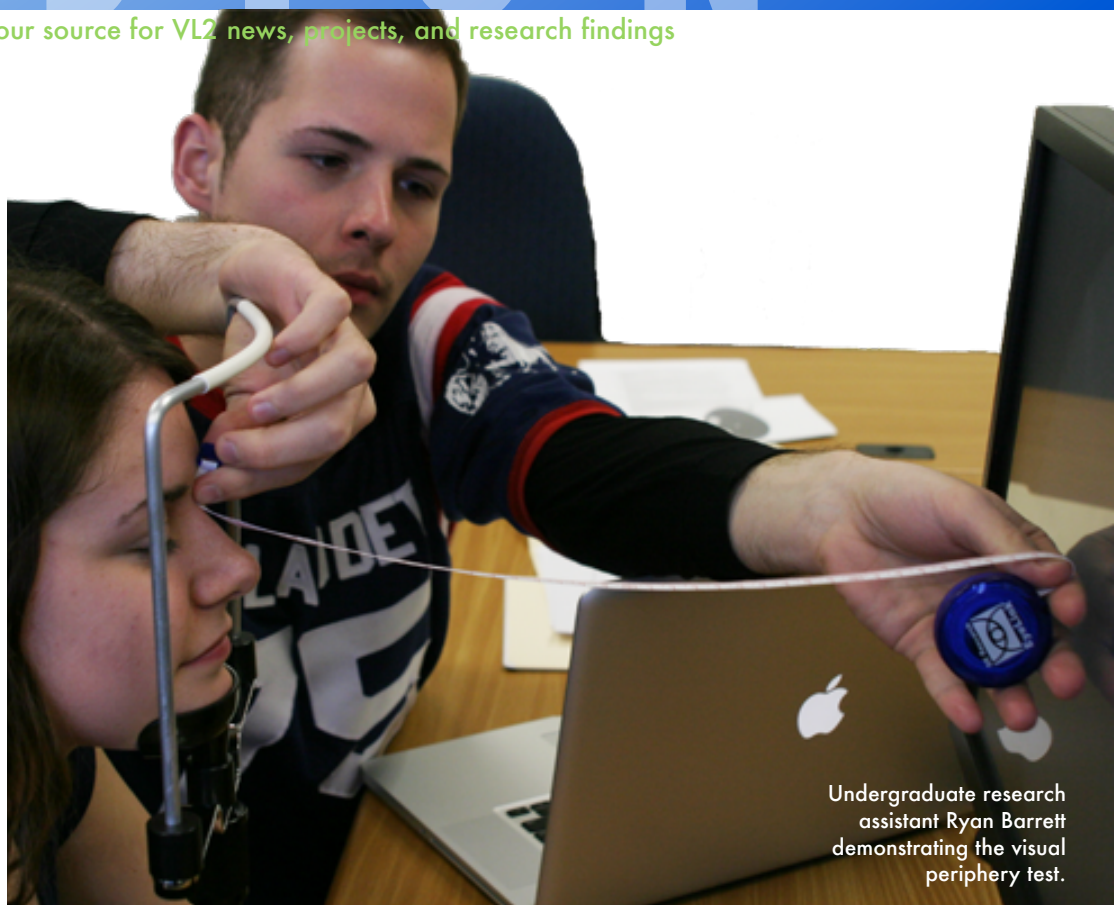




## VISUAL LANGUAGE & VISUAL LEARNING



Undergraduate research assistant Ryan Barrett demonstrating the visual periphery test.

### Do deaf people really see better? Assumptions put to rest with new results.

#### *Studying the impact of deafness on visual attention.*

Many people assume that the loss of one sense results in the improvement of remaining modalities. That is, they expect that blind people will hear better and that deaf people will see better. However, the effects of prolonged and profound sensory loss seem to be much more specific. In the case of deaf individuals, research conducted by Daphne Bavelier, Peter Hauser, and Matt Dye has suggested that deafness results in enhanced attention to the visual periphery. What this

means is that deaf people do not necessarily see better, but they are better able to detect objects and events in their peripheral vision than do hearing people. This advantage is especially clear with cluttered visual scenes.

