

your source for VL2 news, projects, and research findings



**VISUAL LANGUAGE
& VISUAL LEARNING**



Students from six different Science of Learning Centers gathered to discuss the posters



VL2 welcomes students from other centers for conference: iSLC 2011

Every year for the last three years, the National Science Foundation has supported a conference for all the students and post-doctoral fellows affiliated with each of the six Science of Learning Centers (hence the title, iSLC). March 25-27, VL2 hosted the fourth conference. Tom Allen, the co-PI of VL2, and Shilpa Hanumantha, a VL2 post-doctoral fellow, applied for and received the grant; they then organized the conference with the support of many volunteers.

The theme of iSLC 2011 was "Researching Communication and Communicating Research." Not only did attendees present and discuss ongoing Science of Learning Center research on language and communication, they also considered the implications for communicating research findings in a way that is accessible to all audiences, including laypeople, educators, and policymakers. The broader goal of the conference was to enhance the opportunities for cross-center collaboration and to share strategies for communicating research. The conference consisted of symposia,

networking activities, poster sessions, and workshops on methodology.

More than eighty-five students and post-doctoral fellows from all six of the Science of Learning Centers (VL2, CELEST, LIFE, PSLC, SILC, and TDLC) attended. Science of Learning Center

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**VL2 OFFICIAL
NEWSLETTER
2011**

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EDITED & DESIGNED BY KRISTEN HARMON & MELISSA MALZKUHN

alumni were also present and participated in a panel that was recognized as one of the highlights of the conference. On the panel, young faculty members and researchers discussed the transition between graduate studies and a career in the sciences.

For attendees who were not familiar with bilingualism, American Sign Language, or deaf people, presentations from VL2 principal investigators and researchers provided a detailed and nuanced perspective on the theme, "Researching Communication and Communicating Research." Tom Allen, Laura-Ann Petitto, Pilar Pinar, and Donna Morere discussed the implications of bilingualism for the brain and for education. VL2 pre-doctoral students also presented; Peter Crume presented on the use of ASL phonological instruction in an ASL/English classroom, and So-One Hwang discussed temporal integration windows in the visual processing of language. A number of pre- and post-doctoral students, research assistants, and VL2 researchers were involved with posters presented at iSLC: Dorri Daggett, Peter Hauser, Raylene Paludneviene, Paul Dudis, and Brittany Freil (Assessing the use of ASL Depiction); Sarah Fish and Marlon Kuntze (The Effects of Participant Structures in ASL-

English Bilingual Classrooms); Wyatt Hall, Leah Murphy, Shilpa Hanumantha, and Donna Morere (Assessment in the VL2 Toolkit); Lynn Hou and David Quinto-Pozos (Assessment and Potential Signed Language Disorders); Yunjae Hwang, Thomas Allen, Selina Agyen, and Melissa Malzkuhn (VL2 Participant Database); Gabrielle Jones, Jenny Singleton, and Shilpa Hanumantha (Ethical Considerations in Research Practices); Clifton Langdon (Depiction in Acquisition of ASL); Millicent Musyoka, Melissa Anderson, Concetta Pucci, M. Diane Clark, and Paul Miller (Study of Deaf Readers); and Gregory Witkin (EELS).

By [hosting] iSLC at Gallaudet, participants will benefit by learning about Deaf people and our unique and important contributions to the understanding of bilingualism.
- Shilpa Hanumantha

Attendees at the fourth annual iSLC experienced a uniquely bilingual, bimodal, and visually-oriented academic conference. All sessions were, of course, either signed or

interpreted, but the conference theme extended well beyond the simple provision of access. Interpreters, the organizers emphasized in their opening remarks, were there not just for the deaf people; they were also there for the hearing participants. A team of professional interpreters worked all three days of the conference, and they were also available for networking in the hallway and at the coffee table. Masters of Interpreting students volunteered for continued socializing and networking at a local bar after the conference. Some stayed as late as 2 a.m. If there were no interpreters available, participants were encouraged to try other modes of communication. All attendees had been given iSLC tote bags that included a pen, notepad, and a "100 Signs for Travelers" handbook.

