Understanding Translational Research at VL2

As the center grows, VL2 is concentrating more time, energy, and resources on translational research. Translational research is research that intentionally builds upon or “translates” findings from basic science for the purposes of finding and implementing practical applications. The intent is for science to have a broader impact upon education and learning. VL2 has five strategic focus areas (SFAs), and one is focused specifically upon translational research.

The long term goal of VL2’s translational research, according to Dr. Jenny Singleton (who is the leader of VL2’s research in translation efforts) is “to identify and evaluate language and literacy interventions that promote an optimal fit between visual learners’ perceptual strengths and their learning environments during ‘sensitive periods’ in the development of language, visual processing and attention, and literacy development,” areas all covered in VL2’s science agenda (strategic focus areas 1-3).

Translational insights that come out of the SFA 4 studies are developed as part of a two-way process, with inclusion of important insights from “emic perspectives” (Singleton, Jones, and Hanumantha 2012) and from teacher and parent interviews (Pucci, Mounty, and Harmon 2012), and knowledge from the literature on Deaf

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VL2 students and researchers participate in a virtual seminar on translational research held November 30.
Translational epistemologies (Hauser, O’Hearn, McKee, and Steider 2010).

Additionally, developing translational insights that have bearing on the classroom is also a bidirectional process, with heavy emphasis upon collaboration, community engagement, feedback, and assessment. For example, last March, VL2 hosted (with the Laurent Clerc National Deaf Education Center) a workshop as part of the Early Childhood Education Summit III in Delaware. We also maintain ties with our School Partnership Network, which contains over 90 schools. Now with new products coming out of the center in 2013, namely iPad ASL-English storybook apps and a parent information package, VL2 is implementing an intensive feedback and assessment process. Kristine Chadwick of Edvantia Consulting, is working with VL2 as a translation advisor. With Chadwick’s input, we have established a thorough and intensive feedback and assessment process which involves the assessment of both risks and benefits, and which also brings in experts in the field for the purposes of risk and benefit evaluation.

Translational work at VL2 necessarily draws upon the findings from the first three strategic focus areas—the basic science agenda of the center—and one important synergistic finding from across the center’s studies, a finding that has clear translational impact is: Early visual language is critically important. This study—and others—has shown that the timing of early language acquisition is critically important. Science Director Laura-Ann Petitto’s work shows that the “bilingual advantage” comes with early exposure to both languages.

With increasing evidence demonstrating the importance of early development of linguistic skills in a visual language, VL2 has several translational studies and related projects underway.

- Charlotte Enns and Lynn McQuarrie are evaluating the ways in which more support of hearing parents’ signing skills fosters their child’s early visual language development. Using the milestones of healthy development as a framework, Enns and McQuarrie are developing guides and materials for better supporting and encouraging parents in their use of ASL with developmentally appropriate activities.

- Carol Padden and Susan Goldin-Meadow are developing pioneering insights into the ways in which gesture—in ASL-fluent children can provide insight into cognition. By studying the ways in which a child’s gestures in, for example, a math lesson, match or don’t match the child’s description of the process provides insight into which child could benefit from additional training or interventions. This study shows that mismatches between language and gesture can provide insight into when the child is on the edge of a conceptual change, going from not understanding to understanding the math lesson. This study was published this year in Cognition.

- Center-wide, findings (namely those from studies done by VL2 researchers Karen Emmorey, David Plaut, and previous work by Carol Padden) have converged upon the significance of fingerspelling as a kind of “bridge” for reading and literacy in English for the signing Deaf child. Brenda Schick is currently investigating fingerspelling as a kind of gateway to phonological knowledge in the acquisition of literacy in English. Schick has developed a fingerspelling assessment designed for children for the purposes of examining their “word-internal knowledge” (e.g. rhyming, alliteration, and the like). Her early findings suggest that young Deaf children who are fluent in fingerspelling are building a visually-based phonological representation that does not rely upon sound- or grapheme-based phonologies.

- To meet the need for more tools for documenting and assessing developmental milestones in ASL, Laurene Simms, Diane Clark, and Sharon Baker have developed and are currently field testing their Deaf and Hard of Hearing Children’s Visual Communication and Sign Language Milestones Checklist (from 0-5 years of age).

- Translational research products: in 2013, we will release the first VL2 iPad ASL-English Storybook app as well as the parent information package.

