# VISION

your source for VL2 news, projects, and research findings





## VISUAL LANGUAGE & VISUAL LEARNING

### VL2 co-hosts Qualitative Colloquium

On December 11, 2007, four well-known qualitative researchers came to the Gallaudet University Kellogg Conference Center to share their methods at an event co-hosted by VL2 and the Dean of the Graduate School and Professional Studies. This Colloquium focused on qualitative research methods for classroom research.

Dr. Joseph Maxwell of George Mason University gave a lecture titled "Qualitative and Quantitative: Two Scientific Ways of Knowing." According to Dr. Maxwell, the traditional research method has been quantitative; however, in cultural terms, the qualitative approach brings to light important information.

Dr. Bud Mehan, from the University of California, San Diego, presented on "Classroom Ethnographies in School and Community Contexts." His research focused on classroom learning to obtain broader



insights. Classroom clips demonstrated the effectiveness of these methods.

Dr. Carol Lee, a faculty member at Northwestern University (pictured above), demonstrated how video uncovers cultural knowledge in her presentation, "Video Records as Data for Examining the Multimodal and Cultural Modes of Communication in Classrooms." The use of her video clips demonstrated subtle and important issues that tend to be overlooked in traditional research paradigms.

The final presentation by Dr. David Dickinson, a professor at Vanderbilt University, titled "The Road Rarely Taken: Examining Language in Early Childhood Classrooms," focused on approaches for examining and supporting language learning in preschool classrooms. Dr. Dickinson discussed methodological challenges and central findings regarding the language experiences of children.

In addition, three Ph.D. students in the Department of Education presented parts of their dissertations that include work from the Signs of Literacy database. This important data set was collected by a group headed by Drs. Erting and Bailes of Gallaudet University and provides evidence of student success in the bilingual setting of Kendall School-part of the Clerc Center at Gallaudet. Raychelle Harris, Margaret Klotz, and Rosalinda Ricasa used video clips of student/teacher interactions to analyze the components of successful classroom pedagogy.

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# FAQ

#### 1. What is VL2?

VL2 is one of 6 Science of Learning Centers (SLC) funded by the National Science Foundation. Our research focuses is on Visual Language and Visual Learning (abbreviated to VL2) and we are housed at Gallaudet University.

#### 2. What is VL2's mission?

VL2 brings together an international team to study how visual and gestural languages facilitate the learning of written English and how visual learning environments and visual technologies promote social and cognitive development.

#### 3. Who is involved with VL2?

Scientists and researchers, both Deaf and hearing, are involved with VL2. The main areas of expertise include linguistics, cognitive sciences, psychology, and education.

4. How can I get involved? You can get involved in many different aspects, as a student, staff, faculty member, or researcher. Check out our wiki site at vl2wiki.editme.com.

5. Where can I find more information? If you're in Washington DC or nearby, feel free to visit the center. If not, our mission, objectives, and research work are explained on the main website, vl2.gallaudet.edu.

## 6. What kind of work does the VL2 do other than research?

VL2 hosts a bi-weekly presentation series, with the last one for this academic year scheduled for April 16. Look for our flyers with more information (they can be found on the website, under documents). Presentation themes vary, and include grant writing, research on deaf readers, visual engagement, and the neurological basis of deaf readers. Stay tuned for future colloquiums.

## LIFE's "Hot Topic" - focusing on Diversity in Seattle

On January 11 and 12, 2008, NSF's LIFE Center (<u>http://life-slc.org</u>) hosted a "Hot Topic" discussion on the importance of a multicultural focus in research at the University of Washington in Seattle. Drs. Diane Clark and Angela McCaskill participated in the workshop on more firmly including cultural contexts in research efforts.

The discussion focused on the recently released report titled, "Learning in and out of school in diverse environments: Life-long, Life-wide, Life-deep". This report resulted from the LIFE Diversity Census Panel's work and highlighted the theme of "life-long and life-wide learning." A major assumption of this report is that if educators make use of the informal learning that occurs in the homes and communities of students, the achievement gap between marginalized students and mainstream students can be reduced. This theme runs through the work of VL2 as well as the Center for ASL and English Bilingual Education and Research (CAEBER.)



