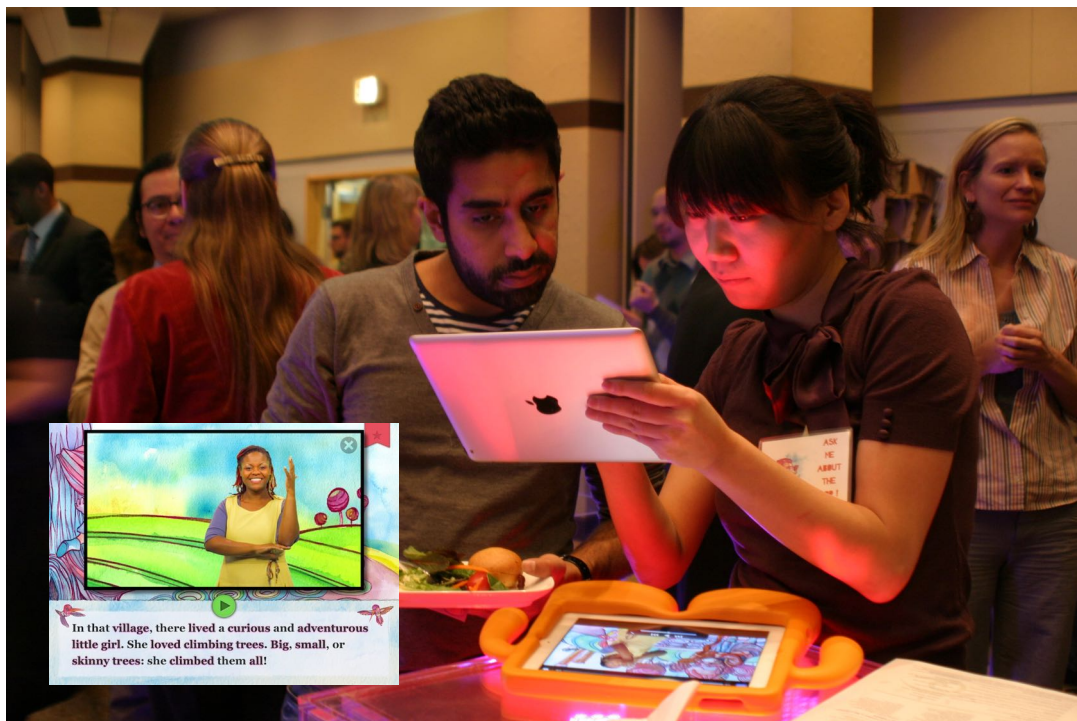




VISUAL LANGUAGE & VISUAL LEARNING



Song Hoa Choi, a research asst. with the Brain and Language Lab (BL2), demonstrates features in *The Baobab* (see inset) to **Bilal Chinoy** at the Feb. 4 "Launch" event hosted by Gallaudet U.

Launch of the 1st of VL2's Innovative Series of ASL- English apps for the iPad

On behalf of the many VL2 scientists and other researchers whose findings informed the design principles of the VL2 ASL-English storybook apps for the iPad, the VL2 team is pleased to announce that *The Baobab*—the first of a



planned series of VL2 storybook apps on the iPad—is now officially launched and ready for you!

Originally composed in ASL by a team of skilled ASL storytellers and scholars, including ASL-English "story architects" **Ben Bahan** and **Kristen Harmon**, *The Baobab* is a tale about a curious little girl who quite literally falls into an adventure. The story, told by ASL storyteller **April Woodard-Jackson**, is accompanied by gorgeous illustrations by Deaf artist **Yiqiao Wang**. (See screenshot above right).



Designed to be an interactive bilingual experience, the app features the story in both ASL and English and includes a glossary with 170 English to ASL words.

Planned and designed to facilitate language acquisition and literacy for

In this issue:

Co-PI notes: Allen & Petitto
Spotlight on Padden Lab
Lab Report: Eye-tracking
@Bosworth Lab

VL2 OFFICIAL
NEWSLETTER
2012

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WRITTEN AND MAINTAINED BY KRISTEN HARMON, PhD

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iPad app launch

Continued from Page 1

all young children—both deaf and hearing—the design principles of this app are based on research findings from VL2 and research

colleagues in the fields of Deaf education, sign language linguistics, neuroscience, and bilingual language acquisition and literacy.