Shilpa Hanumantha, the co-PI of this year's iSLC conference, said that the re-centering of this conference—from hearing to visual norms for academic conferences—happened early on. Instead of hiring an interpreter for deaf participants on phoned-in conference calls, all committee members joined text-based forums,



such as those available through iChat. Some of the hearing members learned early on that the response times and interaction patterns are different for visual/textual forms than they are for voice-based conference calls. Dr. Hanumantha noticed that it took a while for hearing participants to catch up with the rapid back-and-forth text interchanges between Deaf participants. The text-based forum for discussion provided a distinct advantage in that all the material could then be saved and archived for later review. The planners also established visual norms early on in the conference by explaining how best to use and respond to visual and tactile cues as well as how to work with interpreters.

Hearing and non-signing attendees welcomed learning more about Deaf people and sign language through a film series with Dr. Jane Norman, which included the "Gallaudet movie," a short film, "Deafhood: The Journey" and finally, "101 Things That Separate Deaf from Hearing." Saturday night's entertainment was the "Wild Zappers" dance performance (and Q&A afterwards). Hearing attendees with no

knowledge of Deaf people appreciated the different—and visually appealing—ways of framing cultural and linguistic differences.

Provost Stephen Weiner's campus tour was a welcome diversion and an innovative conclusion to the conference. His tour of the campus "haunted sites" was enhanced by the many facts he shared about the history of research—often unethical—done on Deaf people and signed languages.

When asked about the benefits of the conference for each attendee, iSLC co-PI Shilpa Hanumantha observed, "I think this iSLC meeting is a great opportunity for many reasons; we can pave a way for Deaf and hearing networking, better encourage and maintain the growth of the scientific research community, become allies through potential research projects in the future, share information about possible future jobs, and finally, gain a better understanding of why communication is important."

Indeed, one of the biggest highlights of the conference was the increased amount of discussion and

collaboration between Deaf and hearing researchers. Many networking opportunities appeared that would not have happened otherwise, or at least, not as easily.

Now iSLC2011 is history, but the insights, experiences, and new forms of collaborating are not. Many eyes were opened to the richness and complexity of ASL and bilingualism, and quite a few left iSLC 2011 thinking about the innovative ways in which the theme, "Researching Communication and Communicating Research," was heightened by being set at a Deaf and bilingual/bimodal, university.

Congratulations to all those involved and who were key to the conference's success, including, but not limited to: Thomas Allen (VL2), Shilpa Hanumantha (VL2), Colleen Davy (PSLC), Justin Harris (SILC), Katie Van Horne (LIFE), Matthew Wisniewski (TDLC), Christopher Kanan (TDLC), Concetta Pucci (VL2), Jeffrey Doon (CELEST), and all committee members for Local Planning, Posters & Symposia, Workshops, Center Overviews, Interpreters, and Networking.



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research

Bilingualism in the news

Bilingualism is getting more and more attention in the media, and Gallaudet/VL2 is contributing to the exciting science findings that are coming to light about the bilingual/bimodal brain.

In March, *Science Daily* and the U.S. *News and World Report* featured VL2 researchers and affiliate researchers Jill Morford, Erin Wilkinson, Agnes Villwock, Pilar Pinar, and Judith Kroll's recent article in *Cognition*, "When Deaf Signers Read English: Do Written Words Activate their Sign Translations?" This article continues to get coverage in other news and commentary sites.

Prior to that, on February 18, the American Association of the Advancement of Science (AAAS) sponsored the panel, "Crossing Borders in Language Science: What Bilinguals Tell Us about the Mind and Brain." VL2 partners and affiliate researchers Karen Emmorey and Judith Kroll were speakers. Information from that panel was sent out by the Associated Press and then picked up and reported in outlets as varied as the *Huffington Post*, *The Guardian*, *Scientific American*, and the *Bloomberg Business Week*.

VL2 welcomes new partnership for international research opportunities

Also in February, the National Science Foundation announced fifteen new projects funded in its Partnerships for International Research and Education (PIRE) program. The PIRE program, established in 2005, supports "innovative, international research and education collaborations to advance new knowledge, to promote development of a diverse and globally-engaged scientific and engineering workforce, and to build the institutional capacity of US universities in

international collaborations." ("NSF Builds More Partnerships for International Research and Education").

VL2 is partnering with Pennsylvania State University on the PIRE, "Bilingualism, Mind and Brain: An Interdisciplinary Program in Cognitive Psychology, Linguistics and Cognitive Neuroscience." With leadership from PI Judith Kroll, this project supports U.S., European, and Asian institutions that together are investigating the cognitive and neural consequences of bilingualism.