(higheredcenter.org)

## "Hot Topics" at AERA

On March 26, 2008, at the American Educational Research Association (AERA) conference in New York City (<u>www.aera.net</u>), VL2, the Journal of Deaf Studies and Deaf Education, and the AERA Special Interest Group (SIG) Research on the

Education of Deaf Persons co-sponsored a "Hot Topics" discussion. This year the three hot topics included: 1) Conducting theory-based research on individuals who are deaf and hard of hearing; 2) Narrow and Broad Views of Literacy; 3) What makes a teacher "highly qualified?" These discussions were designed to facilitate interactions between SIG members on "hot topics" that are not typically a part of the dialog during the formal paper sessions or business meeting. The goal was to engage



individuals from a range of backgrounds and perspectives. Stephanie Cawthorn, Diane Clark, Peter Paul, and Barbara Schirmer facilitated the discussions in a room that was too small for the overflow crowd of more than 30 researchers. Following these often "hot" discussions was a reception which permitted continued informal conversations.

Newsletter is edited and designed by Melissa Malzkuhn. All inquiries should be directed to v12@gallaudet.edu.

# research

## Bilingual, how?

From the University of New Mexico, affiliated with the VL2 center, Dr. Jill Morford (pictured here) and doctoral candidate, Erin Wilkinson (pictured below)



have been conducting research on how native ASL users acquire English words. They have discovered that English words activate ASL translation equivalents in deaf bilinguals with

varying levels of English proficiency. This research is ground breaking because ASL signs share only semantics (information about meaning), not phonology (sound based information) or orthography (how the words are written), with English words. Historically it has been difficult to know what an ASL/English bilingual did when learning new signs or words. Morford and Wilkinson's research showed that crosslanguage activation occurs across modality -

between a visual language (ASL) and an auditory language (English), providing preliminary evidence that ASL translation equivalents may aid Deaf readers



who are ASL-dominant to learn English. Deaf readers typically learn English after print exposure instead of prior to print exposure. Thus, mapping English word forms to ASL signs may be one path to achieving literacy.

## Reading competency of Deaf people challenges old theories

A research team led by Guinevere Eden at the Center for the Study of Learning at Georgetown University, including Daniel Koo a postdoctoral fellow, focuses on the brain signature for single word processing in deaf people who are competent readers. Current theories on reading place a heavy emphasis on the role of speech and auditory abilities for achieving reading competency. But skilled deaf readers of varying language backgrounds provide a challenge to this notion and brain imaging technology will allow the researchers to examine which brain areas are recruited when reading is accomplished under diverse language and sensory experiences.

The research team has recently received funding from the NSF and the NIH to study the brain basis of reading in the deaf through the lens of bilingual research. Subjects who are bilingual and bimodal (accessing a language that is visual and another that is oral, such as ASL and English) will be examined to see whether they engage the same brain regions as bilingual hearing subjects whose two languages are within the same modality (Spanish and English.) They will also examine the functional anatomy of reading in bilingual versus monolingual hearing subjects. The results will provide insights into the cortical architecture for reading in bilingual populations and may have implications for beneficial instructional approaches to reading acquisition.

## Research to Practice Integration

The Center of ASL/English Bilingual Education and Research (CAEBER) is working on a research project that focuses on an "insider" perspective with regard to the processes and challenges experienced by deaf individuals learning to read. The questions focus on how skilled deaf readers become proficient at reading. In the past, most research was conducted by hearing professionals who are "outsiders" with regards to deaf culture and visual languages.

This study investigates how children who acquire language primarily "by eye", rather than "by ear", become competent readers. In order to gather data, information, and insights, Drs. Stephen Nover and Judy Mounty with Connie Pucci, a Ph.D. candidate at Gallaudet University, have been interviewing deaf teachers and parents who are fluent bilinguals and also involved in the field of deaf education.

To date, seven interviews have been completed and another eight are scheduled. The interviews focused on several topics: personal and professional experiences with ASL/English acquisition, as well as its development, and use; the relationship between ASL and English; views regarding the purpose of reading and how that is similar or different for hearing and deaf readers; the characteristics/behaviors of bilingual readers, and of students who are transitioning from "learning to read" to "reading to learn."

