NTID Scholarship Symposium

Tuesday, December 11, 2018

CSD – Student Development Center

RIT

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CSD Student Development Center
Rochester Institute of Technology

Welcome to our fourth NTID Scholarship Symposium! Today's event showcases scholarly work by NTID faculty and staff. Most of the work falls into one of the four categories of research noted by Strategic Decisions 2020:

1. Teaching and Learning
2. Language and Literacy/Communication
3. Communication Technology/Access and Support Services
4. Employment, Adaptability to Social Change and the Global Workplace

Creative work and projects in other categories also have been included.

Given the scholarship expectations of the university for annual appraisals and faculty promotion, this is an opportunity for faculty and staff to convene to share their scholarship and projects. More than 175 faculty and staff participated in the last symposium, and we are excited to have another opportunity to come together to share what we have been working on.

Kudos go to all the faculty, staff and students who submitted proposals for this event. The hard work and commitment demonstrated by these efforts is greatly appreciated, and sharing this work is vital to our continued collaboration, creativity and energy.

This program is sponsored by NTID Academic Affairs thanks to the help of the NTID Office of the President; NTID Professional Development; Department of Access Services; Technology and Information Services; Department of Visual Communications Studies; Communications, Marketing and Multimedia Services; and Facilities Management Services.

2018 NTID Scholarship Symposium Schedule

8:00-8:30	◥ **Registration/Check in and Continental Breakfast - Ellie's Place, CSD Student Development Center**
8:30-8:40	◥ **Welcome - Dr. Gerard Buckley, NTID President/Dean, RIT VP - CSD 1310**
	All Presentations in CSD-1310
8:45-9:10	**Student-Generated Flipped Classroom Lectures** Michael (Mike) Kane
9:15-9:40	**App Smack Down for the NTID Classroom** Linda Gottermeier, Bonnie Bastian
9:45-10:10	**An Update on the Center on Access Technology's Automatic Speech Recognition Pilot Program** Chris Campbell
10:15-10:40	**Using Augmented Reality to Promote Informal Learning for Deaf Visitors of Museums** Wendy Dannels
10:45-11:10	**A Study of Visual Discourse Markers in the NTID Writing Center** Patricia Kenney
11:15-11:40	**Synchronous Online Tutoring for Deaf and Hard-of-Hearing Students: An Analysis of Observed Functions** Lisa Elliot, Rebecca Carpenter
11:45-12:10	**Deaf and Hearing Teams: Including Students in the Faculty Development Process** Sara Schley, Scot Atkins, Carol Marchetti
12:10-1:15	Lunch
1:20-1:45	**Push Me-Pull You: The Value of Group Deliberation on Ethical Reasoning Among Interpreting Students** Robyn Dean, Vince Samar, Daniel Maffia
1:50-2:15	**The MMN as a Customized Indicator of Audiovisual Integration in CI Users** Ashley Gleason
2:20-2:45	**Categorical Perception in Cochlear Implant Users: Preliminary Results** Joseph Bochner
2:50-3:15	**The Gap Between Signifier and Signified: Communication on the "Hearing Line"** Rachel Mazique
3:20-3:45	**Hello Baby, Goodbye Brain?: In Search of the Truth About "Mommy Brain"** Bonnie Jacob
3:50-4:15	**Depth of Motion Lab** Heather Smith-Schmitz
4:15-5:15	**Wine/Hors d'oeuvres Reception (Ellie's Place)**

Student-Generated Flipped Classroom Lectures

Michael (Mike) Kane, senior lecturer, Business Studies

In addition to instructor-generated flipped classroom lectures for Spreadsheet Applications for Business (NAST-160) taught by Michael (Mike) Kane the last five academic years, students in his financial spreadsheets classes generated their own flipped classroom lectures. Each student selected a Microsoft Excel software-specific topic, created curriculum content, produced his or her own video, and completed a five-question assignment for the benefit of other classmates and future students viewing his or her e-curriculum video. Each video meets the media access requirements, including captioning and voice support, as mandated by the RIT provost's office. Camtasia Studio was the software utilized by the students.

Thirty-eight videos were created over a span of three academic years (2016-2019). Ten student videos will be shown during the presentation. The average video length is ninety seconds. Kane will share his grading rubric for this project and a quick glimpse of post-production survey results, including documented student preferences of viewing videos generated by the teacher or students.

