VL2 Translational Products

VL2 is nearing the end of its seventh year of National Science Foundation Science of Learning Center funding, and what a productive and innovative seven years it has been! During its first seven years as a Science of Learning Center, VL2 established a solid foundation of scientific discoveries that have profound implications for parents, educators, and others working with deaf children.

Three important themes have emerged from VL2 studies. These are the discovery that early exposure to a visual language provides visual processing and cognitive processing advantages; early bilingual ASL and English exposure provides powerful benefits for both of a bilingual’s languages; and visual sign phonology plays an important role in facilitating the young deaf child’s early acquisition of reading English (this happens in the same way that sound phonology has a key role in young hearing children’s accessing of meaning from English print).

These three themes and their synergistic scientific underpinnings dispel common myths and misconceptions about deaf people, literacy, language development, and sign-print bilingualism. We are all familiar with the myths and stereotypes about Deaf people and about bilingualism.

But we know from experience, observation, and now science, that these old attitudes and harmful...
Translating

Continued from Page 1

preconceptions only serve to limit the deaf and hard of hearing child’s potential.

And what’s more, we have an emerging body of studies that confirm the many capabilities of Deaf people, the advantages of early visual language, the benefits of sign-print bilingualism, and so on. Deaf people can and do thrive, and we have the science to show how.

Now, the driving question behind the scenes at VL2 is: how can we build on the science to impact and change beliefs, attitudes, expectations, and choices in relation to deaf and hard of hearing children?

And, importantly, how can we do this in a way that stays true to our mission for two-way translational processes between the science and parents, practitioners, educators, and other professionals working with deaf and hard of hearing children?

In answer, VL2 has developed and implemented several key educational, translational, and ethical resources for—and in conjunction with—the many communities that form the heart of VL2’s work:

• interactive bilingual storybook apps for the iPad;
• an ASL assessment “toolkit”;
• a volunteer participant database;
• an innovative interdisciplinary Ph.D. program in Educational Neuroscience at Gallaudet U.;
• a precedent-setting benefits and risks assessment process for all VL2 translational products;
• and work is underway for a data sharing bank to ensure that this important work continues long into the future.

And today, we are delighted to announce the release of the VL2 Parent Information Package!

Growing Together

After a child’s diagnosis, we know that the first information parents receive is most often from medical professionals; in these materials, information about the benefits of early visual language is almost never included.

However, we know from our early feedback and development process for a parent resource package, a process that included input from parents, families, and outreach specialists, that parents want to know more about the cognitive, communicative, literacy, and psychosocial advantages children have with early exposure to visual language and bilingualism.

It is vitally important that parents receive research-based information early due to the deaf child’s need to receive meaningful and consistent language input during “sensitive periods” in infancy and early childhood.

Parent package materials—including an overview of the VL2 Research Briefs series—will dispel widespread misconceptions and provide much needed research-based information.

Parents (and, by extension, their children) will be empowered by accessible knowledge AND resources on how to get services/support; research suggests the early grief process for hearing parents may also be alleviated through parent-centered resources.

Additionally, based on early feedback from parents, families, and other stakeholders, we also interviewed a number of parents who “had been through it,” families with deaf teenagers and young adults. Their stories and reflections are available, along with interviews with scientists and researchers, in the

connect
dream
laugh
it’s about growing
together
love
learn
thrive
play
read
chat
imagine

VL2 Vision Newsletter - Page 2 of 11
Parent Package DVD. In addition to the VL2 video, parents and educators will also find “Through Your Child’s Eyes: ASL,” a film done with the California State University at Northridge, the California Department of Education, and the Annenberg Foundation.

On behalf of VL2, Project Manager & Lead Writer/Editor Kristen Harmon, Creative Design Manager Melissa Malzkuhn, and their team are delighted to share with you today, “Growing Together: The VL2 Parent Information Package.” This information is intended to bring together families, deaf children, and the many communities and stakeholders in ensuring a deaf and hard of hearing child’s success.

With the science of learning on visual language and visual learning, we will grow and thrive together...