- An intensive risk and benefits assessment process for each VL2 product, including review by a team
The importance of understanding translational research is covered often as part of VL2’s integration of research and education efforts (SFA 5, run by Peter Hauser). Two weeks ago, on Nov. 30, Singleton presented on this topic as part of “THE VL2 meeting” series run out of the Deaf Studies Laboratory at Rochester Institute of Technology.

Singleton began the meeting by providing the context of translational research at VL2: first, what the term has meant for the sciences and then how translational work ties in with the National Science Foundation’s strategic goals related to the importance of innovation for social impact: “By forging links between fundamental research and society’s needs, NSF helps articulate important new areas [of research], improves the quality of life, creates a scientifically literate populace, and empowers future generations” (NSF Strategic Plan 2011-2016).

“Transformative research,” according to Dr. Jenny Singleton, “involves ideas, discoveries, or tools that radically change out understanding of an important existing scientific...concept or educational practice or leads to the creation of a new paradigm or field...Such research challenges current understanding or provides pathways to new frontiers.” Singleton encouraged the VL2 students to consider the broader impacts of research, particularly in relation to education, health, mental health, and technology. She then discussed some of the challenges of doing effective translation and suggested ways to improve the translation of research to practice. After a review of strategies for moving from a theory of change to a theory of action, including a review of all core components related to the intervention being studied, Singleton reminded viewers that as a NSF-funded Science of Learning Center, we must consider the ways in which our research is transformative.
Co-PI Notes from Laura-Ann Petitto and Tom Allen

What a wonderful event the First Annual VL2 Inter-Lab Fuze Holiday Party was! About 30+ attendees from four different labs, as well as VL2 and BL2 students attended, spanning the continent, sharing holiday cheer! There were “Secret Snowflake” gifts sent across the nation to different labs, and hilarious holiday stories – lots of funny ones about turkeys… (we’ll leave you guessing)! And there was even an ugly holiday sweater contest. Congratulations to Clifton Langdon for winning the contest, though Jill Morford is most definitely to be commended for her ugly sweater as well. Smile. VL2 has truly become a wonderful family. Thank you Peter Hauser and his wonderful lab – Erica, Rupert and all others – for creating this fabulous holiday good cheer. We, as Co-Pis, were so thrilled to be a part of this, and a part of history.

Our accomplishments surely multiply as we move through time. And we are so ready for a ten-day break! There is nothing like a holiday deadline to clear the decks.

The number of check marks in our To-Do-Books (indicating completed tasks), attest to the recent flurry (or more appropriately, blizzard!) of concerted activities accomplished in just the 3 weeks since we last wrote:

- Submit the Year 7 Strategic Implementation Plan to NSF (CHECK);
- Submit the Year 7 Action Plan to NSF (CHECK);
- Submit the special Report of Achievements to NSF for the SLC-wide report from the NSF panel convened in October to make recommendations regarding future funding opportunities for the Science of Learning (CHECK);
- Submit the second round of revisions to the PhD Program in Educational Neuroscience to the Gallaudet New Program Committee and to the Dean (CHECK);
- Design Risk and Benefit Assessment Forms, Complete the Forms Outlining Potential Risks and Benefits specifically for the first protocol to be evaluated by the new Committee (the iPad Bilingual ASL-English Storybook App), assemble and then convene the first meeting of the newly created Committee to Assess Risk and Benefits (so as to “Baobab”) to the iTunes Apple Store after first holding meetings with University Administrators to define and resolve accounting issues (CHECK);
- Advance our intensive work on the NSF funded Signing Creatures Supplemental Grant to design and create Avatar and Robotics research-based translational products for the young visual learner; Design an agenda and a potential participant list for a virtual meeting to be held in March in preparation for the real NSF Avatar-Robotics workshop to be held here at Gallaudet in Fall 2013 (CHECK);
- Plan the February 3-6, 2013 Strategic Focus Area meeting agenda, innovative 2013 structure, important outcome goals, and special events – including a special thank you for Guinevere Eden (Sunday night Feb 3), as well as the celebratory first launching (before our eyes!) of the VL2 iPad Bilingual App onto the iTunes site on Monday night, Feb 4 (Congratulations Melissa Malzkuhn) (CHECK);
- Plan the March 3-4, 2013 meeting agenda, and goals for the VL2 Scientific Advisory Board Meeting (CHECK);
- Submit the iPad Bilingual ASL-English Storybook App (‘The Baobab’!) to the iTunes Apple Store after first holding meetings with University Administrators to define and resolve accounting issues (CHECK);
- As we catch our breath, and look forward to spending time with our families, we want to wish everyone