Targeted for young children, but able to be enjoyed by everyone, this app reflects [“state-of-the-art innovation in bilingual language learning and research,”](#) from the way in which the two languages are presented to the presentation of content-based, grammatically correct ASL signs as shown by a fluent language model, to the emphasis upon best practices in bilingual ASL-English language acquisition and literacy, including the presentation of fingerspelling “sandwiched” between signs. Because they are built upon findings



from scientific studies, translational products such as the VL2 storybook apps are a critically important mechanism for parents and educators. Dr. **Laura-Ann Petitto**, Science



Director and Co-Principal Investigator of VL2, (pictured left) said, in an interview with Gallaudet University’s Public and Media Relations department, **“Early exposure to bilingualism provides tremendous higher cognitive, language, and reading advantages for young children and the advantages continue**

throughout their entire lifetime.”

“Research,” Petitto also said, **“has proven that these beneficial effects, known as the ‘bilingual advantage’ in child development, holds true for children learning two spoken languages as well as deaf children learning both ASL and English.”**

From start to finish, the app was developed by an all-Deaf team, from the story consultants for both ASL and English to the art to programming to videography. VL2’s Digital Innovation and Media Strategies Manager, **Melissa Malzkuhn** (pictured below right) designed and managed this app. Be sure to watch new VL2’s Storybook App page on Facebook (“VL2 Storybook Apps”) for more exciting news from Malzkuhn and her team over the next year! For more information about the app, go to the VL2 storybook website: <http://vl2storybookapps.com/>

To celebrate the official release of the first of VL2’s planned series of ASL-English storybook apps for the iPad, on the

evening of February 4, the Gallaudet University and VL2 communities gathered together on campus for the launch ceremony. Gallaudet University President **Alan Hurwitz** and Provost **Stephen Weiner** opened the occasion with celebratory remarks, followed by a short discussion and



overview of VL2’s mission and objectives presented by Laura-Ann Petitto. VL2 Co-PI **Tom Allen** provided some humorous insight into how the app came to be developed, and he also noted that this app represents an important merging of the strengths of science, art, and technology.

Finally, Melissa Malzkuhn closed the ceremony with a short discussion of the research principles that informed

the app’s design. Highlights from Malzkuhn’s presentation included:

- Research done on visual phonology in ASL and the ability to build literacy skills in English through this pathway (**Schick, Pinar, Morford, Padden, Emmorey**, and



of The Baobab

Petitto);

- The earlier the exposure to bilingual models, the better (**Hauser, Petitto**);
- The importance of providing rich content in early reading vocabulary (**Morford**), and so on.

Malzkuhn also identified key contributors to the app's development in the audience and gave away a custom-designed Baobab throw pillow to the young children featured



in the promotional video for *The Baobab*. Highlights from the ceremony were "tweeted live" on VL2's Twitter feed.

After the ceremony, attendees viewed *The Baobab* at multiple iPad viewing stations, and VL2 students and research assistants—all wearing "Ask me about the app" buttons—circulated around the room, pointing out features and answering questions.

VL2 scientists from the DC area and from around the nation mingled with members of the Gallaudet and D.C. communities in the elegantly-decorated ballroom. White sofas with custom-designed Baobab throw pillows were set up for visitors to settle into for long conversations.

Two special drinks were devised for the occasion, "appletinis" and a baobab drink. Framed original art from the development process of the app were spread throughout the room. (See photos below and left).

In a [video](#) developed by VL2's digital technician, **Wei Wang**, VL2 researcher

Carol Padden noted the beauty of the app and said that it was "amazing." GU



Communication Studies faculty member **Beth Benedict** said she has already started promoting the app in her early intervention work. Provost **Stephen Weiner** said that he was excited about this "new day" in the development of new tools to help parents and teachers teach reading. GU Linguistics faculty **Susan Mather** said that this was an inspiring and easy-to-follow app to use. And **Raychelle Harris**, a faculty member with GU's ASL dept., said that "the future has arrived!" For a lovely overview of some of the evening's highlights, see the ["VL2 Storybook](#)



[App Launch Celebration](#)" that Gallaudet's Video and Technology Services Dept. put together. Be sure to share information about [The Baobab](#) (which can be found on iTunes and in the Apple App Store) with your colleagues, partners in research and education, students, and children. We will continue in next month's newsletter with the "inside story" of how the app was developed. Photos courtesy of Wei Wang.