Two ways to get your VL2 Parent Information Package materials: 1) a mailer which can be requested on a limited basis from vl2.gallaudet.edu, or 2) www.vl2parentspackage.org, a website where all of the mailer materials can be downloaded, in addition to materials not provided in the mailer. One important “extra” is the inclusion of life stories and reflections from successful young Deaf adults who are “making their mark on the world.” Available as an “e-zine,” it can be found at vl2parentspackage.org, along with interactive postcards that parents can fill out with their child to “imagine the future together.”

This ability to imagine and put into a place a strong future for the deaf or hard of hearing child is not a dream; it is based upon a strong foundation in science and translational research through intensive input from key experts throughout the Center.

This project came about through an intensive two-way translational process with multiple meetings and conversations over a year long period with parents, families, and important stakeholders, including the Laurent Clerc National Deaf Education Center, representatives from the Gallaudet U. Education and ASL/Deaf Studies departments, early intervention specialists, DawnSign Press, Gallaudet U. Press, GU’s Public Relations, & GU’s Development Office. Additionally, this project represents synergy with VL2 SFA 4, Translational Research. New research briefs published on family involvement with ASL acquisition (Enns & Price) and the role of gesture in development and learning (Hwang, Herzig, & Padden).

In addition to our collaboration with the supporters of the “Through Your Child’s Eyes” film, other key collaborations that enhance this project include our work with the Laurent Clerc National Deaf Education Center and our partnership with our colleagues in Canada, Charlotte Enns and Lynn McQuarrie. Enns & McQuarrie’s VL2 Parent Toolkit (forthcoming) will be featured on the website. This summer and fall, VL2 will establish focus groups and study the use of the package. We will be working closely with partners in disseminating and evaluating the package.

Join us today in growing and thriving together! Request and download from www.vl2parentspackage.org!

The VL2 Parent Information Package “includes vital information on the implications of the science of visual learning for achieving optimal, healthy, and successful growth in young deaf children for parents, educators, and medical professionals.”
—Laura-Ann Petitto, VL2 and BL2 Science Director
Co-PI Notes from Laura-Ann Petitto and Tom Allen

We write this piece amidst much excitement, anticipation, and a whirlwind of activity, as we all race to finish the remaining work for this coming Thursday. Working from present to backwards, we are in intense preparation for our upcoming NSF Site Visit in two days from now (Thursday and Friday, June 14-15th 2013)! Our team of SFA Leaders and PIs are already soaring towards Washington, D.C. in airplanes and airports around the United States and Canada, as tomorrow morning at 8:30am (Wednesday June 12) we have our all-day practice meeting. Students from around the nation are also on their way to our east coast city for their Wednesday practice day as well. Shannon Price and her team are in the next room printing (and printing, and printing), as they are assembling our beautiful handbook for each attendee. And, in just a few hours, all the months and weeks of work that went into the preparation for this big event (the whole year, actually) will be brought to bear in our Year 7 NSF Site Visit. It’s been “a journey,” but we are ready!

In between the truly mountainous preparations for the Site Visit, we have worked hard on the Year 7 2012-2013 VL2 Annual Report for the National Science Foundation, which was submitted on May 20, 2013. We also advanced discussions with our partnership universities towards securing Memoranda of Understanding, which will be a significant benefit to the new PhD program in Educational Neuroscience. Here, we are happy to thank and welcome into our VL2 partnership family the Georgia Institute of Technology and we offer a special thanks to Dr. Jenny Singleton for her wonderful support and help in this regard. (In the next issue, we will have good news of more MOUs in hand. Can’t wait.)

On the topic of the new PhD program in Educational Neuroscience, we are thrilled to announce that it was officially passed by the Gallaudet University Board of Trustees on May 17, 2013. What excitement and joy are already being felt on campus in anticipation for this wonderful new program. And, you can be sure, this monumental event has required many committee meetings. The new graduate student applications been evaluated, candidates selected, and recommendations made to Graduate Admissions at Gallaudet University (stay tuned for the big announcement in the next issue). After more committee meetings, we will be interviewing for the new PEN faculty position over the next two weeks, with all leading to a most ambitious goal. Come this fall 2013, as the first PEN class walks through our doors, we hope that among those greeting them will be a new PEN faculty member. Fingers crossed!