*"People tend to assume that a loss of a sense enhances other senses. Deaf people do not see better but deafness results in enhanced peripheral vision."*

*Dr. Matt Dye, Cognitive Scientist*

Furthermore, Bavelier, Hauser, and Dye's research reveals that this effect is hard to observe in young children (less than 10 years of age); exploration of this delayed emergence of enhanced peripheral attention is

ongoing. Finally, it appears that sign language has little effect on this peripheral enhancement. These studies, with deaf adults who do not use a sign language, reveal that they receive the same benefits as Deaf native signers, and hearing adults who are native signers (sometimes referred to as CODAs) look the same as hearing adults who are non-signers. The fact that deaf individuals distribute their visual attention differently clearly has

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VL2 OFFICIAL  
NEWSLETTER  
2010

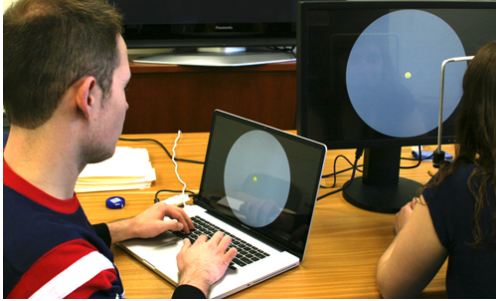
Visual Language and Visual Learning (VL2) is a Science of Learning Center, funded by National Science Foundation Grant # SBE-0541953. Any opinions, findings, and conclusions or recommendations expressed are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.



# research

CONTINUED FROM PAGE 1

implications for the layout of classrooms and other formal learning environments. Distraction by unpredictable peripheral events may impact learning. Bavelier, Hauser, and Dye are also planning studies that will investigate how this altered attentional distribution influences the way a deaf reader's eyes move across written texts. Data collection was completed in the Bavelier Lab at the University of Rochester, the Hauser lab at NTID, VL2's Lab Suite at Gallaudet's Hall Memorial Building, and at several camps for deaf children.



Pictured here is Ryan Barrett, an undergraduate research assistant at the University of Illinois, Urbana-Champaign. He works with Dr. Jenny Singleton and Dr. Matt Dye in their labs, and he was the research assistant who conducted the project with both Deaf native signers and CODAs. Pictured above are figures from the experiment that were used in the tests designed to identify peripheral attention skills. Participants were asked to indicate three things in regards to the stimuli; motion, location, and frequency of the "smiley faces." A sample stimulus set is shown above. Dye's lab analyzes all the data to see the impact of being deaf versus

knowing a sign language.

Barrett also collected data for a VL2 funded study looking at the impact of the age of onset of deafness on changes in the visual attention of deaf people. The aim of this research is to determine if there might be a 'sensitive period' early in infancy when becoming deaf results in a reorganization of the visual system. Dr. Dye explains, "It's a bit like the idea of a 'sensitive period' for language ... a time zone early (or late!) in development, when the brain is most susceptible to some kind of alteration." Bavelier, Hauser, and Dye plan to publish follow up studies.

## Did you know?

Brain scans of the activation of the amygdala (the emotional center) of deaf signers and hearing non-signers show that deaf signers recognize ASL facial expressions as linguistically significant while non-signers do not show any difference.

McCullough, S., Emmorey, K., & M. Sereno. (2005). *Neural organization for recognition of grammatical and emotional facial expressions in deaf ASL signers and hearing nonsigners*. *Cognitive Brain Research*, 22, 193-205.

(Note: Emmorey is a VL2-affiliated researcher but this study was not funded by VL2.)



## Research Brief: Fingerspelling & Reading

Dr. Sharon Baker, from the University of Tulsa, is coordinating the Preschool-12th grade outreach for VL2 's Integration of Research and Education effort. The focus here is on developing research briefs for educators and parents. Our goal is to find ways to share research with a broader audience, rather than keeping research findings within university settings and academic conferences. The IRE team has worked and released their first research brief, based on existing published research that looks at fingerspelling and how it influences vocabulary acquisition. Key findings with in the literature include:

- Deaf families fingerspell to their deaf children when they are very young.
- Early exposure to fingerspelling helps these children become better readers.
- Fingerspelling, reading, and writing are interrelated.
- Fingerspelling facilitates English vocabulary growth, and the larger the lexicon, the faster new vocabulary is learned.
- Fingerspelling positively correlates with stronger reading skills. Deaf and hard of hearing children who are good fingerspellers are good readers, and vice versa.