Dr. Thomas Allen, Co-Principal Investigator of VL2, noted, "An interactive, bilingual app, such as *The Baobab*, provides an opportunity for children to develop their language, reading, and literacy skills, and to move toward dual language fluency, while being happily engaged, and brings exciting advances to the design of educational apps for all young children."

research

Co-PI Notes from Laura-Ann Petitto and Tom Allen

Greetings from Santa Fe, New Mexico.

Amidst such a beautiful New Mexico setting, several of us from VL2 are attending the ACEDHH meeting this week (Feb 21-23), including **Laura-Ann Petitto, Tom Allen, Melissa Herzig, Adam Stone,** and **Diane Clark**, along with many other Gallaudet colleagues and friends from colleges around the continent. As a special treat, we

Important Dates to Remember!

- VL2 Executive Team Meetings, Wednesdays, 11:30-12:30
- Scientific Advisory Board, Sunday March 3, and Monday March 4, 2013
- Annual Report, April, 2013
- NSF Annual Site Visit, June 13-14, 2013

were thrilled to visit the New Mexico School for the Deaf, where we felt so honored to receive a fascinating presentation and tour of the school, followed by a wonderful reception at Dr. **Ronald Stern's** lovely home. There are such creative and important advancements happening at this remarkable school. What an exciting program we saw regarding how children learn and how best to teach them. Truly, we were inspired!

But looking back a few weeks beyond the gorgeous turquoise light of the New Mexico sky –

much farther back to the gray and taupe silhouettes of a late January and February D.C. skyline – we saw much preparation for the two big events that we sponsored at VL2. First, we had this year's *Strategic Focus Area meetings* (Feb 3-6, 2013), which brought together the Center's PIs from its labs around the nation and Canada. With our goal to share views, identify the Center's Legacy (high impact) science and translation, and discuss the Center's sustainability, you can be sure that we had a stimulating visit.

Yet in the midst of it all, on Monday night Feb 4, 2013, VL2 held a second exciting celebration. This was the night that **Melissa Malzkuhn** and her amazing team launched "The Baobab," the Bilingual ASL-English iPad storybook app for young children at the iTunes store. The evening was a brilliant success and everything about the event was simply beautiful. The Kellogg Center's grand conference room was transformed and rendered with a "look" of warmth and intimacy thanks to the wonderful

efforts of **Shanon Price** and the staff at Kellogg. Tall Plexiglas columns illuminated from below with saturated hues of blue, red, and yellow light, held iPads with The Baobab story ready for guests to try. After brief welcoming presentations from Melissa Malzkuhn, **President Hurwitz, Provost Weiner,** Laura-Ann Petitto, and Tom Allen, guests happily mingled and enjoyed good food, drink, and the fabulous Baobab!

While all of the above was transpiring, we were also hard at work revising the many materials associated with the PhD Program in Educational Neuroscience. This even entailed Melissa H., Laura-Ann, and Tom to provide a summary/defense of the proposal before Gallaudet's Council on Graduate Education on two occasions, and a presentation before the Gallaudet University Senate. Whew!

And without missing a heartbeat, we have now turned to advance the rather significant preparations necessary for the upcoming visit of our Scientific Advisory Board on



connections

March 3-4, 2013. This is a very pivotal year for VL2 as we turn towards a new horizon, Years 8 and 9 of our Center, and the many exciting new plans for the life and vitality of the VL2 Center beyond.

We look forward to sharing the many new plans for VL2's bright future with you all in the coming months!

Warmly,
Tom and Laura-Ann

Strategic Focus Area Retreat at GU, Feb. 3-5

February 3-5, all primary investigators of VL2 studies met at Gallaudet University for the second annual strategic focus area meetings. The SFA annual retreat is intended to provide a way for all center PIs and associated personnel at GU to share their findings as well as a way to promote further collaborations and synergetic discussion between all parts of the center.

PIs at the 2013 SFA retreat worked to identify shared Center-wide scientific

and translational discoveries and themes in order to best identify the markers of VL2's legacy. As the center prepares to enter its eighth year, VL2 looks to the future by continuing to invest in science and translation that will have lasting impact, science and translation that will serve and benefit the community we serve.