The goal of this partnership is to unify understanding of three topics: the nature of the bilingual mind and brain, the process of bilingual language development and the consequences of bilingualism for cognition. The project also includes the study of deaf bilinguals. The project will broaden participation in science by including scientists across a broad spectrum of ages and linguistic abilities, and also many from under-represented groups in the sciences. The two domestic partners for this PIRE are Gallaudet and Yale University's Haskins Lab. Seven partners at five international sites are also involved: two in Spain, two in China, one in Germany, one in the UK, and one in the Netherlands.

According to PI Judith Kroll, from PSU, the site of the PIRE grant, "Juggling two languages in a single mind is a common situation for many of the world's speakers. The insight that drives our planned PIRE is that research on bilingualism is a tool for revealing fundamental principles about the mind and the brain that are otherwise obscured in research that focuses on individuals who speak a single language only. The international network that forms the backbone of the PIRE project exploits the presence of different types of bilinguals at

each location to investigate universal properties of language."

Two questions driving the bilingualism PIRE are: What are the cognitive and neural processes that enable multiple language use? And what are the consequences of bilingualism for cognition? Understanding the answers to these questions requires that the researchers take a comparative approach across different populations of bilinguals as well as consider the context of language learning and use.

A primary goal for this PIRE is to develop an infrastructure for research and education based on a "common ground" model for international collaboration. Each partner contributes unique expertise and research facilities, and this collaboration results in a shared knowledge base that likely could not be achieved independently. Tom Allen, the co-PI of VL2, and Jill Morford, a University of New Mexico professor and VL2 researcher, are collaborating with researchers from PSU, the Netherlands, and Spain on cross-language interactions and their cognitive consequences.

One discovery of second language learning is that it is nearly impossible for bilinguals to completely turn off one language when using the other language. Research suggests that both languages are active in the brain for even bilinguals who are proficient in both languages; it was previously thought that this was the case for only those who were deep in the process of



Jill Morford with James Graham, a graduate student

connections

learning the second language and who were not yet proficient. Now we know that although the nature of "cross-language competition" may change with developing second language skill, the lexicon and the grammar of the two languages continue to influence each other.

For example, it was known that in spoken language bilinguals, words from both languages are activated even in monolingual situations. However, it wasn't clear if that cross-language activation happened in languages in two different modalities. In the *Cognition* article on ASL-English bilingualism mentioned earlier, Morford—in conjunction with Judith Kroll, the PI of the PIRE grant, Gallaudet University faculty Pilar Pinar, and Erin Wilkinson, a former VL2 pre-doctoral student and current faculty member at the University of Manitoba in Canada—found that ASL is active in the brain during English word recognition. This finding suggests that all bilinguals, hearing or deaf, build mental connections between their languages regardless of whether or not they have identical forms.

Pennsylvania State University is the site for the PIRE grant, and this partnership

allows Gallaudet students to train with bilingual experts at PSU and at some of the international sites. Partners with the PIRE already have eight undergraduate students signed up for summer research experiences abroad.

In exchange, students from PSU and other universities can come to Gallaudet to learn about bilingualism in a visual modality. This summer, Cari Bogulski, a Ph.D. student in cognitive psychology at Penn State, will be visiting VL2. While at VL2, she will explore her interest in learning more about how language

[At this meeting], whenever there is a finding, the question of whether it would apply in the case of ASL-English bilinguals comes to the fore, and there is an overwhelming feeling that an answer to THAT question is critical for the advancement of science.

—Dr. Thomas Allen

processing can affect more general cognitive processes; recent evidence suggests that bilinguals are advantaged in comparison to monolinguals on tasks that tap into aspects of executive function, such as inhibitory control, task-

switching, and cognitive flexibility. Bogulski is investigating the hypothesis that bilinguals are better foreign language learners than monolinguals by virtue of having learned another language already. She is specifically interested in whether bilinguals are better at tasks of pattern recognition and general learning; these are general cognitive tasks that are fairly independent of language processes. Bogulski is studying ASL and plans to investigate whether or not Deaf signers show a "bilingual advantage" in regards to executive function and also in learning new languages.

In February, Tom Allen and Jill Morford represented VL2 at the PIRE retreat at Pennsylvania State University, held in Judy Kroll's Center for Language Science. All of the partners (domestic and international) were present.

After the meeting, Jill Morford said that "it was very exciting to see the diversity of languages that are studied under the umbrella of bilingualism at PSU's PIRE. The VL2 partnership adds to that diversity by promoting the inclusion of signed languages in the scientific study of bilingualism. This partnership promises to be fruitful for VL2 and PIRE."