App Smack Down for the NTID Classroom

Linda Gottermeier, Au.D., professor, Communication Studies and Services
Bonnie Bastian, speech language instructor, Communication Studies and Services

Last academic year, students used and evaluated 18 apps in the classroom that allowed interaction across cultures and communication modalities. It was expected that students would transfer use to future learning environments in college and work environments after graduation.

Join us in an "App Smack Down" to experience four apps that students found most beneficial for the classroom and future job placements.

An Update on the Center on Access Technology's Automatic Speech Recognition Pilot Program

Chris Campbell, research associate professor, Center on Access Technology

Since fall 2017, CAT has used Microsoft Translator in a pilot program for automatic captions in the classroom. CAT used materials such as real-time captioning transcripts, PowerPoint slides, syllabi, selected texts, and other course content to build custom language models to increase the accuracy of captions generated by automatic speech recognition, particularly with discipline-specific keywords not used in everyday conversation. CAT will share preliminary findings on the accuracy of ASR from courses used in the pilot program this semester.

Using Augmented Reality to Promote Informal Learning for Deaf Visitors of Museums

Wendy Dannels, associate research professor, Center on Access Technology

Optimizing the use of augmented reality (AR) technology, this presentation discusses the preliminary data collected focusing on making STEM content accessible to d/Deaf and hard-of-hearing learners in "live" presentation settings found within museums.

A Study of Visual Discourse Markers in the NTID Writing Center

Patricia Kenney, Ed.D., lecturer, Liberal Studies

This presentation focuses on a study of discourse markers between deaf peer tutors and their tutees in the NTID writing center. Discourse markers are short utterances shared between conversation partners, for example, "yes," "right," and "OK." Discourse markers make utterances between partners cohesive or can initiate transitions of topics or activities (Clark & Schaefer, 1989; Matei, 2010; Schiffrin, 1980).

Discourse markers also help partners find common ground during a discussion. In the writing center literature, researchers have begun to take notice of discourse markers and their importance during a tutoring session (Blau, Hall, & Strauss, 1998; Gilewicz & Thonus, 2003). These audible discourse markers can be irrelevant to ASL deaf students who rarely hear these signals.

My analysis of the discourse markers in the writing center revealed eleven recurring visual discourse markers. The study offers implications for increasing awareness of visual discourse markers that are successful in tutoring deaf students in a teaching/learning setting.

Synchronous Online Tutoring for Deaf and Hard-of-Hearing Students: An Analysis of Observed Functions

Lisa Elliot, Ph.D., research associate professor, Office of the Associate Dean of Research
Rebecca Carpenter, virtual academic community manager, Office of Associate Dean of Research

Literature on online learning suggests that faculty members are reluctant to participate in online teaching. Despite this resistance, students endorse online learning strategies, especially because online meetings provide more flexibility to manage their complex schedules. A case study analysis of some of these online sessions suggested that synchronous online tutoring is more beneficial than in-person sessions for some courses, and less beneficial in others. Specifically, synchronous tutoring can be helpful when materials can be incorporated into the tutoring session to foster active learning (Gehret, Elliot, MacDonald, 2017).

The Deaf STEM Community Alliance facilitates synchronous tutoring from NTID tutors and project staff. More than 35 students have participated, with over 170 tutoring sessions to date. This presentation reports on the synthesis of coding of a subset of these sessions. Using conversational data analysis techniques (Sidnell, 2012), the research team coded more than 500 segments of video-recorded tutoring sessions from STEM tutoring sessions in biochemistry, chemistry, mathematics and physics. Finkelstein (2006) identifies five functions of synchronous learning, including instruction, collaboration, support, socialization and informal exchange, and extended outreach. The analysis for our presentation is guided by the research question "how can observed synchronous tutoring activities be characterized using Finkelstein's model?"

Tutoring conversations were analyzed for: who was speaking, communication strategies, nature of the interaction, types of materials being used, and issues related to technology. Using Finkelstein's (2006) model, the tutoring sessions emphasized instruction and support in contrast to other functions.

While faculty concerns relate to difficulties with technology and adequate communication, the data from this study do not support those hypotheses. With training and available technical assistance, successful synchronous tutoring sessions focusing on student learning are possible.

