VL2 Plays Key Role in Faculty Professional Development at Gallaudet University

Every fall, at the beginning of the semester, Gallaudet faculty gather for a week-long professional development workshop. This year, Faculty Development fellow Dr. Jill Bradbury (English Department) chose to focus the workshops on what we at Gallaudet University know and that is the power of visual learning in the classroom.

August 21, Drs. Peter Hauser and Lon Kuntze presented “Visual Learning: The Known and Possible Unknowns.” In a two hour long discussion, Kuntze and Hauser shared recent findings from VL2 and other researchers on visual language and visual learning and the implications of these for post-secondary educational practices.

In a twist on the notorious statement from former U.S. Secretary of Defense Donald Rumsfeld on “known knowns and known unknowns, and unknown unknowns,” Kuntze observed that “there are things that people know but don’t realize they know, these might be behaviors that are so automatic that they are unconscious. When you take a step back and start to analyze why people do what they do then you may uncover knowledge that they have but did not realize they have, these are the unknown knowns.” The goal of this year’s professional development workshop at Gallaudet is to make explicit what is implicit, to draw upon and elaborate upon what it is that we

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know and do with visual language and visual learning in our pedagogical practices, in addition to establishing a firm foundation for these in the science of learning and educational neuroscience. Kuntze noted, “Turning more specifically to science and deaf people, studying deaf people and visual learning is an opportunity for us to uncover some of these unknowns. We have national laboratories to investigate unknowns and we now have a center on visual learning [VL2] that can give us further insight to human abilities, behavior, and learning. Sometimes what we uncover about deaf people challenges long standing notions that we thought was knowledge about humankind.”

In a thought-provoking discussion of the limits of paradigms in science that do not account for all of the available data, Kuntze noted that instead of seeing skilled deaf readers as being “outliers” in the general discussion in science and deaf education on why deaf children struggle to read, we should be studying this population to find out how and why some deaf readers learn to read well without consistent access to sound.

In an effort to push the boundaries of science and education in terms of knowledge, Kuntze argued that we should consider our “practical knowledge,” or those implicit forms of knowledge that the community holds in regards to ASL-English bilingualism. “One of the theories,” Kuntze noted, “that comes from our practical knowledge is that reading is how a deaf person learns English. Now for hearing people, they assume knowledge of English has to be the precursor to learning to read. For deaf people that reading is how a deaf person learns English seems counter intuitive to hearing people and outright contradictory to what their studies have shown. This is common knowledge in the deaf community, reading is how a deaf person learns English. So when a deaf person refers to English, they are more often than not referring to a written form of English.”

Much of the reading research, Kuntze said, is based upon how hearing children learn to read, and as such, is ultimately flawed when it comes to the different pathways that deaf children take to English literacy. We should be considering the multiple factors that go into literacy development and build upon VL2 research evidence (see below left for image of VL2 researcher Rachel Mayberry’s meta-analysis on phonological awareness) that shows that phonological awareness only accounts for 11% of the variance in reading proficiency in deaf students.

Hauser then followed Kuntze’s discussion with an engaging discussion.
of findings from VL2 experiments. One study Hauser conducted with VL2 researchers Jenny Singleton and Peter Crume that showed that deaf children from deaf families were better prepared for school and learning; their counterparts, deaf children from hearing families, had to be prompted to look at the teacher and to pay attention to whatever classroom activity was going on. Additionally, this preparation for taking in information in the classroom correlated to larger vocabularies. Linguistic knowledge, Hauser noted, is a larger predictor than phonological awareness for reading skill. Hauser then wrapped up the morning with an overview of VL2 and the five strategic focus areas, or SFAs (visual and cognitive plasticity; language development and bilingualism; reading and literacy in visual learning; translation of research to educational practice; and integration of research and education). For those of you who would like to watch this discussion, the presentation was filmed and is now archived.

After the morning session, Gallaudet faculty had the option of attending two concurrent workshops, one led by Dr. Susan Mather (Linguistics Dept.), on “Reducing Split Attention During Lectures.” Mather’s presentation drew upon information and research she and Dr. Diane Clark, VL2’s post-secondary engagement coordinator, recently published in the annual issue of the Laurent Clerc National Deaf Education’s magazine, The Odyssey. In “An Issue of Learning: The Effect of Visual Split Attention in Classes for Deaf and Hard of Hearing Students” (pp. 20-24).