Tom Allen and Jill Morford

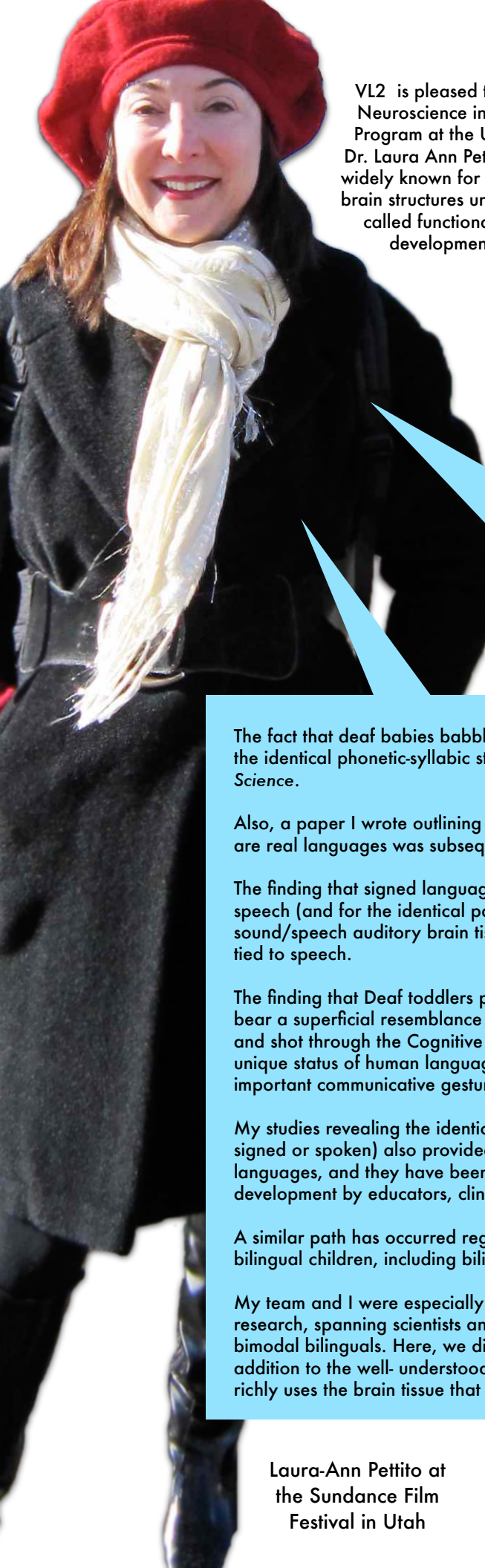


Judith Kroll, PIRE
Principal Investigator



PARTNERSHIPS FOR INTERNATIONAL
RESEARCH AND EDUCATION

PIRE WEBSITE: <http://cls.psu.edu/pire>



VL2 is pleased to announce that Dr. Laura Ann Petitto, currently a Professor of Cognitive Neuroscience in both the Department of Psychology and the Faculty of Medicine's Neuroscience Program at the University of Toronto, will become the new Science Director of VL2 on June 1, 2011. Dr. Laura Ann Petitto is a Cognitive Neuroscientist and a Developmental Cognitive Neuroscientist, widely known for her discoveries about the biological foundations of language. She has uncovered key brain structures underlying early human language processing and, with brain imaging technology called functional Near-infrared Spectroscopy (fNIRS), she has tracked the typical and atypical development of these brain structures across the human lifespan (infants through adults).

Which of your studies are you most proud of, and why?

Every research project is a genuine labor of love. A researcher asks a question that is important for a community, discipline, and science at large, and then sets out in passionate pursuit of the answer, weighing fairly and equally all possible answers until the data teaches the researcher which answer is best. In short, I appreciate the knowledge that has been gained from every scientific discovery that has ever come out of my laboratory, spanning the full 37 years of them!

Which elements in your work have gotten the most coverage in academic and non-academic circles?

The fact that deaf babies babble on their hands like hearing babies babble vocally with their tongues (producing the identical phonetic-syllabic structures) was a finding that was selected to be on the cover of the journal *Science*.

Also, a paper I wrote outlining the linguistic, cultural, and, importantly, biological reasons why signed languages are real languages was subsequently translated into dozens of languages by others around the world.