We also had another successful BRAC committee meeting. As a Year 7 VL2 innovation, the Benefits and Risk Assessment Committee (BRAC) was established to evaluate the benefits and risks of our VL2 products prior to their release. While a university’s IRB functions to protect research participants from potential risk, BRAC functions to protect the public who will receive our VL2 products from potential risk. This innovative committee was established because of a recommendation made by our Site Visit team last year, and it has been so successful that our Scientific Advisory Board heralded it as a model for the university and the nation. In May, the BRAC committee convened to evaluate VL2’s Parent Information Package (PIP), presented by Dr. Kristen Harmon, Dr. Melissa Herzig, and Melissa Malzkuhn (with Tom and Laura-Ann present from our VL2 team). The PIP was unanimously passed by BRAC for release to the public, and a fascinating and idea-rich discussion ensued.

Laura Ann Petitto and Melissa Malzkuhn presented a poster on VL2 discoveries at an educational forum for USA Congressional Staffers, as part of our new efforts to reach out to policy makers. Tom Allen gave a paper at the Association for Psychological Science (APS), and Laura-Ann Petitto attended research meetings on fNIRS in combination with new thermal imaging technology at the University of D’Annuzio, Chieti, Italy.

That’s about it for now. The short of it is that we’ve been busy. Back we go...
Announcing Special Issue of Sign Language Studies

VL2 Co-PI Thomas Allen is currently editing a special issue of Sign Language Studies to be published in the fall of 2013. The issue will contain a set of articles based on VL2’s two large-scale assessment projects: The Toolkit Psychometric Project, conducted with Deaf adults, and the Early Education Longitudinal Study (EELS), conducted with pre-school aged children. The first two articles grapple with methodological issues when neurocognitive measures created for hearing individuals are translated into ASL. In one article, Dr. Donna Morere of Gallaudet’s Psychology Department focuses on a newly developed test of verbal learning. Typically employing lists of English words with hearing test-takers, the Morere Signed Verbal Learning Test replaces English words with signs. Is memory for signs equivalent as memory for English words? Morere’s article considers this question. In another article, Gallaudet Clinical Psychology Ph.D. student Gregory Witkin, co-authoring with Dr. Morere and Leah Geer at the University of Texas, describes scoring and interpretation issues in a test of verbal fluency, translated for use with deaf individuals. Called the “5-1-U” Test, this test asks test takers to produce as many signs as they can in a one-minute period using the three hand-shapes 5, 1 and U. This test measures fluency in retrieving signs using visual sign phonological hand shapes, instead of using the sound-based phonological prompts of “F, A, and S,” as is done when the test is administered to hearing individuals. This is considered to be a measure of executive functioning.

The three articles from the EELS study present information about new tests available for measuring ASL skills in young Deaf Children. In the article by Allen and Charlotte Enns, a new test of ASL Receptive Skills designed for children as young as age 4 is presented. Reliability data is presented and a description of the grammar-based sub scales contained in the test is provided. This test, called the ASL Receptive Skills Test (ASL-RST) is based on a similar test developed for British Sign Language. In another article, Laurene Simms and Diane Clark, from Gallaudet’s Department of Education, and Sharon Baker from the University of Tulsa, present norms for a checklist of early childhood skills that identify which skills are typically displayed by native signers at each age from birth to five. This test will have considerable use among parents and early childhood educators wanting to assess where very young deaf children are with respect to acquiring sign language skills. The checklists were developed over a couple years, after carefully reviewing previous checklists that had been developed, though not normed, in the field. In the final article, Allen examines the relationship among ASL and fingerspelling skills among the 3-5 year-olds in the EELS database, and the relationship between these skills and early English literacy. He finds a strong positive relationship between early sign language skill and emerging alphabetic knowledge in preschool deaf children.

All of these articles employ new instruments that received developmental support from the NSF Science of Learning Center on Visual Language and Visual Learning (VL2). The SLS Special Issue presents these tools to the field, providing in-depth treatments of translation as well as interpretation issues, and psychometric and normative data that support their use.

Hauser receives NSF grant

Peter Hauser recently received a NSF grant for “Broadening the Participation of Deaf Students in Sign Language Research.” The goal is to provide mentoring to 6 USA deaf students who will be presenting papers or posters at TISLR in London. The grant also covers the cost for ASL interpreters at the conference.
Introducing Karen Emmorey and the Laboratory for Language and Cognitive Neuroscience at San Diego State University

Karen Emmorey is the Director of LLCN and a Distinguished Professor at San Diego State University. Our lab studies sign languages and the deaf and hearing people who use them to ask fundamental questions about the nature of human language and its neurocognitive underpinnings. Our research projects include psycholinguistic studies of ASL comprehension and production, investigations of bimodal bilingualism, and neuroimaging studies targeted at identifying the neural circuits that support language and reading in deaf and hearing individuals.