This brief can be found online at [vl2.gallaudet.edu](http://vl2.gallaudet.edu) under the "For Educators" page. Feel free to download the PDF version. We are now in the process of developing several more briefs to release throughout the summer. Visit our website often for updates.

Sharon Baker, Ed.D  
Coordinator of P-12 Programs



# & education

## Science can contribute to policy change

High quality scientific research can and is having an impact on public policy. In some cases, public policy may lag behind the science, and in other cases, the science may reveal assumptions underlying public policy. Responses and amendments to a recent bill in California, AB 2072, shows how research and advocacy can partner in the development of public policy.

As reported in the California media and in the Deaf blogosphere, Deaf advocacy groups and organizations opposed a bill, AB 2072, proposed by Assembly member Tony Mendoza. This bill that would allow hospitals to provide every infant with a hearing test and then offer information on community resources to parents of children diagnosed with hearing loss. The bill would also allow parents with a diagnosed deaf child to meet with

an audiologist and receive treatment information.

However, Deaf advocacy groups noted that the materials disseminated in relation to this bill described American Sign Language as a "communication option," a visual tool similar to total communication and cued speech, rather than as a full language. In addition, the CA Deaf community noted that the supporters of the bill were largely for-profit organizations focused upon "listening and speaking" therapies and that the developers of the bill did not include Deaf organizations. Additionally, the bill would house these services under the Department of Developmental Services, which opponents suggested presented a medical model for understanding Deaf people.

## "The unbiased delivery of health and visual language information must be insured."

-Dr. David Corina, Researcher

Deaf organizations and advocates asked for amendments, namely, the recognition of American Sign Language as a full-fledged visual language, clarification on the role of audiologists, and to move the services from the

Department of Developmental Services to the California Department of Education. The Senate Human Services Committee approved the bill, with amendments, on June 24, 2010.

Affiliated VL2 researchers and

"...it was a massive and well-coordinated effort by the Deaf Community."

-Rachel Mayberry, Ph.D.,  
on AB2072 outcome

California residents Rachel Mayberry and David Corina both saw the importance of bringing science to bear on policy; both wrote letters to the committee overseeing this bill. Mayberry has published research on language acquisition, the critical period for language learning, and the impact of a delayed first language on the development of a second language. Corina has worked in the field of cognitive science for many years and recognizes the importance of sign language in early language acquisition. Dr. Mayberry was impressed with how community input and involvement affected the legislative process. She said that "the outcome of AB2072 is actually highly positive, and an amazing story....My letter was only a miniscule part of a massive and well-coordinated effort by the Deaf Community."

NEWS FROM  
CALIFORNIA!

## Integration of Research & Education

VL2 is pleased to announce that Dr. Kristen Harmon is the new Director of Integration of Research and Education. Her work focuses on translational research, outreach, and on coordinating and integrating the efforts of University Programs, Community Outreach, and P-12 Programs.

Though Dr. Harmon joined the staff of VL2 recently, she began her professional career at Gallaudet University in 1999 and is currently a tenured Professor of English. As a professor, she taught undergraduate courses in the English department, the general studies interdisciplinary curriculum, and the Honors program. She also advised students doing their interdisciplinary capstone theses, some of which have been published. She is well respected by the campus community and was featured as a faculty member in the 2008 YOU issue of the student newspaper, The Buff and Blue. Dr. Harmon has published in several academic areas and her creative fiction and nonfiction have been featured in journals and anthologies. She is working, with a colleague, on an edited collection of Deaf American prose, past and present, which will be published by Gallaudet University Press. She has worked as an editor, writer, and a reviewer in several disciplines. One of her most memorable experiences was working with Jack Gannon, Jean Bergey, and Douglas Baynton on the script for "History Through Deaf Eyes," the traveling exhibition (2001-2006). See <http://deafeyes.gallaudet.edu>.

