhim, A. & Naigles, L. (2013, April) Morphosyntactic Bootstrapping in Verb Acquisition in a Split-Ergative Language: Evidence from Hindi. Poster presented at the Society for Research in Child Development Biennial Meeting, Seattle.
77. Roscillo, D., Montanaro, S., Lomibao, J. & Theodore, R. M. (2013). Talker-specific perceptual processing. Presented at the 16<sup>th</sup> annual Frontiers Exhibition in Undergraduate Research, University of Connecticut, Storrs, Connecticut.
78. Rubin, A., \*Shaw, K. E., & Bortfeld, H. (2013). Sensitivity to audiovisual speech synchrony in preverbal infants. Poster presented at the annual meeting of the University of Connecticut's Language Fest, Storrs, CT. April 27<sup>th</sup>.
79. Salvador, K., Sylvia, R., Bisailion, M., & Theodore, R. M. (2013). Adaptation to talker-specific phonetic variation in adults with dyslexia: Preliminary findings. Presented at the 16<sup>th</sup> annual Frontiers Exhibition in Undergraduate Research, University of Connecticut, Storrs, Connecticut.
80. \*Shaw, K. E., Bortfeld, H., Baart, M., & Vroomen, J. (2013). Infants' audiovisual speech integration hinges on underlying temporal dynamics: Evidence from sine wave speech. Poster presented at the annual meeting of the Society for Research in Child Development, Seattle, WA. April 21st.
81. \*Shaw, K. E., Powers, L., & Bortfeld, H. (2014). Infants are sensitive to audiovisual speech asynchrony. Poster presented at the annual meeting of the Cognitive Neuroscience Society, Boston, MA. April 7<sup>th</sup>.
82. \*Shaw, K. E., Rubin, A., Castagnetti, J., & Bortfeld, H. (2013). Infants are sensitive to audiovisual speech synchrony. Poster presented at the annual meeting of the Psychonomic Society, Toronto, Canada. November 15th.
83. \*Smith, G. (2014, March). Event representations in collective and distributive readings: an on-line study. Poster session presented at the 27th Annual CUNY Conference on Human Sentence Processing, Columbus, OH.
84. Sorcinelli, A. Irwin, J., Gumbkowski, N. Broncazio, L., Preston, J. & Landi, N. (2013, May). Diminished Audiovisual Speech Integration for Children with Autism Spectrum Disorders.

- Poster to be presented at the at the 25th APS Annual Convention, May 23-26, 2013 at the Washington Marriott Wardman Park in Washington, D.C., USA.
85. Spaulding, T. (2013, November). Equating children with SLI and typical controls on task difficulty: Do persistence deficits remain? Poster presentation at the American Speech-Language-Hearing Association, Chicago, Illinois.
  86. Spaulding, T., & Eagan, E. (2013, Nov.). Executive skills of preschool children with SLI: Impact on service provision. Technical presentation at the American Speech-Language-Hearing Association, Chicago, Illinois.
  87. Springer, V., Giroux, A., McSherry, H., Campbell, J., & Theodore, R. M. (2013). Contextual influences on phonetic categorization in developmental populations. Presented at the 16<sup>th</sup> annual Frontiers Exhibition in Undergraduate Research, University of Connecticut, Storrs, Connecticut.
  88. Suh, J., Eigsti, I-M., Naigles, L., Barton, M., Orinstein, A., Tyson, K., Troyb, E., Rosenthal, M., Helt, M., Schultz, R., Stevens, M., Kelley, E. & Fein, D. (2013, May) Peers' Evaluation of Stories Told by Optimal Outcome Children with a History of Autism Spectrum Disorders. International Meeting for Autism Research, San Sebastian, Spain.
  89. Suh, J., Eigsti, I.M., Naigles, L.M., Barton, M., Kelley, E.A., & Fein, D. (2013). Narrative Competence and Pragmatic Language Abilities of Optimal Outcome Children with a History of Autism Spectrum Disorders as Evaluated by Peer Ratings. Poster presented at the 2013 meeting of the American Academy of Clinical Neuropsychology, Chicago, IL.
  90. Theodore, R. M. (2013). Talker-specific perceptual processing: Influences on internal category structure. Proceedings of the 14<sup>th</sup> Annual Conference of the International Speech Communication Association (Interspeech 2013), 2802-2806.
  91. Theodore, R. M., Campbell, J. A., Bisailon, M., & Roscillo, D. (2013). Contextual influences on speech perception in developmental populations. Presented at the 166<sup>th</sup> meeting of the Acoustical Society of America, San Francisco, California.
  92. Theodore, R. M., Myers, E. B., & Lomibao, J. (2013). Accommodating talker-specific phonetic detail: Influences on internal category structure. Presented at the 35<sup>th</sup> annual conference of the Cognitive Science Society, Berlin, Germany.
  93. Theodore, R. M., Myers, E. B., & Lomibao, J. (2013). Listeners' sensitivity to talker differences in voice-onset-time: Phonetic boundaries and internal category structure. Presented at the 21<sup>st</sup> International Congress on Acoustics, Montreal, Canada.
  94. Tovar, A.T., Fein, D. A. & Naigles, L. (2013, April). How Integrated are Production and Comprehension of Tense/Aspect in Young Children with ASD? Poster presented at the Society for Research in Child Development, Seattle, WA.
  95. Tovar, A.T., Navarro-Torres, C., Goodwin, A., Jyotishi, M., Fein, D. A. & Naigles, L. (2013, May). Comparing Grammatical Items in Spontaneous Speech vs. Parent Report in ASD. Poster presented at the International Meeting for Autism Research, Donostia / San Sebastián, Spain.
  96. Troyb, E., Knoch, K., Herlihy, L., Pajardo, C., Stevens, M., Chen C-M., ... Fein, D. (2014, February). Do Restricted and Repetitive Behaviors During Early Childhood Predict School-Age Outcome Among Children with Autism Spectrum Disorders? Poster to be presented at the annual meeting of the International Neuropsychological Society, Seattle, WA.
  97. Xie, Xin, & Myers, E.B. (2013) The role of language and musical experience in talker identification: investigating the language familiarity effect. Presented at the 2013 meeting of AMLaP.
  98. Zhang, C., Magnuson, J. S., Landi, N., Peng, G., & Wang, W. S-Y. (2013, November). Adjust the expectation of the phonetic form of words according to a talker's voice: A phonological mismatch negativity study. Poster presented at the Society for the Neurobiology of Language, San Diego.