Cindy O’Grady is a full-time research assistant with the lab. She helps to develop experiments, create test stimuli, and run experiments with various groups of participants (deaf native and non-native ASL signers, hearing native signers, ASL L2 learners, etc.). Research has been her life long passion, and her current primary interest is how deaf individuals read because improving literacy is something she would like to give back to the Deaf community.

Kristen Secora is a 3rd year PhD student in the Joint Doctoral Program in Language and Communicative Disorders, concurrently completing coursework and clinical hours to receive her clinical certification in speech language pathology. Her main research focuses on embodied cognition within signed languages – namely activation of motor areas during sign language comprehension – and she is beginning to work on visual perspective taking research.

Marcel Giezen is a Post Doctoral Scholar in the lab and received his Ph.D. in Linguistics from the University of Amsterdam in the Netherlands. His dissertation research focused on speech and sign perception in deaf children with cochlear implants. He studies bimodal bilingualism and phonological and lexical processes in language production and comprehension. His current research at LLCN investigates a) language co-activation for hearing adult ASL-English bilinguals using picture-naming and eye-tracking (visual world) techniques and
b) the relationship between language co-activation and cognitive control.

Jill Weisberg received her Ph.D. in Neuroscience from Georgetown University, where she used functional brain imaging to examine spatial processing and object recognition in deaf and hearing populations. She joined the Laboratory for Language and Cognitive Neuroscience (LLCN) in 2008 and is working on MRI studies of the neural circuits engaged during reading in deaf populations; how the bimodal bilingual brain responds to code-blends (simultaneous use of spoken and signed languages); and the neural response to gesture in bimodal bilingual brains.

Since earning his B.A. in Cognitive Science and Hispanic Studies from Brown University, Jonathan Udoff has been working as a graduate research assistant at LLCN, and he is a Ph.D candidate in the SDSU/UCSD Joint Doctoral Program in Language and Communicative Disorders. His primary research interests lie in sign language phonology and phonetics, and his previous research has focused on articulatory compensation. Currently, Jonathan’s dissertation work uses motion capture to investigate the kinematics of mouthings during the production of ASL in order to understand the psychological and physiological underpinnings of mouthing reductions.

Stephen McCullough is a Research Scientist in the lab, and he received his Ph.D. in Cognitive Science from the University of California, San Diego. His primary field of interest is in systems neuroscience, and his ongoing research involves functional neuroimaging studies of brain regions that underlie language, facial expression processing, and the neurobiological basis of reading for skilled and less-skilled deaf readers. We hope that our findings may lead to more effective educational strategies for improving reading comprehension skill in all readers. Stephen’s other research interests include experience-dependent cortical plasticity and computational neuroscience of vision.

--Contributed by the Emmorey Lab

For more information on LLCN at San Diego State University: http://emmoreylab.sdsu.edu/director.php
New VL2 Research Briefs

Announcing 2 New Research Briefs

We’re delighted to announce that we are publishing two new research briefs in our on-going “Learning from Research Series.” Charlotte Enns and Liana Price wrote “Family Involvement in ASL Acquisition” (Brief #9) and So-One Hwang, Melissa Herzig, and Carol Padden wrote “The Importance of Gesture in Child Development” (Brief #10). Both are now available here.

End of the AY Notes from Integration of Research & Education

We wish to congratulate all VL2 students for completing another successful year and all who are graduating. We are looking forward to a fun-filled and educational summer with many of you at TISLR in London and the Deaf Academics Conference in Lisbon. We welcome Jessica Contreras (RIT) who will become the new SFA 5 student leader. We will be working together with Jessica and the SLT over the summer to prepare for the next academic year.