Important Dates to Remember!
- VL2 Executive Team Meetings, Wednesdays, 11:30-12:30
- Strategic Implementation Plan (SIP), Dec 14, 2012
- Strategic Focus Area (SFA) Meetings, Feb 4-8, 2013
- Scientific Advisory Board, Sunday March 3, and Monday March 4, 2013
- School Partnership Meeting, Spring 2013 (TBA)
- Annual Report, April, 2013
- NSF Annual Site Visit, June 2013 (TBA)

And amidst these mountainous obligations, Laura Ann worked around the clock on these items with us while simultaneously traveling within Italy for two weeks to give talks (see her article on VL2’s website!).

As we catch our breath, and look forward to spending time with our families, we want to wish everyone
reading this VL2 Newsletter - those who work tirelessly on the many projects and activities of the Center, as well as those who follow our activities through this newsletter (or through our social media outlets or our publications), a very quiet, peaceful, and rejuvenating holiday!

May the New Year bring peace and much healing to the world.

The New Year promises to bring many exciting opportunities and possibilities for us here at VL2, and our hope is that it will bring the same to you and your families.

We send our heartfelt thanks to you all!

Tom and Laura-Ann

Professor Petitto Gives International Talks in Italy

Late November and early December were busy lecture times for Professor Laura-Ann Petitto, Co-PI and Science Director of the Science of Learning Center, Visual Language and Visual Learning, VL2. During this time, Petitto presented two formal lectures, with extensive post-lecture meetings and discussions involving students and colleagues. Click here to read all about it!

A snapshot taken of Petitto and the neurologist and research scientist Professor Lugaresi at the University of Chieti G. D’Annunzio

Left: Dr. Petitto with Dr. Stefania Fadda, Director of the CABSS center in Rome, Italy, just before Petitto’s lecture.

Left: Dr. Petitto with Dr. Lugaresi, Director of the University of Chieti G. D’Annunzio.

Petitto also had the pleasure of seeing the Pope while in Rome.

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.
The Deaf Studies Laboratory at the Rochester Institute of Technology has had a busy 2012. Our lab director, Dr. Peter C. Hauser, just came back from a 3-week long trip in Sweden and Denmark where he gave 10 presentations in Sweden and 2 in Denmark; these were all presentations to disseminate research findings!

We are very excited about the 2013 year as we look forward to recruiting specific subjects to balance out the groups so we can finally analyze the data as we proceed to wrap up several additional projects. Our lab will also be moving to our first truly permanent home in the new building, the Rosica Hall, on campus.

We wanted to take some time to introduce some DSL folks to VL2. Enjoy!

Kailea Colayori

I am currently finishing up my Bachelor’s Degree in Interpreting and graduate in May. I have been working at the Deaf Studies Laboratory for over three years now as a Research Assistant. Within the lab I am the Sign Language and Psychosocial Well-Being Project Coordinator. I work on a variety of projects such as the ASL Comprehension Test, ASL Cross-test, and I am involved with data collection for multiple studies. My personal research interest is with Late Deafened Adults, ASL Linguistics and the Acquisition of ASL as a second language. The Deaf Studies Laboratory has provided me the opportunity to look more into these areas and get a taste of what research is out there in these areas.

Jessica Contreras

I have my B.S in Clinical Psychology and I am currently a first year M.S. student in the School Psychology program. I have been working at the Deaf Studies Laboratory for over a year and am currently a Graduate Research Assistant. My research interests strongly fuse with the vision of the DSL and how the deaf experience shapes individuals throughout their lives. Within the lab, my key roles are leading the Executive Function project as well as helping out with other key projects such as data collection for the norms towards the ASL-CT which is an ASL Comprehension Test and hidden discrimination within the deaf individual.

Personally, I have done research on various topics regarding the deaf population when it comes to understanding the Miranda Warning and comprehension in what qualifies as Sexual Assault. Overall, I enjoy research and working with deaf individuals in this capacity.