Bradbury closed the session by noting, “educational practices in our classroom must keep up with cognitive science and current practices in what we know and in terms of the research.”
Co-PI Notes from Laura-Ann Petitto and Tom Allen

At VL2, like virtually all other research labs and academic departments in universities throughout the land, September 1 is like New Years Day! It marks the new beginning of an academic year, the new beginning of a grant year, the welcoming of new full-time staff into the Center, a new lecture series, and the greeting of new students into research labs as we see our veteran students leaving us and going off to their new roles in other academic settings (hopefully better off for the time they have labored at our sides over the past four or five years). It is also the time for great expectations for the future: our New Year’s resolutions, as it were…

And they are many, and very ambitious. First and foremost, the ground-breaking science that is advancing the frontiers of knowledge turns the page to a new academic year in each of the fifteen VL2-affiliated labs across the United States and Canada. We are looking forward to the blanket of new knowledge and discoveries that will spread over journals and conferences in the coming year with methodologies that range from computational modeling to new fNIRS brain imaging experiments with infants, to analysis of fMRI data of deaf readers, to the statistical modeling of longitudinal survey and assessment data, and to publishing the first brain imaging studies of the developing bilingual child’s remarkable journey from not reading to reading in two languages!

We are especially excited to welcome the first research participants into the Brain and Language Lab for an fNIRS study. Over a year in development and preparation, BL2 is fully ready, fully staffed, and up and running!

We are especially excited to welcome the first research participants into Petitto’s neuroimaging lab, the “Brain and Language Lab,” or “BL2,” for two fNIRS studies on September 14, 2012! (Like fMRI, fNIRS measures blood flow changes in the brain, but has many advantages over fMRI for the study of human language and higher cognition across the lifespan, spanning development from tiny infants to adults.)

This first study from BL2 explores the biological foundations of unique aspects of American Sign Language grammar, asking what is at the neural “heart” of linguistically creative processes possible with ASL classifiers. The second study investigates how early versus later bilingual experience impacts brain organization for language processing in young deaf visual learners with and without cochlear implants. Under the directorship of Dr. Laura-Ann Petitto, our VL2 advanced PhD graduate student, Clifton Langdon, leads the first study above, with wonderful assistance from our VL2 International Graduate Student Intern, Kaja Jasinska, and Kristine Gauna (both BL2 lab members), in addition to Clifton’s dissertation committee. And how thrilled we are to add to this piece of history for Gallaudet University: Clifton Langdon’s study will be part of Gallaudet’s first neuroimaging dissertation with the
data collected here on our own entirely research-dedicated state-of-the-art brain recording technology. To be sure, after a year in development and preparation, BL2 is truly fully ready, fully staffed, and up and running!

Next, we are very excited by new translational products that will be rolled out during the coming year: a set of beautiful ASL-English bilingual storybook apps for the iPad that are inspired by our research findings regarding the benefits of bilingualism to the advancement of reading and literacy; a set of materials designed for parents that brings the discoveries of the Center into focus and makes them relevant for parents, including research briefs, videos, a parents’ package, along with a set of accessible apps and web pages in ASL and English that will inform best practices in early childhood education; and an ASL assessment portal that will provide a one-stop shop for teachers and psychologists, and others needing access to available on-line ASL assessment tools.

As you can see here (and from the other articles in this issue of Vision) our plans for the year are exciting and exceedingly ambitious. Science, Translation, and Student Training are the focal points of the National Science Foundation’s six Science of Learning Centers around the nation, and our VL2 Center (one of the six) is at the cusp of some very great advancements in all three domains! That’s why we say:

Happy New Year!

—Fondly,
Tom and Laura-Ann

VL2 & Educational Practice and Policy in Canada

Sept. 11 and 12, Laura-Ann Petitto traveled to Ottawa, Canada to meet with officials at the L’école provinciale ontarienne des sourds et malentendants du Centre Jules-Léger (the provincial Ontario school for deaf and hard of hearing children at the Center Jules-Léger.) This is the only French-Language provincial Institution that provides services and programs for deaf and hard of hearing children, in addition to blind, Deafblind, and learning disabled children.