The data in these interviews are rich and provide insight into these literacy practices of native users of ASL. Additionally, they will be used as the basis for the development of a survey to further our understanding of how these visual learning practices relate to visual languages. These data support the notion that full access to a language early in development is essential to becoming a skilled reader; and for these deaf children, ASL as a first language is fully accessible. A common theme in the interviews is that fingerspelling plays an important role, as a bridge between signs and print, and may be essential to enhancing and expanding vocabulary in English – a critical component for skilled reading.

Further steps for this study include a more critical examination of the data, the development of case studies, and an online survey to be administered with a wider example.



The Mission of CAEBER is to provide a bilingual professional development model that promotes effective bilingual instruction using ASL and English for deaf and hard-of-hearing students.

# Deaf-Friendly Ethics





The Science of Learning Center for Visual Language and Visual Learning (VL2) has developed a set of <u>ethical guidelines for scientists</u> whose research involves individuals who are <u>Deaf or hard of hearing</u>. The VL2 Center involves deaf and hearing scientists working together as a model of culturally sensitive and ethical research practice, or "Deaf-friendly Science," setting standards for collaborative studies. Longstanding challenges exist to conducting ethical research with deaf participants, such as language accessibility in obtaining informed consent and protection of participation identity in videotaped data. VL2 researchers Jenny Singleton and Jeffrey Goetz (University of Illinois at Urbana Champaign) discuss important ethical issues and offer an initial set of recommended practices in their recently submitted paper. Outcomes for the scientific community of VL2 Ethics research include a VL2 webpage that provides bibliographic resources on ethics in research involving Deaf participants, samples of Informed Consent Videos in ASL, and guidelines for obtaining informed consent and ethical use of video data.

# **VISUAL ENGAGEMENT**

## Singleton & Crume

For deaf children, visual engagement with teachers and peers is critical for successful language development and classroom learning. At the University of Illinois at Urbana-Champaign, VL2 researcher Jenny Singleton (pictured on left) and her graduate student Peter Crume (pictured on right) are seeking to understand the nature of visual engagement and how it develops. In particular, they have examined the strategies that Deaf preschool teachers use to support four year-old deaf



children's development of visual attention and participation in a visual learning community. The researchers documented the teachers' use of linguistic and nonlinguistic strategies to gain and direct the attention of their deaf

preschool students. In these visually complex interactions, the expected focus of students' attention rapidly shifts among multiple targets (e.g., from the teacher's signing, to a picture in a book, to a peer's signing, and then back to the teacher again). Also important were teacher-provided cues that appeared to help students understand the importance of turntaking in conversation and behavior expectations for a group setting that relies on visual communication. Singleton & Crume's research aims to help researchers understand how a biological system like visual attention can be influenced by cultural and linguistic practices. This work also has important implications for educators working with deaf children and how they can optimize visual engagement in their classroom practice. In future work, Singleton and her research group will examine the relationship between particular strategies and children's visual attention and the developmental trajectory of eye gaze functions in classroom discourse.



# Deaf Studies Laboratory

This year we are investigating the effects of hearing loss vs. sign language experience on deaf individuals enhanced peripheral vision attention, and plenty more.

Dr. Peter C. Hauser, the co-director of VL2's Cognitive Neuroscience Strand, has a laboratory at the National Technical Institute for the Deaf (NTID) in their Department of Research and Teacher Education. His laboratory, the Deaf Studies Laboratory (DSL), is an interdisciplinary



BACK ROW: Jason Listman, Tara Hillman, Lidiya Gavrilenko, Lisa Velez, Corey Clark; FRONT ROW: Dr. Matt Dye, Dr. Peter Hauser, Jessica Cuculick, Josh Allmann.

behavioral and neuroimaging laboratory that is student-centered and strives to bring more deaf and hard of hearing students into the science disciplines. DSL currently has five undergraduate and two graduate research assistants. In addition to funding from NSF through VL2, the lab receives funding from the National Institute of Health (NIDCD) and from the Department of Education through its grant to NTID for educational research. Many of DSL's studies are conducted with its partner lab, the Brain and Vision Laboratory in the Brain and Cognitive Science Department at the University of Rochester. The students in DSL often work with faculty, research associates, and post-doctoral fellows from the University of Rochester and two of their doctoral students have offices in the laboratory.