The finding that signed languages recruit the identical brain tissue as is observed for hearing people processing speech (and for the identical parts of language structure, like phonology, which was presumed to be exclusive to sound/speech auditory brain tissue) challenged our very conceptions of human language as being inextricably tied to speech.

The finding that Deaf toddlers produce Pronoun Reversals like hearing children, even though pronouns in ASL bear a superficial resemblance to a gestural point, further demonstrated the linguistic status of signed languages, and shot through the Cognitive Science, Psychological Science, and Linguistic communities as evidence of the unique status of human language (including sign language) as distinct from communicative gestures, however important communicative gestures indeed are!

My studies revealing the identical timing milestones in young monolingual children's acquisition of language (be it signed or spoken) also provided yet another demonstration of the equal biological status of signed and spoken languages, and they have been used as a yardstick to identify children's typical and atypical language development by educators, clinicians, and medical practitioners.

A similar path has occurred regarding my studies of the typical and atypical language milestones for young bilingual children, including bilingual children acquiring a signed and a spoken language (bimodal bilinguals).

My team and I were especially thrilled to see the positive reaction to our considerable body of brain imaging research, spanning scientists and educators, revealing the nature of "the bilingual brain," including the brains of bimodal bilinguals. Here, we discovered fundamental linguistic advantages in all bilinguals, which exist in addition to the well-understood cognitive advantages. We've also found intriguing ways that the bilingual brain richly uses the brain tissue that nature gave us for language!

Laura-Ann Pettito at
the Sundance Film
Festival in Utah

(continued...)

Similarly, our findings about reading acquisition, skilled reading, and "the reading brain," in both monolinguals and bilinguals, are already impacting language policy in the United States and Canada. We've studied how best to teach young bilinguals to read (Two reading systems at the same time? Or, first one then followed by the other?), which reading approach is most optimal and when/what age (whole word versus phonics approach), and, crucially, how the age of first bilingual language exposure can serve as a predictive tool for bilingual language and reading success. Among the many answers that this research program have identified, we found first-time reading advantages in young bilingual children as compared to monolingual children. But what really knocked our socks off was this: Our research showed that early bilingual language exposure is best for dual language reading development! To be sure, early bilingual language exposure affords such a positive impact on reading and language development that it can even ameliorate the known impact that low SES can have on literacy. You can be sure that this finding has garnered the attention of educators across the borders!

Some of your early work with animal communication was featured in the independent documentary, "Project Nim," which was shown at the 2011 Sundance Film Festival. How was Sundance?

Being at Sundance was a thrilling experience because it is truly a context that celebrates human creativity and our beautiful inventive minds. As a Cognitive Neuroscientist, therefore, of course, I loved it! Project Nim is a wonderfully made film by Oscar Award winner James Marsh ("Man on Wire," 2008) and is about the chimpanzee named Nim Chimpsky, who was named after the famous Linguist Noam Chomsky. The chimp's life took an unplanned tragic turn at the end, yet he was adored and loved in his earlier years, and his relationships with humans were meaningful, deep, and very instructive. Like all of us who have ever looked at our dogs and cats and wondered "What are you thinking?" Project Nim (which took place in the 1970s) was an attempt to understand the content of a chimp's mind (what he felt, what he thought) by teaching him sign language in a loving family-like context (indeed without any of the reinforcement or punishment methods used by earlier researchers).

One thing that the film doesn't make clear is that I was actually the person who was on the Project the longest, having first begun working with Nim when he was age 3 months old and continuing until he was nearly 4 years old.