Erica Israel has a B.S. in Clinical Psychology and is currently a 2nd year School Psychology MA student at Rochester Institute of Technology. Now in her third year, this Graduate Research Assistant has contributed
substantially to the advancement of our laboratory’s executive functioning studies in deaf and hard of hearing populations. Her current research interests include acquiring insights based on cutting edge executive function research to inform her future career as a school psychologist.

In addition, she is very interested in how the psychosocial experiences of the deaf/hard-of-hearing population subsequently influence their future career choices. Aside from her research contributions, she has been gaining invaluable leadership experience as the Mentoring Coordinator of VL2’s Student Leadership Team as well as serving as a SFA5 Student Representative.

**Jason Listman**, a full-time faculty member, is busy working on his dissertation. Our own research assistants, Erica Israel, Kailea Colayori, Jessica Contreras, and the lab manager, **Rupert Dubler**, have been working on multiple projects related to four different ASL measurement tools, the investigation of executive function and resilience, the construction of a mentoring pipeline, just to name a few! As is the norm in many research labs, our research unit has expanded and contracted sometimes dramatically every quarter as our immediate needs along with the pool of available students fluctuates. Ever since relocating to this side of the campus, we have also become more tightly integrated with the ASL and Interpreting Education department and recently begun to sponsor a department-wide Sign Language Studies Journal Club. Our lab’s visibility along with its strong ties with VL2 have also been boosted with us being selected to exhibit in a premium location at the annual Imagine RIT festival on-campus.

--Contributed by the Deaf Studies Lab team

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**Eye Tracking @ GU**

Monday, Dec. 10, VL2 hosted a demonstration of eye tracking equipment. Eye tracking is planned as an important part of understanding how users of VL2 ASL-English iPad apps engage with the material. Eye-tracking, in conjunction with other assessments, can evaluate important outcomes related to the use of bilingual products. Photos courtesy of Erica Wilkins

For more information on the Deaf Studies Lab at RIT  
http://www.ntid.rit.edu/dsl/
Save the Dates!

VL2 Spring Lecture Series

We’ve had a very good fall series with lectures and discussions with Drs. D.J. Bolger, Peter Crume, and Ron Stern. We are now eagerly anticipating the three spring lecture dates with Drs. Matt Traxler, Beth Benedict, and Bruce McCandliss. Mark those dates on your calender and join us either on campus or via live webcast on those days.

If you missed the other VL2 presentation this semester, the videos are archived online and can be found at the following links:

- (2012-2013) [http://webcast.gallaudet.edu](http://webcast.gallaudet.edu)

All 2013 lectures will be held from 4:50 p.m., in GU’s MLC B111. Each is live-streamed.

VL2 Abroad: Part Two

As we noted in the last newsletter, on November 5, Peter Hauser gave the keynote for the the “Children of Possibilities: Learning and Growing in a Changing World” conference at Örebro University in Sweden. From there, Hauser went on to travel to other sites in Sweden and Denmark for a grand total of TWELVE presentations in those two countries.

Hauser gave a talk on “How Deaf Children Learn,” a discussion of research findings, including VL2’s, on deaf and hearing brains, at schools for the deaf and Deaf Associations in Sweden.

This is an excerpt from Hauser’s Swedish travel itinerary:

- #5 Eye Gaze and Joint Attention: Fundamental Skills for Successful Interaction in Home and School Environments
- #6 Bimodal Bilingual Approaches for Children with C. Implants
- #7 The Benefits of Bilingualism: Impacts on Language and Cognitive Development
- #8 ASL/English Bilingual Education: Models, Methodologies, and Strategies

FIND THEM AT [http://vl2.gallaudet.edu](http://vl2.gallaudet.edu)
education

The SLT remains hard at work in coordinating VL2 student activities across our 16 participating universities. Here are some developments:

We are nearly done with our grant for hosting an ASL translation workshop at University of New Mexico next May! Keep your eyes peeled for information about this.

You have voted in favor of increasing the cap for VL2 SRC travel grants. The new limits are now:
- $1,000 cap for domestic travel for presenters and non-presenters (all of North America)
- $2,000 cap for international travel for presenters (poster or talk) (no more than $500 of this to be spent on lodging/per diem)
- $1,000 cap for international travel for non-presenters

Priority for travel grant funds will be given to presenters.