VL2 is a National Science Foundation-funded Science of Learning Center on Visual Language and Visual Learning, housed at Gallaudet University in Washington, D.C. Information in this newsletter is based upon work supported by the National Science Foundation under grant number SBE-1041725. For more information about the other Science of Learning Centers in the U.S., see:

The Learning in Informal and Formal Environments (LIFE) Center, University of Washington

Center for Learning in Education, Science, and Technology (CELEST), Boston University

Pittsburgh Science of Learning Center (PSLC), Carnegie-Mellon University

Spatial Intelligence and Learning Center (SILC)

Temporal Dynamics of Learning Center (TDLC), University of California, San Diego.



Spotlight: Padden Laboratory, UC-San Diego

The Padden Lab at the Center for Research in Language focuses on two lines of research. As part of VL2, we study the role of gesture in learning in deaf and hearing students. For this work, we collaborate with **Susan Goldin-Meadow's** lab at the Spatial Intelligence Learning Center (SILC). With support by NIH, we also study the role of gesture in language evolution through comparisons with sign languages around the world.

Our lab director Professor **Carol Padden** is presenting at the American Association for the Advancement of Science (AAAS) Annual Meeting in February 2013.

In our lab, we have trainees who are at many different stages of their academic careers: a post-doc researcher, graduate students, a post-bac researcher, and undergrad interns. In January 2013, we also hosted a high school intern, a junior from High Tech High, a local charter school.

In December 2012, post-doctoral scholar **So-One Hwang** was invited to give a presentation to high school seniors at the Kearny School of International Business (pictured below). She shared findings from language, gesture, and cognitive science research and her experiences pursuing a career in academia. The students are part of AVID, which is a nation-wide



program that aims to increase college-readiness among students coming from under-

represented groups

Postdoctoral scholar So-One Hwang has a Ph.D. in Linguistics from the University of Maryland, College Park, and a B.A. and M.A. in Linguistics from Harvard University. She started her position as a postdoctoral scholar at UC San Diego in January 2012. She has been a member of VL2 since graduate school, serving on the board of the Student Leadership Team in 2010-2011. In August 2012, Hwang participated in Temporal Dynamics of Learning Center's (TDLC) Summer Fellows Institute



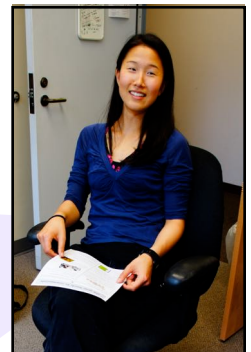
Left to right: Lab Director Carol Padden, Research Assistant Sharon Seegers, High School Intern Sabrina Jackson, Postdoctoral Researcher So-One Hwang.

("bootcamp").

Before starting her Ph.D., Hwang was a high school teacher. Her research in graduate school included studies on the temporal constraints of language processing and phonological prediction. Her current research focuses on the impact of language modality and the interaction of gesture and language in learning. Forming research and mentorship partnerships with schools in the past year has been an especially rewarding experience for her.

Sharon Seegers has a B.A. in Political Science and a minor in ASL Language Studies from UC San Diego. She started at the lab as an undergraduate intern and now works as a full time Research Assistant. She has played an active role in the project investigating the role of gesture in learning among deaf and hearing students.

Seegers's responsibilities have included data collection, data analysis, and supervising interns. One of her favorite



Lab Reports

parts of working in the lab is the exposure to different methodologies and the opportunity to meet researchers from around the world. In addition to her work inside the lab, Sharon has applied for a Fulbright Fellowship to return next year to Vietnam, where she studied abroad during her junior year, to work with the Hanoi Association of the Deaf researching the development of interpreting. She plans to apply to Ph.D. programs in sign language research when she returns. –Contributed by the Padden Lab



Susan Goldin-Meadow, left, and Carol Padden, right

Eye Tracking Research @ Bosworth Lab, UCSD

In an exciting new initiative, VL2 is going to be implementing eye-tracking studies for a range of uses, from studies that combine eye-tracking with fNIRS brain imaging to see how the eyes move over visual stimuli and which areas in the brain are activated, to the assessment of



translational research products such as the VL2 storybook apps for the iPad. In December, **Adam Stone**, a research assistant with VL2, and **Melissa Herzig**, VL2's Translational Research Manager, joined post-doctoral and post-baccalaureate researchers **So-One Hwang** and **Sharon Seegers** (from the Padden lab) at **Rain Bosworth's** laboratory at the University of California, San Diego.