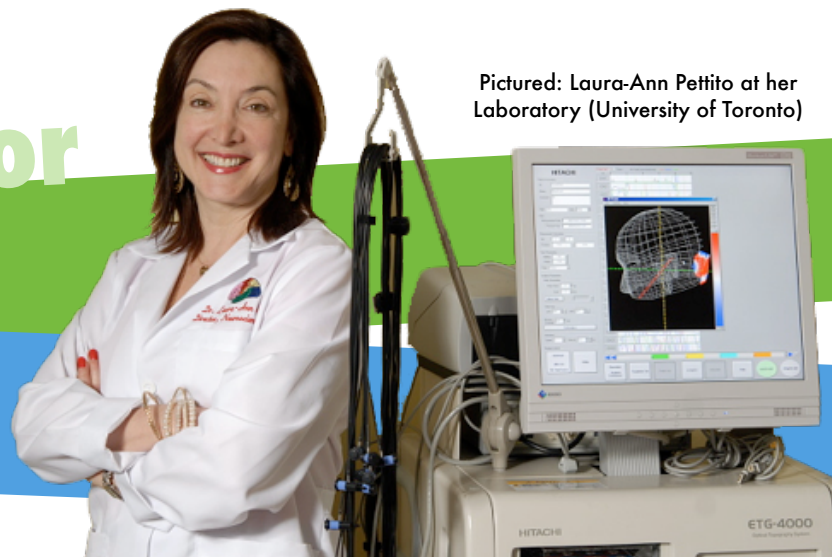
What was it like? Imagine being graced with the luck of living with E.T., though a much more dangerous and life-threatening version (wait until you see the film)! And as we attempted to teach Nim sign language, he in turn taught us so much more. He taught us that chimps have complex minds, memories, and feelings and a rich capacity to communicate. Yes! But did Nim actually learn American Sign Language just like a human child and use it just like we humans do? No. This conclusion is deeply respectful of his differences, and very exciting. How fascinating it was to learn the similarities and important differences between the species. From this period of history, we gained understanding of the secrets of the ape and human minds. How wonderful is that!

Pictured: Laura-Ann Pettito at her Laboratory (University of Toronto)

science director

LAB URL:

<http://www.utoronto.ca/~petitto/index.php>



outreach

Collaborating with University of Maryland/IGERT

Engaging high school students in research

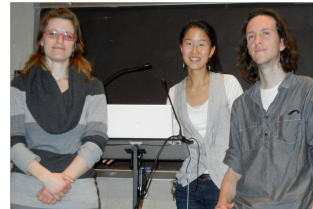
In late February, in conjunction with the National Science Foundation's IGERT/University of Maryland program on the "Biological and Computational Foundations of Language Diversity," VL2 pre-doctoral students So-One Hwang and Clifton Langdon



and VL2 Community Engagement Coordinator Melissa Malzkuhn participated in an outreach event with Northwood High School students (Silver Spring, MD).

In two separate presentations, Malzkuhn, Hwang, and Langdon led the students in hands-on activities involving the depictive elements of visual language, and then, once the students felt comfortable and engaged, the three presenters discussed language science and modality.

The presenters talked about some of the reasons why researchers look to sign language to help understand the language properties of the brain, the role that visual language has in establishing a language foundation for young Deaf and hard of hearing children, and some interesting findings from VL2 studies. One such study found a relationship between sign language and improved mental spatial rotation and another study found that after a certain age, deaf people's visual processing changes to adapt to deafness. Langdon cited information from the first two VL2 research briefs, on the importance of fingerspelling for reading and the advantages of early visual language. Hwang presented her research on the time properties of sign language as opposed to speech when it comes to processing meaning in the brain. Malzkuhn discussed some of the VL2 work that has been done on the importance of eye gaze and visual attention for learning.



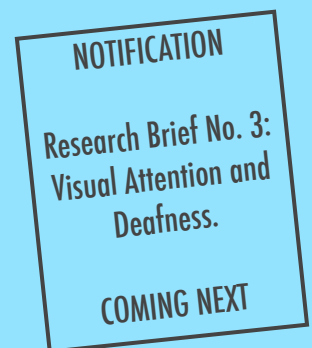
Afterwards, the potential future scientists, educators, and linguists asked thoughtful questions about visual attention and why early visual language is important. They also posed questions about where to take classes in American Sign Language.

The Integrative Graduate Education and Research Traineeship (IGERT) program was established in 1997 by NSF for meeting the challenge of "educating U.S. Ph.D. scientists, engineers, and educators with the interdisciplinary backgrounds, deep knowledge in chosen disciplines, and technical, professional, and personal skills to become in their own careers the leaders and creative agents for change" ("Introduction to the IGERT Program").

The IGERT program at the University of Maryland-College Park offers students and faculty opportunities and resources for interdisciplinary training and collaborative research. Gallaudet University is a partner for this innovative language science community through VL2 and the Linguistics Department. At the moment, researchers from UMD and Gallaudet/VL2 are collaborating on cognitive neuroscience and perceptual studies related to American Sign Language.