Dr. Peter Hauser, Corey Clark, Jason Listman, Tiffany Panko

This year, DSL has been working on a number of projects including the development of the American Sign Language-Sentence Reproduction Test (ASL-SRT). Linguistic analyses of research participants' sign errors have been made using a database of over 150 hearing and deaf children and adults, including both native and non-native signers. The analyses have helped DSL develop a better rating system to sort out categories of sign errors. DSL's tech team has been working on developing an online mechanism for administering and scoring the test, including real-time capture of participants responses via internal webcams. This procedure will enable the raw data to be securely stored in one location rather than on individual laptops. A software system for raters is being developed that would enable them to retrieve videos from the server, score the responses, and automatically send experimenters their subjects' scores. The ASL-SRT is currently being used in several of VL2's Language Structure and Visual Modality (LSVM) strand's studies as well as in studies in the Cognitive Neuroscience Strand (CNS).

Other studies that DSL has conducted this year include studies investigating the following topics: (a) the effects of hearing loss versus sign language experience on deaf individuals' enhanced peripheral visual attention; (b) behavioral and neuroimaging correlates of deaf successful readers; (c) the impact of language on deaf individuals' executive functioning development; and (d) the assessment of

Attention Deficit Hyperactivity Disorder in deaf individuals. DSL is also developing other ASL assessment instruments in addition to the ASL-SRT and is developing an implicit measure of audism for future studies investigating the impact of perceived audism on identity, self-esteem, and academic achievement.

Two of DSL's deaf undergraduate research assistants are graduating this year, Wyatte Hall and Corey Clark. Wyatte's senior thesis focused on differences between deaf individuals from deaf and hearing families on standardized reading measures using a database of past and present NTID students (N > 7000). Corey's thesis focused on deaf college students' parent attachments including individuals from deaf and hearing families and from different educational backgrounds. They have been working in DSL since they were freshmen at RIT and recently have been accepted by Gallaudet University for graduate school. Wyatte has been accepted into their Ph.D. in Clinical Psychology program and Corey will be going to their School Psychology program. Wyatte is the sixth deaf research assistant from DSL who has been accepted into a doctoral program since DSL was established in 2003.

## **Research as Teaching**

The age-old dichotomy of EITHER research OR teaching is an artificial divide. All researchers, at some point in their careers, were mentored with regards to developing their own research line—this reflects an apprenticeship style of teaching. For many of us, that happened in graduate school—but for a lucky few it happened in their undergraduate studies. Our philosophy here at VL2 is that research is part of the faculty-teaching load and our students are thriving! Here are some comments from three of our undergraduate psychology interns involved with a project that was funded by the Gallaudet University Priority Grant mechanism.



Brianne Weber, Senior, Psychology Major

I have been interning with VL2 for the past year, and I wouldn't trade it for any other experience. VL2 is an organization that will allow you to experience research "hands-on"- without a textbook - and helps you acquire and improve valuable skills such as creating a project, doing a literature review, as well as collecting and analyzing data. You also work with an excellent team, and I was fortunate to have great co-interns and an excellent supervisor, Dr. Diane Clark, who really was involved every step of the way. We were encouraged to participate in meetings with other graduate students, professors, and top researchers. Being involved in a research project, writing up a paper, getting an opportunity to present it at the APS conference, and having the paper written for possible publication is a feat. This kind of accomplishment will definitely get you noted, whether it is in graduate school or in your career.

#### Gizelle Gilbert, Senior, Psychology Major

Being an intern at VL2 has been a rich experience. When another internship opportunity fell through, VL2 was there. I have been on board for almost a year. I never thought that I would actually enjoy "doing" research-it is entirely different from research for a class. I have learned far more than any classroom lecture could teach because experience is the best teacher. There is nothing like being front and center, right in the middle of it all. I get to see the day-to-day processes and I have been with this project from its birth. The team at VL2 makes the experience even greater—the interns, the staff, and especially our supervisor, Dr. Diane Clark. She is an excellent mentor, and she has such passion for what she does. The coolest thing is analyzing the data and being able to tell what the results mean. Experience...it does not get any better than this.