Dr. Kristen Harmon graduated *summa cum laude* from Culver-Stockton College in Canton, Missouri with a bachelor's degree in English, then continued her studies at the University of Missouri at Columbia where she earned a master's degree and a doctorate. Dr. Harmon was born deaf and was mainstreamed, but she became immersed in the Deaf community in her twenties. She was born in Louisiana, and raised in Texas, Oklahoma, and Illinois. Currently, Dr. Harmon lives in Maryland with her family, all of whom are Deaf.

Who is Kristen? Her colleagues at Gallaudet say that she walks really fast in the hallways, but they appreciate her thoroughness and insight. Her students say that she looks at her watch when they come in late, but that she has high expectations and is tough and fair. Her family says she's happiest when she's doing meaningful work and is engaged with a challenge, be it work, climbing a mountain peak, or on a hiking trail.



Dr. Kristen Harmon  
IRE Director



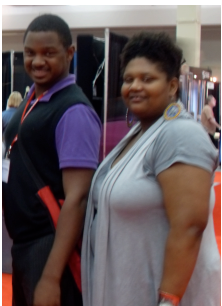
## Research ethics discussed at national conference for college educators

The Association of College Educators of the Deaf and Hard of Hearing (ACE-DHH), hosted their annual conference between February 18th and 20th, in Lexington, Kentucky. Dr. Jenny Singleton and Gabrielle Jones of University of Illinois, Urbana-Champaign, as well as Dr. Shilpa Hanumantha of Gallaudet University, presented their work on identifying and understanding the impact of existing research ethics regarding deaf participants and videotaping. Their research included focus group sessions and private interviews of deaf participants as well as deaf and hearing researchers to explore both sides of the issue and to develop new guidelines for informed consent prior to videotaping deaf individuals.



## Deaf People of Color Conference

Two VL2 undergraduates, Candace Myers and Jamaal Johnson, a postdoctoral fellow, Dr. Shilpa Hanumantha, and VL2 Research Administrator, Dr. Angela McCaskill, attended the Second National Deaf People of Color Conference in Portland Oregon, June 25-27. The conference provided an array of workshops related to People of Color including Black ASL, Rising Deaf Asian American Youth, and the Challenges Parents Face in Raising Deaf Children in the Barrio. One of the panels that VL2 team members found especially interesting was "On the Spot about Racism and Audism: A Dialogue among Deaf Panelists from Deaf Diverse backgrounds." Jamal "Deon" Johnson, when reflecting on his experience, commented that the conference was worthwhile and that he learned about leadership, particularly from Dr. Laurene



Simms' presentation on the importance of having diverse allies: "I learned from her that

people can't be successful if they don't have the support of their friends." There was also a special appearance of Gallaudet University's president, Dr. Alan Hurwitz, who gave the keynote address. His talk focused on heritage and how Deaf People of Color should value culture and traditions because everyone is connected by a common thread. Dr. Angela McCaskill said, "(President Hurwitz) also encouraged participants to dream and reach for the stars!"

## Keynote address on the Neuropsychology of the Deaf Individual

In March 2010, Dr. Peter C. Hauser gave the keynote address, "Neuropsychology of the Deaf Individual: Current Trends" at the International Mental Health and Deafness Conference in Buenos Aires, Argentina. There were over 500 attendees from every continent including parents, teachers, counselors, audiologists, speech language pathologists, psychologists, and medical doctors. Hauser shared some recent VL2 findings and talked about how it is important to realize that deaf and hearing individuals have different experiences and process information differently. In this address, Hauser emphasized that one couldn't assume that the best way for a hearing individual to learn is necessarily the best way for a deaf individual to learn.