Key Findings on the Advantages of Early Visual Language:

- The brain is most receptive to language acquisition during "sensitive periods" early in a child's development.
- Deaf and hard of hearing children who receive early intervention services have been found to have better language outcomes up to age five.
- High levels of family involvement have been found to produce greater language development outcomes in deaf and hard of hearing children.
- Acquiring a complete first language during early childhood is critical for later reading comprehension.
- Learning two languages [that is, American Sign Language (ASL) and English] is advantageous for deaf and hard of hearing children.
- A mother's signing skills are predictive of later language development in deaf or hard of hearing children.
- A language foundation is an important factor in spoken language development.



RESEARCH BRIEF NO. 2

& education

VL2 students participate in UMD/IGERT interdisciplinary research workshops

Last January, students from VL2 participated in IGERT "Winter Storm 2011," a two-week workshop organized by the UMD language science community, in relation to the NSF/IGERT program. VL2 post-doc Shilpa Hanumantha and VL2 students Gabrielle Jones, Corrine Occhino-Kehoe, Kate Marsh, Clifton Langdon, and So-One Hwang participated.

According to participant and Winter Storm student organizer, So-One Hwang, "Successful interdisciplinary research requires not only a common mission among researchers with a diverse range of knowledge and background but also – especially for students – the opportunity to learn together, teach one another, and to meet face-to-face to build a strong foundation for collaboration."

At Winter Storm, the participants received an introduction to programming and statistics with R and learned about current and planned language research. They also received advice on professional development, met with faculty members, and collaborated on designing a study to examine the mechanisms of processing visual information among deaf readers.

VL2 at the Biennial Meeting on Child Development

VL2 was well represented at the prestigious Society for Research in Child Development Biennial Meeting in Montreal, Canada. The program for this conference offers multidisciplinary, international, and high-caliber, leading-edge presentations from a range of well-regarded institutions and researchers, including the National Institutes of Health, The National Science Foundation, the Centers for Disease Control and Prevention, the Eunice Kennedy Shriver National Institute of Child Health and Human Development, and others.

Laura-Ann Petitto, the incoming VL2 Science Director (as of June 1, 2011), presented a poster on "How the Bilingual Reading Experience Can Change a Developing Brain: New Insights From FNIRS," with Kaja K. Jasinska and Marissa Valarie Malkowski, on April 2.

VL2 researchers, affiliate researchers, and partners Jill Morford, Erin Wilkinson, Pilar Pinar, Judith Kroll, Charlotte Enns, Marlon Kuntze, Lynn McQuarrie, and Sarah Fish presented at the preconference on the Development of Deaf and Hard of Hearing Children, March 30.

VL2 plays integral role in First Year Seminars

VL2 Community Outreach Coordinator Melissa Malzkuhn's yearly presentation on VL2 research and research ethics for Gallaudet University's First Year Seminar students continues to generate positive buzz among GU students and faculty. In her presentation to GU freshmen, Melissa covers significant findings from VL2 projects, research ethics and the history of scientific research on deaf people. GU First Year Experience Interim Director Maria Waters wrote to let us know that students enjoyed her "fascinating presentation" and that students considered Melissa's presentation and historical perspective on research a highlight of their first year experience.

Waters also noted that FYS faculty consider Melissa's presentation a "must keep" in the first year curriculum. In particular, FYS faculty appreciated the information about research for the deaf community. This is also an important opportunity for students to consider becoming scientists and researchers themselves. At the close of Melissa's presentation, students are also encouraged to participate by signing up for VL2's research database. Researchers can then use this database for contacting students for possible involvement in VL2 studies. To date, over 400 students have signed up.

THE ULTIMATE BLOCK PARTY IN NYC!

Peter Hauser (pictured left), Rain Bosworth, Kristen Harmon and Melissa Malzkuhn represented VL2 at the "Ultimate Block Party" in New York City's Central Park. This event was organized by Play for Tomorrow, a consortium led by Temple University's CIRCLE Program; University of Delaware, College of Education and Human Development; Children's Museum of Manhattan; and Learn, Johns Hopkins University NeuroEducation Initiative and Brain Science Institute. NSF Science of Learning Centers were among the endorsing organizations.

Several Science of Learning Centers set up interactive activities that centered around the science of learning and play for young children aged 12 and under. The event attracted over 50,000 people, in a single day and received positive reviews. Both young-and older-participants had fun playing games, drawing, engaging in a big "Simon Says" game, and getting involved with different activities designed to stimulate learning and cognitive development.