#### Jason Begue, Junior, Psychology Major

VL2 has taught me a lot about being a responsible researcher. My internship supervisor, Dr. Diane Clark, encourages us to gain confidence by picking our own research topics and by doing it ourselves. We created the surveys, recruited the participants, gathered data, analyzed it, and started to write a research paper as well as creating a poster! In addition, at VL2's bi-weekly meeting, we climbed in the same boat with Ph.D researchers by sharing ideas on a variety of research topics. Some of the topics were about various study approaches with regard to how deaf and hearing people acquire language. Through observing, we learned different research methods and tasks, and eventually I picked up important concepts and terminology used in the research context. My critical thinking skills were challenged and I am more confident about how to analyze data and so much more. It is an opportunity for me to be a part of VL2, and I have learned about being a responsible researcher-so I rolled up my sleeves and am ready for my future career in psychology.

As you can see, these kinds of experiences encourage consideration of research as a future career–clear evidence of this effect is also found in the number of students entering graduate school from Peter Hauser's Deaf Studies Lab!

# Meet the researcher: Erin Wilkinson

Congratulations to VL2 student researcher Erin Wilkinson, who recently completed her dissertation proposal. The dissertation will examine the underlying assumption of the classification of language types in signed languages by exploring the relationship between linguistic form and function in kinship terminology. Adopting Greenberg's 1966 approach to Universals of Kinship Terminology in reference to anthropological works (Fox 1967, Murdoch 1967, and Parkin 1997), this study similarly investigates kinship terminology in signed languages in search of patterns of structural complexity. By exploring the nature of the relationship between phonological structure and semantic domains, Wilkinson will identify generalizations in individual signed languages as well as those that hold cross-linguistically. Pilot data from a subset of languages, including American Sign Language, French Sign Language, Italian Sign Language, Japanese Sign Language, Norwegian Sign Language, and Tanzanian Sign Language has already been compiled, and language sampling will be expanded to thirty-four signed languages of geographically-dispersed regions. Preliminary analyses suggest that typological variation does exist among signed languages. Linguistic patterns reveal that kin terms are motivated yet contain degrees of arbitrariness, suggesting a continuum of interaction of arbitrariness and iconicity. Structural complexity in kinship terminology produces variation in grammatical marking of gender, age of referent, and generation. Typological studies of signed languages provide the opportunity to examine linguistic patterns to determine modalityspecific behaviors and language generalizations that may be universal.

## Depiction-related conference presentations from the lab of Paul Dudis



Four presentations on ASL depiction will have been made in the Spring of 2008, all based on work by LSVM Co-Strand Director Dr. Paul Dudis, his colleague from the Department of Linguistics, Dr. Kristin Mulrooney, and two VL2 Center Fellows, Clifton Langdon (pictured on left) and Cecily Whitworth (pictured below).

Two presentations were made at the Deaf Studies Today! Conference in Orem, Utah, April 10-12, 2008. In "Transcribing ASL Depictions of Events, Settings, and Entities", depiction identification procedures were introduced as part of coding and analysis of the many ways events and objects are iconically depicted in ASL. Part of this presentation included hands-on activities using these procedures. In "A Survey of Depiction in ASL Poetry", several linguistic features—particularly the use of the body, space, and perspective in iconic representations—were explicated. This presentation was intended to demonstrate the utility of the depiction identification tools being developed at VL2 for the analysis of literary texts and any other discourse genres in ASL. "Depiction and Signed Language Interpretation" will be presented on May 1<sup>st</sup>, 2008 in the Signed Language Interpreting Research and Practice Conference at Gallaudet University. Depiction identification procedures are demonstrated using video data of

interviews conducted in ASL, followed by discussion of research questions pertaining to depiction in and interpretation of

## Scholarship Awarded

Millicent Musyoka, a doctoral student in the Department of Education at Gallaudet University, is the recipient of the 2008 scholarship awarded cojointly by the Journal for Deaf Studies and Deaf Education/Oxford University.