## Piloting the VL2 Foundations Seminar

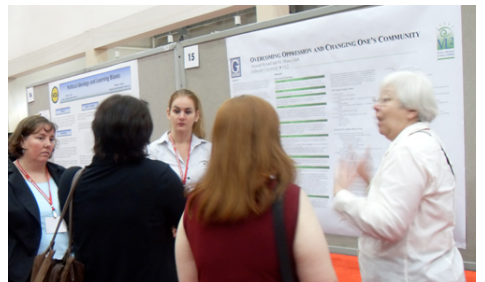
What do you do when you need to help students gain a basic understanding within an interdisciplinary field? There are no textbooks that present the information. At VL2 we asked all of the researchers involved with our team to suggest the articles that they felt were foundational to understanding their work. These seminal pieces were then the basis for a pilot of the VL2 Foundations Seminar that will be an introductory course in the proposed VL2 Interdisciplinary Cognitive Science Ph.D.

This past year the VL2 Fellows worked with the University Engagement Coordinator, Dr. Diane Clark, on testing the effectiveness of this structure. With some tweaking from the Fellows, the event was a major success. Post-seminar evaluations found that Fellows were bringing this information into their own coursework within their disciplines. The impact was positive enough that Fellows asked to continue with the dialogue next year--focusing

on newer ongoing research within VL2. They see these dialogues as allowing them to gain more contact with the VL2 researchers who can help them in the design and implementation of their own research. Contributors to this seminar were Wyatt Hall, Sarah Fish, Gabrielle Jones, Clifton Langdon, and Shilpa Hanumatha.

## Six posters on Deaf community, culture, and language presented at Convention of the Association for Psychological Science

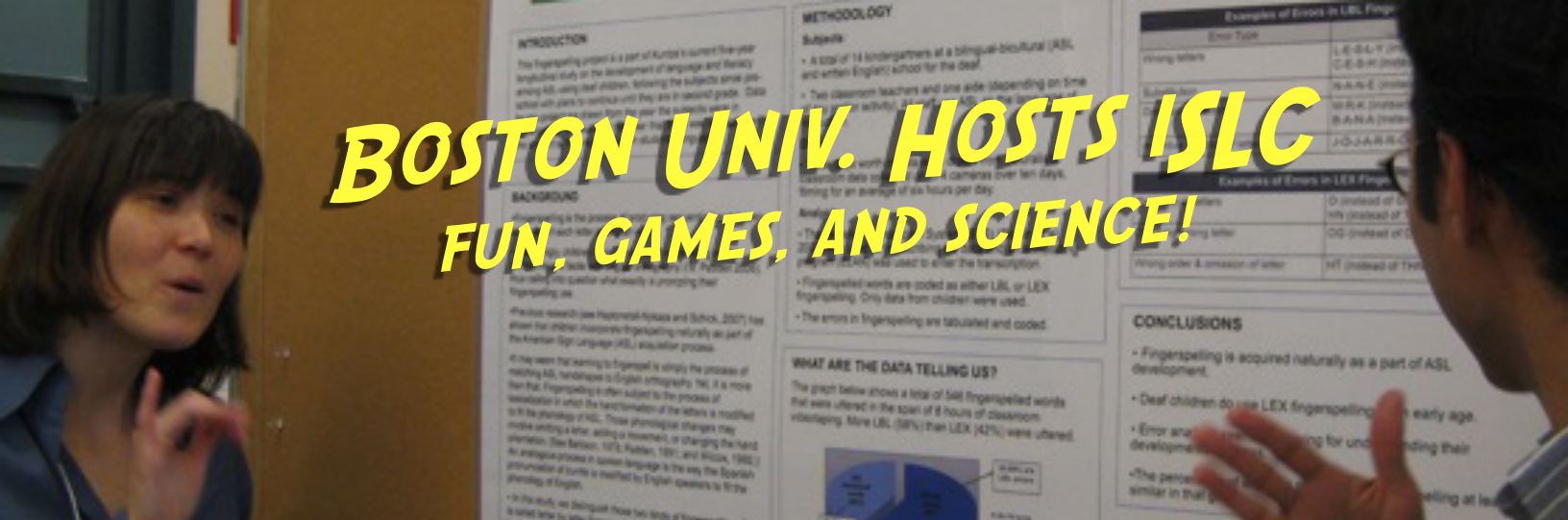
Between May 27-30, 2010, VL2 faculty, graduate students, and undergraduate students had poster presentations at the 22nd Annual Convention of the Association for Psychological Science (APS) in Boston, Massachusetts. The six posters varied in subject matter, ranging from early education of Deaf children to reading skills in Deaf adults to visual learning of words in American Sign Language. VL2 researchers discussed their findings and networked with research teams and laboratories from other universities.