The VL2 team had a great time meeting parents and educators and talking with them about VL2's research and the importance of sign language for early linguistic and cognitive development. The next day, the team met with other representatives of different Science of Learning Centers to discuss innovative ways of bringing research findings to the community. All in all, it was a fun day and organizers are hosting other block parties in the future!



Refining VL2's mission

After a meeting last April with members of VL2's Executive and Science Management Team, VL2 Co-PI's Laura-Ann Petitto and Tom Allen released a new statement of the center's mission. It is:

The purpose of the Science of Learning Center at Gallaudet University on "Visual Language and Visual Learning (VL2)" is to advance fundamentally the Science of Learning specifically involving how aspects of human higher cognition are realized through one of our most central senses, vision.

We seek to determine the effects of visual processes, visual language, and social experience on the development of cognition, language, reading and literacy.

We study these learning processes in monolinguals and bilinguals across the lifespan in order to promote optimal practices in education in both formal and informal settings.

Carol Padden, MacArthur Foundation Fellow

Carol Padden, the former Interim Science Director of VL2, is the recipient of a 2010 MacArthur Foundation fellowship. This award, commonly known as a "genius" award, is considered an investment in a person's originality, insight, and potential.

Congratulations from all of us at VL2! We always knew you were a genius.

McCaskill accepts new job

VL2 Research Administrator Angela McCaskill has moved into a lovely—and important—new office in Gallaudet University's historic College Hall. She has a new job, one that is pivotal for bridging communities at Gallaudet. As of January, she became the Chief Diversity Officer of Gallaudet University. VL2 congratulates Angela on her new job.

VL2 strong presence in 2nd issue of Deaf Studies Digital Journal

Last fall, VL2 and GU's ASL and Deaf Studies Dept. released the second issue of DSDJ. The theme of the second issue is "Science and the Senses" and it features work by David Corina, with Sarah Hafer, Jill Morford, with Joshua Staley and Bry Burns, and Peter Hauser. See dsdj.gallaudet.edu.

VL2 involved with Clerc Center ASL Standards Development

On Feb. 7, the Laurent Clerc National Deaf Education Center at Gallaudet University announced a contract award for the development of ASL content standards for K-12 students. VL2 researchers are an integral part of the coalition of experts that will develop these standards and assessment measures.

VL2 researchers Jenny Singleton, Dr. Charlotte Enns, and post-doctoral student Melissa Herzig are members of the team developing the standards.

Visual language and EHDI

Feb. 20-22, VL2 researchers Peter Hauser and Jenny Singleton attended and presented at the Early Hearing Detection and Intervention Conference, in Atlanta, GA. As part of a pre-conference workshop on "Language Acquisition and Brain Development of Children Who Are Deaf or Hard of Hearing," Singleton and Hauser presented what parents need to know about language, cognition, and the developing deaf child. They covered cognitive neuroscience, psychosocial, and psycholinguistic research on deaf and hard of hearing children. They specifically addressed research on visual attention, memory, language, executive function, and visual engagement; much of this research comes directly from VL2.

Hauser and Singleton emphasized the importance of attending to deaf and hard of hearing children's visual needs, and in that context, they discussed the relationship between language acquisition and cognitive development.

"Neuroscience of Diversity" brings Harvard to Gallaudet

VL2 is collaborating with Dr. Matthew Schnepps, with the Harvard-Smithsonian Center for Astrophysics, on the development of content and video for an online course on neuroscience. Schnepps has a grant from the Annenberg Foundation to support this work, and he is working closely with a team of neuroscience researchers and educators to produce quality on-line learning materials.

One chapter in this course focuses upon "the neuroscience of diversity." On April 11-12, Alex Griswold, the team's videographer and an award-winning documentary and television producer, interviewed and filmed Gallaudet faculty and researchers; these interviews will become "pop-up video" in the course.

Harmon consultant in MLA national press conference

In Dec., VL2 Communications Officer and IRE Team Leader Kristen Harmon was involved with a national press conference on the Modern Language Association's 2009 language enrollment report. This report shows that ASL is the 4th most commonly taught language in the United States, and enrollment in ASL classes has increased by 16.4% since 2006. Professor Harmon joined MLA President Rosemary Feal, Professor Scott McGinnis with the Defense Language Institute, and Professor Russell Berman of Stanford University in the discussion of the report and its findings. Kristen gave a statement on the advantages of learning ASL for both hearing and deaf people. This information was picked up in various publications, including the *New York Times* and *U.S.A. Today*.



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