Deaf and Hearing Teams: Including Students in the Faculty Development Process

Sara Schley, Ed.D., professor, Master of Science in Secondary Education-Research
Scot Atkins, Ph.D., associate professor, Business Studies
Carol Marchetti, Ph.D., professor, College of Science-Statistics and NTID

Project Assistants-students:

Josh Mora, Psychology

Edith Dong, Biomedical Sciences

Caroline Davis, Biomedical Sciences

Michelle Mailhot, Biotechnology

Marcus McClellan, Packaging Science

AJ Passarelli, Environmental Sustainability, Health and Safety

Nicole Dergosits, Applied Arts and Sciences

Britta Schwall, Business Administration

Cory Meyer, Business Administration/ Criminal Justice

Emily Waller, Biology

Nisha Panicker, Industrial Design

Jessa (Congxi) Wang, Communication and Media Technologies

Krupal Patel, Manufacturing and Mechanical Systems Integration

Fahmida Saki, Applied Arts and Sciences

Christina Burnett, Human-Computer Interaction; Psychology/Criminal Justice

*T*his project focuses on enhancing access, engagement and success of deaf and hard-of-hearing (DHH) students in post-secondary courses. The goal is to improve resources available for faculty teaching students in mainstreamed settings by partnering faculty with DHH student mentors in faculty learning communities (FLCs), identifying classroom access challenges, and developing strategies to address the challenges. Students' roles on the project were transformational: They became part of the solution. This presentation will include graphic examples of classroom challenges, strategies faculty developed with their DHH student mentors, and narratives of the DHH student mentor experiences. This presentation will include a discussion of how faculty learning communities helped transform student learning in this specific project. Students involved in this project were directly impacted by some of the enhanced strategies for DHH people.

12:10-1:15 p.m.
Lunch
(CSD 1st and 2nd floor Streets)

Push Me-Pull You: The Value of Group Deliberation on Ethical Reasoning Among Interpreting Students

Robyn Dean, Ph.D., assistant professor, ASLIE-Research
Vince Samar, Ph.D., associate professor, Liberal Studies-Research
Daniel Maffia, lecturer, ASLIE-Research

The Defining Issues Test (DIT) is an internationally used instrument that measures individuals' moral reasoning skills. DIT scores are correlated with age, education, and clinical practice. It is designed and administered by the Center for the Study of Ethical Development and has an extensive research literature.

As part of an interpreting ethics course in the American Sign Language and Interpreter Education (ASLIE) department in fall 2016, the DIT was administered to approximately 35 third-year interpreting students. Their average student score was 47 which is higher than the normative data for their age and education level. As an example, an individual with a graduate degree scores on average a 41 on the

DIT. Whereas an individual with a graduate degree in moral philosophy or public policy (arguably someone well-versed on these issues) gets an average score of 65.

The interpreting students' individual scores had an extensive range – from a high score of 72 to low score of 20. This raises the question of how ethics classes are traditionally designed – students deliberating amongst each other about how professional ethical tenets are effectively applied to scenarios. If the DIT were taken as a collective, if answers were negotiated, would the high scoring individuals have an effect on the low scorers or would the low scorers have an effect on the high scorers?

The results of a follow up study showed that all seven groups' negotiated DIT scores were higher than the individual group participants' combined, non-negotiated median scores. Students also did better on the DIT as a collective than they did individually with the exception of the "high scorer" who led the group. In most cases, the high scorer's DIT score was still higher than their group's negotiated score. Also, whether the group leaders knew or didn't know they were high scorers did not make a difference on the effect. All findings had statistical significance.

The MMN as a Customized Indicator of Audiovisual Integration in CI users

Ashley Gleason, undergraduate student, College of Health Sciences and Technology

Project Assistants:
Geo Kartheiser, Ph.D., DeafxLab
Matthew Dye, Ph.D., DeafxLab

Audiovisual integration in cochlear implant users has been a fairly well-studied topic in recent years, but there remains the need to investigate and develop a tool to use in individualized cochlear implant rehabilitation plans. Here, this proposed experiment is designed to develop a tool to measure CI

performance evaluation with the use of electroencephalography and the mismatch negativity (MMN) event-related potential (ERP), an electrical brain response to stimuli that deviates from the standard. The pre-attentive MMN ERP will be evoked using McGurk stimuli (stimuli where audio and visual stimuli are incongruent, but

fused to create a different perception from either contributor) while the participant is performing a distractor task. If successful, this tool also has potential for further studies related to speech and music perception, as well as potential for use in cochlear implant rehabilitation plans.