When asked about her experience at the APS Convention, education graduate student, Millicent Musyoka, reported that she found the networking opportunities especially helpful, as the papers that she collected "helped me to build my reference data bank and to explore new areas."

School Psychology graduate student, Gizelle Gilbert, remarked how much she learned from other presentations: "[They] provided relevant information--some new and some old--that supported my research experience [...] which I will apply in my profession." Undergraduate researcher, Brittany Freel, indicated that she enjoyed the opportunity to "learn up-to-date information related to human behavior and psychology."





On May 23, junior researchers from all six SLCs attended the third annual inter-Science of Learning Center Student and Post-Doc Conference (iSLC) at the Science of Learning Center—CELEST, located at Boston University. What makes this conference unique is that it focuses on students and does not include senior researchers. The conference, from organization to presentations, is run entirely by SLC students. During this three-day conference, participants discussed their interests in understanding learning in various settings. Particular emphasis was placed on sharing and learning useful methods for conducting research. Information from each center was portrayed in three different ways: posters, symposia and workshops.

Posters included a short description of a project from design, to hypotheses, and predictions about findings. Participants chatted with each other about their projects throughout the conference. These networks benefit all SLC students' projects because they will be able to learn and apply new perspectives to their own methodologies.

Symposia presented research that was either completed or nearly completed. Symposium presentations were general session with all participants attending. Presentations were exciting and often funny. One symposium, "The Dirty Dish Dilemma," had the presenters explaining how washing dishes can be related to broader social learning through the concept of altruism.

VL2 Pre-doctoral Fellow, Gabrielle Jones, shared insights on the opportunities for networking; "Since this is the second time I've gone to the iSLC, I found myself getting to know the students, not only from VL2, but from other Centers as well. I was surprised to remember those who came up to my poster from last year and felt quite moved that they came back to see my progress. They raised excellent questions and admitted that they had never thought of how reading applies to deaf children in China and as a result we exchanged our overlapping work and emails. Through this encounter, we were thrilled to find out that we were going to attend the same 'Reading Research in Chinese' conference together this year in Toronto, Canada. We've kept in touch ever since."

Post-doctoral Fellow, Dr. Shilpa Hanumantha observed that students from VL2 felt they had a breakthrough in networking with others at this year's conference. Dr. Hanumantha described how one VL2 student, Sarah Fish, stood up and made an announcement about Deaf culture 'dos' and 'don'ts' (for instance, don't be afraid to tap a Deaf attendee on the shoulder, or how to use interpreters). Students from other SLCs reacted positively after Sarah Fish

emphasized that the interpreters were there not only for the deaf participants but the hearing ones as well. After that impromptu presentation, Shilpa said that they were approached to go to a bar at Fenway, and networking opportunities opened up. Naomi Berlove and Peter Crume volunteered as interpreters to facilitate this networking.

VL2 students also visited Lon Kuntze's lab, thanks to local hosts, Sarah Fish, Kelly Kim, Naomi Berlove, and Cynthia Goodman.

And what's more? Next year's iSLC will be hosted by VL2 at Gallaudet University and the students are engaged in the process of preparing another exciting meeting.



give 'em the Boston look!

(Kuntze's Lab Rats)



## Advisory Board Meeting

The weekend of March 26-28 was dedicated to VL2's Advisory Board meeting. Members-Board Chair Dr. Barbara Schrimmer, from the University of Detroit, Dr. Dan Slobin from the University of California in Berkeley, Dr. Jerker Ronnberg from Linkoping University in Sweden, Dr. Virginia Volterra from the Institute of Cognitive Sciences and Technologies in Italy, and Dr. Carol Fowler from Haskins Laboratories in Connecticut-all flew to Gallaudet University to discuss VL2 research, current and future. The Board was joined by members of the VL2 Science Management Team. The weekend was productive and everyone had the chance to review our science agenda and share ideas for future research collaborations.