While there, Bosworth demonstrated the use of Tobii X120 eyetracking equipment for her study on infant eye gaze and discussed what this study suggests about infants' ability to discriminate between sign languages, between bonafide signs and made-up signs, and also between signs and gestures. Bosworth went through a thorough demonstration of the eyetracking equipment's setup, calibration, video playback features, and the statistics/analysis features. At left you can see Herzig's young daughter participating in the study with an accompanying gaze plot.



Stone's visit was funded by a VL2 Student Review Committee grant, and he said, "many thanks to Rain for hosting us; this was well worth the trip!" As noted, eye-tracking, in conjunction with other assessments, can evaluate important outcomes related to the use of bilingual products. *Photos courtesy of Adam Stone*

For more information on the Padden Lab at UC-San Diego:
crl.ucsd.edu/paddenlab/

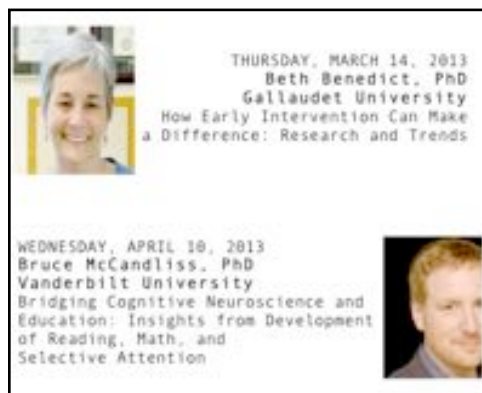
outreach



Save the Dates!

VL2 Spring Lecture Series

Thursday, March 14, Professor **Beth Benedict** of Gallaudet University will be presenting "How Early Intervention can Make a Difference: Research and Trends."



VL2 Lecture Series

- (2007-2008) <http://vl2.gallaudet.edu/presentation.php?id=y2007>

All 2013 lectures will be held from 4-5:30 p.m., in GU's MLC B111. Each is [live-streamed](#).

VL2 Holidays on Fuze

Last December, the Deaf Studies Lab at Rochester Institute of Technology (run by SFA 5 team leader **Peter Hauser**), hosted a VL2 Holiday Party, on Fuzebox! (Pictured below & left).

Attendees from various VL2 labs across the nation participated in several fun events, including a "Secret Snowflake" gift exchange between the six participating labs and an "ugly

Mark these dates on your calendar and join us either on campus or via live webcast. If you missed the other VL2 presentations this semester, the videos are archived online and can be found at the following links:

- (2012-2013) <http://webcast.gallaudet.edu>
- (2011-2012) <http://vl2.gallaudet.edu/presentation.php?id=y2011>



Research Briefs



Eye Gaze and Joint Attention:
Fundamental Skills
for Successful
Interaction in Home
and School
Environments

Bimodal Bilingual Approaches for Children with C. Implants



The Benefits of Bilingualism:
Impacts on Language and
Cognitive Development

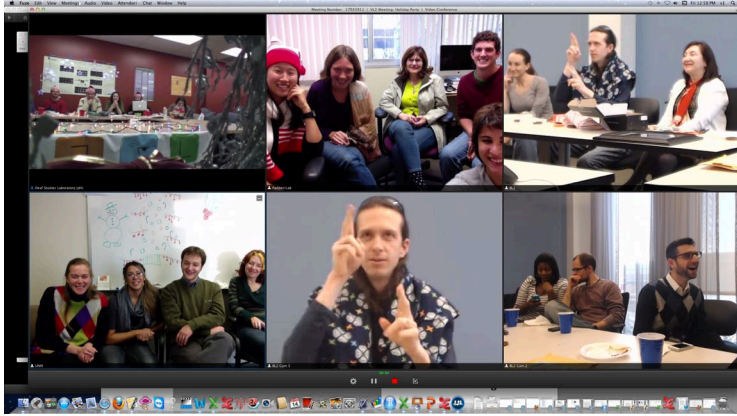
ASL/English
Bilingual
Education:
Models,
Methodologies,
and Strategies



FIND THEM AT
<http://vl2.gallaudet.edu>

education

sweater" contest. The winner of this year's esteemed "ugly sweater" contest was one Mr. **Clifton Langdon**; the infamous sweater is pictured below.