The purpose of this visit was to explore and exchange ideas about educational practice and policy involving deaf children at the national/Canadian and international (Canada/USA) levels.
Brain and Language Lab (BL2)/VL2 International Graduate Student Intern and Ph.D. student (University of Toronto) **Kaja Jasinska** was invited last summer to participate in the Summer Fellows Institute (SFI), a cross-SLC workshop in advanced statistical analyses hosted by the Temporal Dynamics of Learning Science of Learning Center (TDLC) at the University of California-San Diego. The Summer Fellows Institute program includes intensive instruction in computational modeling and advanced statistical analysis as well as EEG neuroimaging, all of which will provide Kaja with advanced tools to address the guiding research questions of her dissertation and which will further enhance Kaja’s existing research skills. A specific goal of attending the TDLC SFI is to advance the application of computational models and statistical analyses to fNIRS neuroimaging data. Gallaudet University’s Office of the Graduate School also provided support for travel and participation.

**VL2 Graduate Research Assistant Clifton Langdon** traveled to the Fifth Congress of the International Society for Gestures Studies (ISGS) in Lund, Sweden in July 24-27th. The purpose of this travel was to disseminate findings from his study on the relationship between the developmental milestones for symbolic play and language acquisition. Additionally Clifton networked with gesture researchers who frame their work within the domains of human development, linguistics, and psychology. The trip was very successful with a strong show of interest at Clifton’s poster. In addition to the discussions about the poster, Clifton also developed new relationships with a number of wonderful researchers from around the world, which has lead to, in part, plans for visiting the DCAL (Deafness, Cognition, and Language) research center and developing a research project with **Jennie Pyers** from Wellesley College.

Congratulations to our VL2 alumni! **VL2 post-doctoral fellow Shilpa Hanumantha** is now a lecturer in the University of Virginia ASL program; **VL2 pre-doctoral fellow Gabrielle Jones** is now faculty in the School of Education at Boston University; **VL2 RA Concetta Pucci** is adjunct faculty in the Social Work Dept. at Gallaudet; **VL2 RA Millicent Musyoka** is a Deaf Studies/Deaf Education faculty member at Lamar University; and **VL2 graduate assistant Gizelle Gilbert** is now a school psychologist at Phoenix Day School. All best from us here at VL2!
It’s been a busy summer for the folks at the Morford Lab at the University of New Mexico. This is a month-by-month tour with the Morford Lab, run by Jill Morford (pictured right), the leader of VL2’s second strategic focus area, language development and bilingualism.

June

Jill Morford, UNM, met with Christian Rathmann, University of Hamburg, and two graduate students at Hamburg who have worked on VL2 projects, Okan Kubuš (pictured left) & Agnes Villwock. After meeting, we completed a manuscript describing cross-language activation in deaf German-DGS bilinguals. The manuscript is currently under review.

Pilar Piñar, Gallaudet, Jill Morford, UNM & Agnes Villwock, Hamburg, presented their research on ASL-English bilinguals at the Workshop on Crosslinguistic Influence in Non-native Language Acquisition in Lisbon, Portugal. (Morford and Villwock, pictured at right right).

July

UNM undergraduate research assistant Teri Jacquez spent 3 weeks in Sienna, Italy learning LIS and collecting data for a research project investigating effects of iconicity on signed language processing.

August

New VL2 RA at UNM: Paul Twitchell. Paul was an undergraduate intern at VL2. After completing his BA in Linguistics, he worked for 2 years as a teacher at the ASL Academy in Albuquerque, NM. He returned to graduate school this fall with a renewed sense of direction. He is eager to engage in research on reading and deafness. He’s also a new father and is enjoying teaching his one-year-old son to sign.

Upcoming news:

There was an overwhelming number of submissions on Signed Language Linguistics to this year’s High Desert Linguistics Society conference, to be held Nov. 1 - 3 in Albuquerque, NM. Two full days of presentations on signed language linguistics are scheduled! Paul Dudis, of Gallaudet University, will be presenting one of three keynote addresses.