Since the last newsletter, we have enjoyed some exciting events on Fridays with our guest speakers. On April 5th, we discussed various ways to improve collaborative writing with Dr. Tonya Stremlau from Gallaudet University. On April 12th, Dr. Karen Emmorey from San Diego State University presented updates on the projects from SFA 3. The VL2 students also had the luxury to learn about Dr. Emmorey’s scholarly journey to today. The students enjoyed her advice to the students as emerging scholars about how to navigate through their work. On April 19th, Jason Listman, a VL2 and SLT alumnus, gave an overview of his dissertation work on mentorship. On April 26th, Dr. Krister Schonstrom presented his dissertation work all the way from Sweden! Apparently it was bedtime for him when he graciously agreed to join our FUZE meeting on our time zone! We enjoyed learning more about his research on what
language development looks like in bimodal-bilingual deaf children in Sweden. Dr. Schonstrom suggested that deaf children’s acquisition of written Swedish looked similar to L2 learners of Swedish.

May 3rd was our end-of-the-year FUZE meeting party where we discussed the pros and cons of IRE activities in 2012-2013. In summary, a lot of the students really liked the FUZE meetings on Fridays. Even one student shared his vow to keep his Friday cleared up for the VL2 meetings, going so far as to rearrange his school and work schedule to attend! Another feedback we received was improving the FUZE meeting series by offering more time for discussion after listening to our guest speakers. Some of the disappointments expressed by students were related to logistics such as travel applications, which is an area of improvement we look forward to tackle.

We are also proud of our VL2 students who presented their posters at the Association for Psychological Science (APS) Conference in Washington D.C. in May 2013.

The VL2 members got together for a photo shoot next to the famous Milgram Simulated Shock Generator from Stanley Milgram’s experiment on obedience! (Photo below left).

For our VL2’s 2014 graduates: Congratulations! (From Erica: MAZEL TOVI)

---“Good night and good luck.” (E. R. Murrow)

Peter Hauser (SFA 5 Leader)
Erica Israel (SFA 5 Student Leader)

Back row L-R: Ila Parasnis (NTID), Peter Hauser, Diane Clark, Shelly Williams, and Lisa van der Mark. Front row, L-R: Jessica Contreras, Erica Israel, Aileen Aldalur, Carrie Suggs, and Emily Wojahn.

Student Leadership Team (SLT)

This is our last letter to you for the year! We have enjoyed working with you all and enhancing the experiences of students who live, work, and research in VL2. We are now hard at work analyzing student data (thanks to all who filled out the survey) and preparing for the Site Visit! We have four highlights:

**SLT Election:** Students voted for their new 2013-2014 leadership team! The new SLT is Shane Blau (UC Davis), Casey Cochran (Gallaudet), Jessica Contreras (RIT), Adam Stone (Gallaudet), and Paul Twitchell (UNM). Ben Anible is continuing as the SRC Chair. They will be meeting throughout the summer to get off to a good start.

**UNM Translation Workshop:** More than a dozen students gathered at University of New Mexico for five days to learn skills for synthesizing and translating three VL2 scientific articles into ASL and picking up video editing and filming techniques. The videos will be available soon on VL2’s YouTube account and in the new Parent Information Package. Big thanks to the wonderful UNM team (Corrine, Ben, Teri, Paul, Andre, and Dr. Jill Morford) for being wonderful hosts/chaffeurs/chefs to out-of-town students.

**SLT Retreat:** Our retreat (September 12-14) will be hosted in the Washington, D.C. area, close to Gallaudet University; some activities will take place in a house while others on campus. We are excited about this new format! More details coming soon.

**TISLR:** VL2 students are well-represented at this year’s TISLR 11 in London! We will be in touch soon with a specific time during the conference where we can all meet up and have a group photo! Thank you all for being part of the VL2 community.

Thank you, Deb, Corrine, Amy, Adam, and Erica
VL2 & Affiliates at TISLR

VL2 researchers and affiliates are heavily represented this year at the Theoretical Issues in Sign Language Research (TISLR) Conference 11 in London. Presentations by VL2 researchers and affiliates include “Biological attraction for natural language rhythm: Eye-tracking in infants and children using reversed videos of signs and gestures,” “The relation between linguistic and spatial working memory capacity and sign language processing,” “Temporal integration windows in sign language processing,” “Looking closely at iconicity in child ASL,” “The time course of bilingual lexical access in deaf ASL-English bilinguals,” and “The interface of phonology and semantics in ASL: An online-processing study.”