## VL2 connects with "the soul of Asia" in Seoul

Community Engagement Coordinator, Melissa Malzkuhn, who also serves on the board of the World Federation of the Deaf (WFD) Youth Section, embarked on a trip to Seoul, South Korea for 10 days, doing both outreach for VL2 and the Deaf Studies Digital Journal. This trip also fulfilled her commitments to the WFD Youth Section. Malzkuhn noted that Seoul is called "the Soul of Asia," and commented that Seoul has a lot to offer with food, sights, and culture. Malzkuhn shared information on VL2 through a community presentation hosted by the Seoul Association of the Deaf. Over 70 people attended the presentation and were excited to learn about bilingualism, early language acquisition, and the concept of deaf gain.

## VL2 makes presence at Gallaudet Film Premiere

Held at the Atlas Theatre on H Street, just seconds from the Kendall Green, a Gallaudet promotional film was premiered to an audience of over 200 people, varying from community members, alumni, students, staff, faculty, and potential investors.

VL2 was one of the sponsors of both the event and the film's production. Melissa Malzkuhn, representing VL2, gave a brief presentation at the evening's event. She outlined the critical success and importance of VL2, and its contribution to a new era at Gallaudet. The film can be seen at [movie.gallaudet.edu](http://movie.gallaudet.edu).

## VL2 co-hosts Seminar on "Difference as Diversity"

On April 15th and 16th, VL2 co-hosted a two-day seminar on "Difference as Diversity: Emerging Perspectives on Deaf Gain, Disability, and Physical Diversity as an Enhancement of the Human Condition", with the Department of ASL and Deaf Studies and the School of Graduate Studies and Professional Programs. The keynote presenter was Professor James Giordano of the Potomac Institute for Policy Studies who is the director of the Center for Neurotechnology Studies. He has a joint appointment as a Senior Research Associate at the Wellcome Center for Neuroethics at the University of Oxford. Dr. Giordano is also working with the VL2 on the development of a graduate course on ethics.

## Film Production at UC Davis

In a partnership with the Deaf Studies Digital Journal, VL2 sent Melissa Malzkuhn on a "film production mission" at the University of California - Davis. Together with junior specialist, Sarah Hafer, and Dr. David Corina, they produced a signed version of Corina's work. The article will be featured in the second issue of the Deaf Studies Digital Journal: [dsdj.gallaudet.edu](http://dsdj.gallaudet.edu).

## G-VL2 with Paul Miller from the University of Haifa in Israel

VL2 welcomed Dr. Paul Miller (of the University of Haifa in Israel) and Dr. Tevhide Karghin (of Ankara University in Turkey) for a week at Gallaudet. The pair collaborated with our own Dr. Diane Clark on developing materials for an international project on poor and proficient readers. This project looks to identify successful methods used by deaf students for reading. The goal is to compare languages where phonology is clearly visible (like Turkish) to those where it is not (like Hebrew and English) to understand the importance of language structures. Dr. Miller also gave a G-VL2 presentation to local people involved with VL2 as well as students from different departments. His presentation inspired a lively and lengthy discussion.

## VL2 sponsors ECE Summit

"The early years are pivotal and crucial in a deaf child's linguistic and cognitive development." This was the theme seen over and over at the Early Childhood Education Summit that was led by Dr. Laurene Simms of Gallaudet University (Dept. of Education). The summit was at Gallaudet, over the weekend of April 23-24. We welcomed over 100 educators from all over the country who work closely with deaf children. The summit featured prominent researchers, most notably, keynote presenter Dr. Laura-Ann Pettito, from the University of Toronto who shared her work on cognitive science.

## Former REU student gets job with Corina Lab

Ryan Barrett, recent University of Illinois, Urbana-Champaign graduate, and an alumni of VL2's Summer Research Fellowship program (Summer 2009), got a job offer as a junior specialist with the Corina Lab. Ryan is thrilled to be joining a "fantastic team." Barrett commented, "visiting UCD during my internship with VL2 truly paid off."

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