For more information on the Morford Lab at UNM, please visit Morford’s website—http://www.unm.edu/~morford/
VL2’s Lecture Series is Back!

VL2 kicked off the 2012-2013 Lecture Series with Dr. D.J. Bolger, from the University of Maryland-College Park, and his discussion, “The Brain Might Read That Way.”

In this talk, Bolger presented a framework for understanding the development of reading ability in children based on research on...
reading acquisition and disability. This framework postulates that the growth of reading skill results from enhanced coordination and interactivity of brain regions involved in the visual (spelling), auditory (sound), and semantic (meaning) constituents of word processing. Bolger’s findings have theoretical and practical implications for understanding reading ability, disability, and instruction in the developing brain. This lecture was livestreamed and the video will soon be made available.

All 2012-2013 lectures will be held from 4-5:30 p.m., in GU’s MLC B111. Each will be live-streamed. Previous years’ VL2 presentations are available at Gallaudet’s video catalog and at GU’s website.

VL2 Lecture Series & Cognitive Educational Neuroscience Seminar

This year, the VL2 lecture series presentations are tied into a course for professional studies credit. The course will have three components: a pre-meeting, the VL2 lecture itself, which some may view in virtual real time via the webcast, and a discussion afterwards, in which students in the course have the opportunity to discuss issues directly with the presenter.

In addition to the recent student orientation and retreat, Hauser is working with the students to develop additional venues for sharing VL2 research, developing the science at work, and increasing opportunities for professional development.

In addition to the previous “Open Lab Meeting” video seminar series, in which different VL2 labs across the US (and indeed, the world) took turns hosting the meeting and discussing ongoing research with participants, SFA 5 will soon add a second video seminar series for students, the “SLT Video Seminar.” In conjunction with Hauser’s lab at RIT/NTID, the SLT will now host a series of student-centered video seminars.

The first SLT video seminar will be held Friday, Sept. 28, at 3 p.m. EST. For details, contact Rupert Dupler.

Student Leadership Team (SLT)

At the recent VL2 “boot camp,” or orientation workshop, new officers for the 2012-2013 Student Leadership Team (SLT) were elected. (See left for photo.)

Deborah Cates (Univ. of California-Davis) is the Conference Representative; Corrine Ochino-Kehoe (Univ. of New Mexico) is the Cross-Lab Representative; Amy Letteri (Gallaudet Univ.) is the Student Affairs Representative; Erica Israel (Rochester Institute of Technology) is the Science Mentorship Representative; and Adam Stone (Gallaudet Univ.) is the SFA 4/Translational Research Representative.

In an important step to furthering communications and fostering centeredness across all parts of VL2, a representative from the SLT will now participate in weekly executive meetings.

Announcement: the SLT will be having their retreat the weekend of the 20th. If there are any issues they need to address during the retreat, please let Erica Israel know before Sept 20th (email).
VL2 in The Atlantic Monthly

VL2 scientists certainly remain productive throughout the summer months! Peter Hauser discussed work performed by VL2 in an article by the Atlantic Monthly. The article, “How the Deaf Brain Rewires Itself to ‘Hear’ Touch and Sight,” discussed a recent research project that discovered deaf people use the auditory portion of their brain to process vision and touch.

Emmorey (VL2 SFA 3 Leader) & Colleagues’ Research

Karen Emmorey (a VL2 researcher and leader of VL2’s 3rd strategic focus area in reading and literacy in visual language), Weisberg, McCullough, and Petrie had their work, "Mapping the reading circuitry for skilled deaf readers: An fMRI study of semantic and phonological word-level processing" accepted as a SLIDE presentation at the Neurobiology of Language Conference.

Additional publications in process include:


VL2 Assessment Publication

VL2’s Post-secondary engagement coordinator, M. Diane Clark will publish “The VL2 – Spoken Language Phonological Awareness (VL2-SLPA) Measure” in the October 2012 issue of Psychology. Part of this work was presented at the 2012 Annual Meeting of the Association for Psychological Science, Washington, D. C., by Jessica Feldman as part of her undergraduate research internship with VL2.