Posters also show the range and depth of research done by VL2 researchers and colleagues: “Sensitivity to verb bias in ASL-English bilinguals,” “Deaf students’ performance on the color trails test: Effect of early sign language acquisition,” “Cortical simulation mapping in a deaf signer,” “Lexical processing in deaf readers: An fMRI investigation of semantic and phonological processing,” and “The role of gesture in learning for signing children: Implications for sign language theory,” and “Development of perspective-taking skills by deaf signing children.”

Additionally, Peter Hauser discussed atypical signers at the TISLR summer school session, “The Sign Language Researchers’ Toolkit,” June 7-9.

New VL2 Publications


Two new VL2 publications recently appeared in the Journal of Deaf Studies and Deaf Education:
- Karen Emmorey, Jill Weisberg, Stephen McCullough, & Jennifer A.F. Petrich published “Mapping the reading circuitry for skilled deaf readers: An fMRI study of semantic and phonological processing” and
- Peter Crume published “Teachers’ Perceptions of Promoting Sign Language Phonological Awareness in an ASL/English Bilingual Program


VL2 at APS

Members of VL2 represented the center’s research at the recent annual meeting of the Association for Psychological Science, in D.C. May 23-26. VL2 co-PI Tom Allen and BL2 post-grad RA Song Hoa Choi presented “Early Communication Experience and Early Language Skill for Deaf Preschoolers.” Diane Clark, Laurene Simms, and Sharon Baker demonstrated the
“Deaf and Hard of Hearing Children’s Visual Communication and Sign Language Milestones.” Emily Wojahn, (below) a GU graduate student in Education and VL2 intern, presented a poster with Diane Clark and Kristen Harmon on

“Oral Deaf Life Scripts.” Peter Hauser, Jessica Contreras, and Erica Israel, all from Rochester Institute of Technology/NTID, presented “Effect of Language on Executive function Development: Case of Deaf Signers.” With Diane Clark, VL2 undergraduate intern Caroline Suggs (pictured left) presented “Passing for Hearing: Life Scripts of Oral Deaf College Students,” a study also involving VL2 graduate and undergraduate interns and research assistants Shelley Williams, Dorri Duggett, and Lisa van der Mark (pictured right above).

VL2 Alumni News

Gabrielle Jones, a former VL2 fellow and VL2 research assistant, recently graduated with her doctorate from the University of Illinois at Urbana-Champaign. Her dissertation work was “A Cross-Cultural and Cross-Linguistic Analysis of Deaf Reading Practices in China.” For this study, she used case studies with teacher interviews and classroom observations. Jones is currently a lecturer in the School of Education at Boston University.

Shawn Nelson Schmitt, a current VL2 research assistant, successfully defended his dissertation, “Establishing a Normative Sample of Black Deaf Individuals on the 58-Item Deaf Acculturation Scale,” May 24. Nelson Schmitt focused his clinical training on cultural and linguistic diversity and the integration of neuropsychology in primary medical care. Nelson Schmitt completed externships at Saint Elizabeth’s Hospital and the National Cancer Institute at the National Institutes of Health. Nelson Schmitt has been a research assistant with VL2 for seven years. This summer, he will begin a year-long position as a Neuropsychology Resident at the Warren Alpert Medical School of Brown University. Congratulations, Dr. Jones and Dr. Schmitt!

VL2 Mentoring Featured in Gallaudet Today

A primary goal of the fifth of VL2’s strategic focus areas, the integration of research and education, is mentoring. Peter Hauser, the leader of the integration of research and education SFA, was recently interviewed for the next issue of The Gallaudet Today magazine. Hauser’s work with mentoring is the focus of the article. The news feature will be released online soon.

Coalition for National Science Funding

May 7, VL2 Science Director Laura-Ann Petitto and VL2 Digital Innovations and Media Strategies Manager Melissa Malzkuhn (below) represented VL2 at the 19th annual exhibition and reception for the Coalition for National Science Funding. A showcase for research and education projects supported by the National Science Foundation, the exhibition’s theme was “Investments in STEM Research and Education: Fueling American Innovation.” Petitto, Malzkuhn, and Jeffrey Lidz from the University of Maryland presented together as part of the Linguistic Society of America.