Welcome back from the winter break! We are excited to start the end of the 2012-2013 academic year with a bang! In the next few weeks, 14 of our VL2 students will be preparing for the sixth annual inter-Science of Learning Centers hosted by the Spatial Intelligence and Learning Center (SILC) in Philadelphia. On February 1st and 8th, The VL2 Meeting (Fridays 3:00-4:30 EST) will be reserved for these students to

practice their presentations via FUZE. We highly encourage you to come and support these students by listening to their poster presentations, and by providing feedback! Please contact **Rupert Dubler** (jadgss@rit.edu) for

more information about reserving your FUZE spot.

We also would like to congratulate our own VL2 students who have been accepted to present their work at the Theoretical Issues in Sign Language Research Conference in London! As of now, we have counted 11 students who are planning on attending the conference.

Happy Valentine's Day!

With love and many Hersey kisses,
pH and Erica



SFA 5: Integration of
Research and Education

Student Leadership Team (SLT)



All SRC travel grants for TISLR must be submitted to **Ben Anible** by Friday, March 1. Late applications will not be considered.

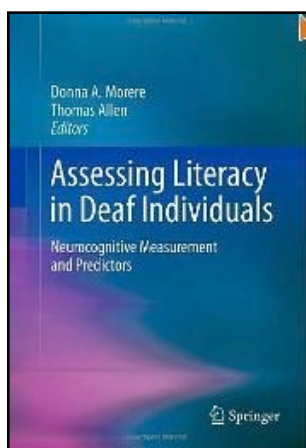
We have a SRC travel grant FAQ (in the form of a Powerpoint) available in the VL2 Student Documents Folder; it is called "A Guide to Applying for SRC Travel Funds." It will answer most, if not all, of your questions!

We are excited to announce that we are now accepting applications for the VL2 Student Translation Workshop hosted by **Jill Morford's** lab at the University of New Mexico on May 18-24, 2013. We will support travel, lodging, and food for seven students who reside outside of New Mexico. Please look at the VL2 Student Documents folder for the application form and instructions. Applications are due Friday, Mar 1.

Contributed by Adam Stone

Morere, Allen, & VL2 Colleagues Assess Literacy in Deaf Individuals: New VL2 Publication

VL2 researcher and GU Psychology faculty member **Donna Morere** and VL2 co-PI **Tom Allen**'s new book, *Assessing Literacy in Deaf Individuals: Neurocognitive Measurement and Predictors*, provides a comprehensive analysis of a broad set of neurocognitive, language and achievement measures (The VL2 Toolkit), including discussions of testing procedures, reviews of relevant research on the underlying constructs measured by the tools, psychometric data on reliability and validity, and a correlational analysis of the toolkit measures.



"Construction requires tools," write co-editors Allen and Morere. "Whether we are constructing a house, an educated citizen, or a scientific theory, we will be stymied if we do not have the right tools...The building that we are seeking to construct is a strong foundation of knowledge regarding the cognitive underpinnings of how deaf individuals learn, especially how they acquire literacy" (v).

Allen and Morere, along with VL2 researchers, research assistants, and affiliates **Elizabeth Halper, Evan Goodman, Shilpa Hanumantha, Gregory Witkin, Leah Murphy, Daniel Koo, Rachel Roberts, Raylene Paludnevicene, Peter C. Hauser, Dorri**

Daggett, Kim Kurz, Corrinne Bickley, Mary June Mosely, and Anna Stansky, contributed their knowledge and expertise to this endeavor, the building of a foundation of knowledge about assessing literacy in deaf individuals.

Chapters include findings from reading researchers on how literacy is acquired, neuroscientific studies identifying the neural networks involved in reading and cognition, and work from cognitive scientists whose work has greatly increased our understanding of the underlying mechanisms of memory, executive functioning, visuospatial reasoning, and other processes. The book can be ordered from [Springer Press](#) and from Amazon.

VL2 Publication in PLOS ONE

A new article from VL2 researchers and affiliates **David Corina, Laurel Lawyer, Peter Hauser, and Elizabeth Hirshorn** shows interesting findings about how proficient Deaf readers (in an fMRI study) are possibly "using a qualitatively different mode of orthographic processing than is traditionally observed in hearing individuals reading sound-based scripts." For more details: ["Lexical Processing in Deaf Readers: An fMRI Investigation of Reading."](#)