Our weekly "The VL2 Meeting" are going strong. We just had a wonderful one on Friday 12/7 where we rapid-fire asked Tom Allen all kinds of questions, and also had a thoughtful discussion of ethics and best practices for translating articles into ASL. If you haven't joined The VL2 Meeting yet, call in next time! Also--if you have been selected to attend iSLC, please do not worry that travel hasn't been booked yet. There has been a hold-up on the NSF's end in getting the funds, so please DO NOT book travel until Deb Cates tells you it is time.

-Contributed by Adam Stone & Deborah Cates
Integration of Research and Education News, continued

(Continued from p. 9) Since the VL2’s November newsletter, we continue to have lively discussions during our “The VL2 Meetings.”

November 30th: Translational Research. Jenny Singleton from Georgia Tech gave a wonderful overview of translational research. We learned that translational research is getting increasing attention from all the major federal funding agencies because basic scientific research can sometime fail to anticipate factors and processes that would undermine the findings when tested outside the lab. A discussion took place regarding how VL2 has embraced two-way translational and evidence-based research initiatives even though many of its labs are focused on basic science.

December 7th: PI Spotlight. Tom Allen from Gallaudet University responded to numerous questions that painted a broad picture of his life story and the legacy for which he would like to be remembered for. One of the questions asked was what his choice of a VL2 mascot would be. Initially, he thought a bat would be appropriate but finally settled on a bald eagle on account of its extraordinary visual acuity. Maybe VL2 should investigate which mascot would best represent our center, if not a bald eagle?

Current Topic Discussion: The decision was made to continue an ongoing email discussion concerning the ethics related to disseminating research findings in ASL during the second half of this meeting. This discussion was introduced by members of the VL2 Student Leadership Team (SLT) and resulted in a very productive dialogue leading to the identification of core issues related to presenting research findings in ASL.

Peter and I would like to send you warm wishes and hope you will have safe travels during the holidays! See you next year!

—Contributed by Erica Israel, SFA5 Student Rep

Coming Soon!

Comprehensive data are provided for each, with discussion of validity and reliability issues as well as ethical and legal questions involved in the study. And background chapters explain how the Toolkit was compiled, describing the procedures of the study, its rationale, and salient characteristics of its participants.

We can’t wait to see the book when it comes out!

VL2 Alumni News: Newly minted PhDs

Congratulations to former VL2 graduate assistants and fellows Milllicent Musyoka (pictured right) and Gabrielle Jones (pictured left).

Musyoka is currently Deaf Studies and Deaf Education faculty at Lamar University, and Jones is faculty in the School of Education at Boston University.

VL2 Research for Pediatricians

November 15, Jenny Singleton presented “What Pediatricians Should Know about Sign Language Exposure for Deaf and Hearing Infants and Children: Findings from Neuro-Cognitive and Psycholinguistic Research” to pediatricians in the Atlanta, GA area. This presentation was part of the continuing medical
education curriculum for pediatricians in the Children’s Healthcare of Atlanta network.

VL2 EELS at the Psychonomic Society Annual Meeting

Last month, Tom Allen, Diane Clark, and Donna A. Morere presented “Linguistic Competency and Social Emotional Development among Deaf Children in the VL2 Early Education Longitudinal Study (EELS) at the annual meeting of the Psychonomics Society in Minneapolis.

Additionally, Allen, Clark, and Sharon Baker are continuing their analysis of Beliefs and Attitudes about Deaf Education, also part of EELS. Read more about their ongoing BADE work here.

VL2 @ the Apple Store, SoHo, NYC

November 17, VL2 graduate research assistant Adam Stone gave a talk at the Apple Store in Soho, New York City.

Stone discussed his e-book, Pointy Three, a story presented in both ASL and English. Adam discussed the ways in which e-publishers can use existing programs and apps to develop their own ASL-English e-books. He also gave a short demonstration of how to create an ASL/English ebook using iBooks Author.

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 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

YOUR Input is Needed!

To better design VL2’s storybook apps in ASL and English, we are collecting information on how your classroom and school uses tablet computers (like iPads or Android tablets).

This survey is important not only for us, but for you since it will help us explore possibilities for distributing apps and iPads to schools and children.

This survey is open to both teachers and administrators! The survey and more details are available on VL2’s website.

Your Input is Needed!