Student Leadership Team Hosts Retreat at Gallaudet

Sept. 5-9, the Student Leadership Team created yet another impressive annual student orientation. For incoming VL2 students there was an introduction to VL2, while for all students, many professional development activities were scheduled, including statistical training, grant writing, and an introduction to working with fNIRS neuroimaging equipment. The retreat was held at Gallaudet, with part of the retreat happening in the Virginia woods in Prince William County.

VL2 Publication on Semantic Processing


VL2 Emerging Scholars

Gallaudet University’s Science of Learning Center, Visual Language and Visual Learning (VL2), has launched “Emerging Scholars,” a new lecturers’ pool featuring VL2 alumni and graduate students. These individuals represent the newest generation of our upcoming scholars, and they are eager to present important findings from VL2’s research and their own research to parents, teachers, and scholars.

ECE IV Save the Date!

The National American Sign Language and English Consortium for Early Childhood Education association has announced the dates of their next-and-fourth ECE summit. Join other ASL-English bilingual educators and practitioners at the Texas School for the Deaf March 21-23 for “Building Bilingual Partnerships: Home, School and Community.” For more information and registration, go to ECE’s site.

VL2 Undergraduate and Graduate Interns Sought for Brain and Language Lab (BL2) Research

The Brain and Language Lab at Gallaudet University is seeing applications for a graduate and undergraduate internship. The ideal candidate for the undergraduate internship will be an upperclassman student (junior or senior) with some background in linguistics or psychology. Familiarity with statistics is also desirable, but not necessary. The internship will ideally be filled for a period of one year. The internship will start as an unpaid position, with the possibility of promotion to a paid internship position. Applications for a graduate level internship are also being accepted.

SFA 4 Leader Singleton Seeking Lab Manager @ GA Tech
Jenny Singleton is looking to fill a part-time “Lab Manager” (Research Technician III) position in her research lab at Georgia Institute of Technology in Atlanta, GA. The position is 75% time (i.e., 30 hours/week) and includes benefits. BA degree required. The position involves helping to manage and carry out research activities related to how infants and children learn American Sign Language and visually engage with their environment. The preferred applicant will know American Sign Language and will be comfortable interacting with infants and young children. The position also requires some travel around the U.S. Start Date: As soon as possible, preferably by Oct 1, 2012. Please contact Singleton by e-mail if interested.

UC-Davis Seeking Deaf Scholars for Possible Post-Doc

Professors Nathalie Belanger and Roger Levy are looking for Deaf applicants to possibly work with them (pending funding) on the following: various aspects of reading and language comprehension, including such questions as the nature of the visual span, the effects of differing orthography on language comprehension, and the time course with which different visual and linguistic information sources are recruited during reading. If interested, send an email.

Maryland School for the Deaf’s “3-peat” in GU’s Academic Bowl

The national Academic Bowl tournament, hosted by Gallaudet University, draws deaf and hard of hearing high school students from around the U.S. Maryland School (Frederick) for the Deaf recently won their 3rd straight title. In “What is MSD’s Secret?” James Tucker, MSD’s Supt., cited “early language acquisition and direct communication as being critical for academic knowledge, insights that are confirmed by VL2’s research.

Mandarin Translations of VL2 Research Briefs Make an Impact in China

Last summer, VL2’s Digital Technician, Wei Wang, flew to China to present at two camps for deaf and hard of hearing Chinese youth. Wang presented a short overview of VL2 research, along with a message concerning the importance of research on bilingualism for deaf and hard of hearing youth around the globe. At both camps, Wang disseminated translations into Chinese of VL2’s research briefs (supported by the Laurent Clerc National Deaf Education Center). These briefs were very well received.

Anjali Forber-Pratt, Team USA Paralympian/Former VL2 RA

Former VL2 research assistant Anjali Forber-Pratt was recently profiled in The Wall Street Journal’s “Market Watch.” In this piece, Forber-Pratt—a wheelchair sprinter—shares her experiences competing in the Women’s T53 100m, 200m, and 400m during the London Games. While a PhD student, Forber-Pratt worked with Jenny Singleton at the University of Illinois-Champaign.