Milly's research interest focuses on how deaf children's play supports literacy development. A native of Kenya, Milly also works at VL2 as a graduate assistant. ASL interviews and similar situations. A poster on "Annotating Real Space Depiction" will also be presented at the Construction and Exploitation of Sign Language Corpora workshop during the Language Resources and Evaluation Conference in Morocco on June 1, 2008. This poster identifies several challenges in the identification and coding of the various types of depiction in signed languages and describes possible solutions.

## Presentation by Cecily Whitworth

Ms. Whitworth will present a paper at the first annual SignTyp Conference at the University of Connecticut, Storrs, which will take place June 26-28, 2008. Entitled "Phonetics and Natural Classes in Signed Languages," her paper compares adult forms of 100 signs with those produced by a twoyear-old child. Child forms often involve the substitution of common hand configurations for more unusual or difficult ones. She suggests that substitutions occur due to featural similarities between the intended form and the produced form.



## Spring 2008 presentations

Here is a short overview on the biweekly 2008 VL2 presentation series, all given at Gallaudet University. All presentations were taped and can be viewed (when edited) through links on the homepage of VL2's website (www.vl2.gallaudet.edu.)

## January 31

"Grant Writing Process" by Dr. Jacquelyn Buckley of the National Center for Special Education Research.

# March 12

"Cross-modal plasticity resulting from early profound deafness" by Dr. Matt Dye, from the University of

# February 13

"Elements of skill crucial for deaf readers: what we know, what we don't know, and promise (not promises) for the future" by Dr. Leonard Kelly and Dr. Dragana Barac-Cikoja.

# April 9

"The Effect of Sensory Experience and Language on the Neural Signature of Reading" by Dr. Guinevere Eden and Dr. Daniel Koo, of Georgetown University.

# February 28

of visuo-spatial skills in ASL as a second language" by Dr. Susan Mather, Dr. Dennis Galvan, and Dr. Pilar Pinar, all Gallaudet University professors.

# April 16

"Visual Gaze as a Marker of Dr. Jeff Pelz of Rochester

## Center news / upcoming events

## Freshmen learn about VL2

Research starts when you walk through the door! Here at VL2, we want our firstyear Gallaudet students involved in the early stages of research by becoming a volunteer participant. Dr. Angela McCaskill, Research Administrator, and Melissa Malzkuhn, MA Candidate and Graduate Assistant at VL2, met with 9 different classes from November to December 2007 to present information about VL2 and offer them these research opportunities.

A fifty-minute powerpoint presentation was developed and about 120 freshmen signed up for the VL2 Volunteer Database. Their reactions were positive and sometimes amusing ("what about that drug research?") In this way VL2 introduced new college students to the possibilities of becoming involved with research. These freshmen asked thought-provoking questions and most of them gareed that they had an exciting future ahead with VL2! The possibility of understanding and discovering differences in deaf people made this opportunity come alive.

### Innovative communication through E-Pop

VL2 is presented with the challenge of maintaining communication with eight partner institutions, affiliated researchers, and students. Oh, did I mention that we have both deaf and hearing members of our team? To solve this riddle, the Center is trying out E-pop, a tool that combines webcams, instant messaging chats, and the ability to edit files simultaneously with up to 10 people at a time. VL2 has been using this system for the Communication subcommittee with positive results. As team members become more familiar with the system more components like group editing will occur.

## Students retreat

VL2 students are coming together for a retreat on the weekend of April 18 and 19. There will be workshops and discussions hosted by students to exchange ideas about research methods. VL2 students are using this opportunity to bridge the distance between their universities that are spread across the nation. Opportunities for face-toface networking is piggy-backing with their presentations at VL2's NSF Annual Site Visit.

## NSF Visit

Gallaudet will host both a team of NSF Site Visitors and their own VL2 team at the NSF Annual Site Visit on April 21 and 22. The VL2 team is looking forward to presenting their research finding to their colleagues. These visits allow team members to interact and network while also sharing their findings.



## **AFFILIATES**

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