Categorical Perception in Cochlear Implant Users: Preliminary Results

Joseph Bochner, Ph.D., professor, Cultural and Creative Studies

*P*reliminary results will be presented from an ongoing investigation into the influence of auditory experience and critical periods on the development of categorical perception (CP) in cochlear implant (CI) users. Specifically, the influence of age of implantation on the development of phoneme categories in prelingually deaf cochlear implant (CI) users was investigated. The role of critical periods in the development of perceptual/phonetic categories is addressed, as well as relationships among performance on discrimination and identification tasks and scores on a speech recognition test. This line of research is intended to improve our understanding of speech perception in CI users and the effects of early auditory deprivation on the development of auditory/phoneme categories.

Preliminary results demonstrate the degree to which prelingually deaf CI users develop CP as a function of age of implantation. The performance of CI users in each group will be compared to one another and to normal hearing controls. Specifically, we address the location of category (phoneme) boundaries and discrimination performance within and between groups of participants. Data will be analyzed with particular attention to individual variation among CI users, and we will compare performance on discrimination and identification tasks to speech recognition ability.

The Gap Between Signifier and Signified: Communication on the "Hearing Line"

Rachel Mazique, Ph.D., assistant professor, Liberal Studies

*L*ouise Stern's collection of short stories in *Chattering* occurs on the border between the DEAF-WORLD and the HEARING-WORLD, or, as Christopher Krentz would put it, on the "hearing line." In her collection, Stern, at times, blurs the boundary of the hearing line, as characters are neither clearly deaf nor hearing; they are simply human beings desiring communication. All twelve stories are thus joined by an interest in semiotics.

In nine of the twelve stories, Deaf characters play a role—mostly central—sometimes peripheral, but, in the other quarter, the protagonists are hearing. When comparatively studying the range of protagonists, we see that Stern's interest in semiotics is one that crosses the hearing line. Her primary interest lies in the gap between signifier and signified—the place in which communication breaks down, ideas are inexpressible/difficult to grasp, and language defies meaning. In these fictional stories (as well as in real-life) Sign Language Peoples (SLPs) enact daily border-crossings between Deaf cultures and Hearing cultures. Traditional borders—geopolitical, literary, and geographical—thus break down.

Examined as a whole, Stern's collection of stories in *Chattering* illustrate both SLPs' affinity, or "deaf similitude" and a lack of place-based identity, as well as clear signifiers of geographical "place" and differences between SLPs. As Stern's stories move between disparate locations (the U.S., England, Brazil, roads near Guadalajara, Mexico, Venezuela, the Bahamas, and other unnamed locales), the range of life lived as an SLP renders a sense of a transnational Deaf Nation. No matter where an SLP is, the journey to Deafhood, the history of marginalization, persistent encounters with audism, and the nexus of community, language, and ontology, or Deafnicity, remains.

This presentation on *Chattering* will explore how Stern, as a transatlantic figure in the DEAF-WORLD and author who illustrates what it means to communicate on and across the hearing line, presents Deaf experiences in such a way as to render a transnational Deaf Nation of SLPs who daily navigate communication on the hearing line.

Hello Baby, Goodbye Brain?: In Search of the Truth About "Mommy Brain"

Bonnie Jacob, Ph.D., assistant professor, Science and Mathematics

Mommy brain, momnesia, baby brain, placenta brain ... there are many names for the idea that upon becoming a mother, a woman becomes less intelligent. But what's behind this idea? In this presentation, I will describe recent research focusing on this phenomenon, and the implications of "mommy brain," whether fact or fiction.

Depth of Motion Lab

Heather Smith-Schmitz, senior lecturer, Visual Communications Studies

The NTID Motion Lab is a space where NTID students, staff, faculty, and researchers come together working on innovative projects using Motion Capture technologies for product development, research and scholarship. The lab promotes and fosters student research and development through interdisciplinary partnerships and mentorship opportunities. There are a few projects going on in the lab: the NTID Motion Lab will give you a sneak preview of what they are working on.

4:15-5:15 p.m.
Wine/Hors d'oeuvres Reception