VL2 Publication in *Journal of Psychoeducational Assessment*

VL2 researcher **Peter Hauser, Jennifer Lukomski, and Vince Samar** recently published an article assessing the reliability and validity of the Behavior Rating Inventory of Executive Functions-Adult Form. Their findings suggest that BRIEF-A is a reliable, largely unbiased diagnostic tool for deaf college students, with comparable and discriminant and predictive validity for ADHD. Click here for more details on ["Reliability and Validity of the BRIEF-A for Assessing Deaf College Students' Executive Function."](#)

Emmorey and Padden presenting at AAAS

VL2 researchers **Karen Emmorey** (also a strategic focus area team leader for VL2) and **Carol Padden** are presenting at the annual meeting of the American Association for the Advancement of Science. Emmorey will be presenting ["The Generality of the Language Faculty: Biological Bases of Signed Language,"](#) a discussion of how "signed languages provide a powerful tool for investigating the neurobiology and cognitive architecture of human language."

Padden will be presenting ["Culture before Genes: The Case for a Village Sign Language"](#). This presentation is based on Padden's work with a relatively young sign language, the Al-Sayyid Bedouin Sign Language (ABSL), in a Deaf community in Israel.

Additionally, Emmorey has been selected to present the 23rd Albert W. Johnson Research Lecture at the San Diego State University for ["her outstanding contributions as a scientist, mentor and campus leader."](#) Her lecture, "The signing brain: What sign languages reveal about human

TIDBITS

language and the brain," will be held Friday, March 15, at San Diego State University.

VL2 ASL Milestones Checklist Poster at APS

Diane Clark, Sharon Baker, and **Laurene Simms's** poster submission "Deaf and Hard of Hearing Children's' Visual Communication and Sign Language Milestones" has been accepted for presentation at the 25th APS Annual Convention, May 23-26, 2013 at the Washington Marriott Wardman Park in Washington, D.C., USA.

VL2 at the ASL/English ECE Summit IV, March 21-23

The National ASL/English Bilingual Consortium for Early Childhood Education will be hosting their fourth annual summit at the Texas School for the Deaf in Austin, Texas, March 21-23, 2013. VL2 researcher and strategic focus area team leader **Peter Hauser** will be giving one of the keynote addresses March 21. **Melissa Malzkahn**, VL2's Digital Innovations and Media Strategies Manager, and **Melissa Herzig**, VL2's Translational Manager, will be talking about VL2's storybook apps, and **Jenny Singleton**, VL2 researcher and strategic focus area team leader, will be sharing information about VL2 with attendees. VL2 research assistant **Adam Stone** will be discussing the potential of iPad

technology for bilingual teaching. For more information about the schedule: <http://www.bilingualece.org>

Post-doctoral Fellowship Opening with Emmorey Lab

A two-year research position in sign language psycholinguistics at the postdoctoral level is available in the Laboratory for Language and Cognitive Neuroscience at San Diego State University (Dr. **Karen Emmorey**, Director). Information about the Laboratory can be found at: <http://emmoreylab.sdsu.edu>

A doctoral degree is required and applicants must have a background in psycholinguistics, experimental design, strong knowledge of Excel and SPSS (or other statistical software). Conversational ASL fluency is required. More information about the position and application processes can be found on [VL2's home page](#).

ASDC 2012-Save the Date!

June 26-30, 2013, the American Society for Deaf Children will host the 2012 conference in Tucson at the Arizona School for the Deaf and Blind. The ASDC Biennial Conference provides families with five days of information and fun. Daytime workshops captivate parents while children participate in educational and recreational activities. Evening events bring families together,

providing the opportunity to form new friendships and peer support.

Alliances built and information gathered make this conference a once in a lifetime experience for families across the nation. For more information contact the conference planning committee at ASDC2013AZ@asdb.az.gov or visit the facebook page at [Http://www.facebook.com/ASDC2013AZ](http://www.facebook.com/ASDC2013AZ)

Deaf Academy Congress 2013

July 18-20, the 2013 Deaf Academy Congress will be held at the Catholic University of Portugal. This conference is for sign language researchers, Deaf teachers, Deaf graduate students, and Deaf researchers. The goal of this conference is to gather and spread knowledge about Deaf Studies and sign language studies. The conference will be conducted in International Sign Language. Click [here](#) for more details.

Kroll interviewed on CNN on bilingualism

VL2 affiliated researcher and Pennsylvania State University faculty **Judith Kroll** was recently interviewed on CNN in relation to a study (that she was not involved with): ["lifelong bilinguals may have more efficient brains."](#)



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