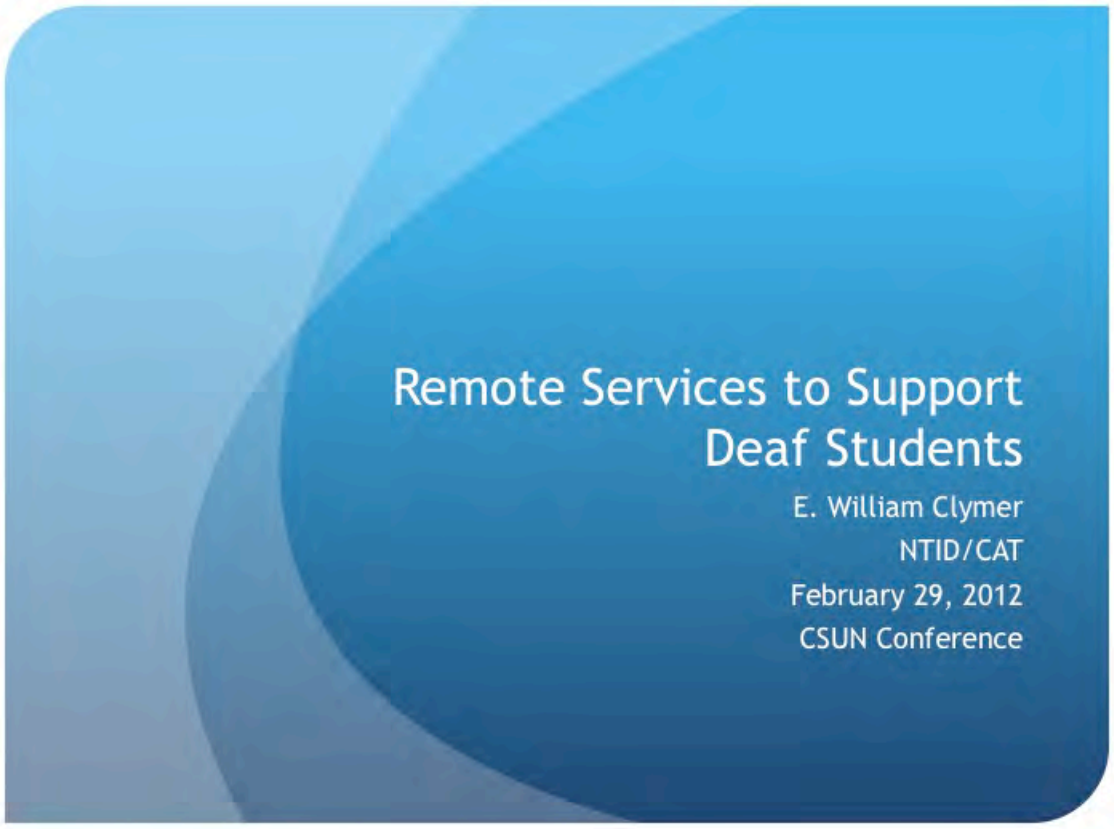
NTID Center on
ACCESS TECHNOLOGY
Rochester Institute of Technology
National Technical Institute for the Deaf
www.ntid.rit.edu/ca

Handouts



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Links to Resources

http://www.rit.edu/ntid/cat/enrichment/resources

Remote Services to Support Deaf Students

E. William Clymer
NTID/CAT
February 29, 2012
CSUN Conference

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Remote Services

- On demand delivery of specialized services for deaf and hard of hearing students at locations with technology infrastructure, but not experienced educators and/or support staff.
- Technology and infrastructure is ready to deliver consistent quality product via web-based videoconferencing systems.

3

Goals

- Provide a report and recommendations on the findings of two projects used to plan for a successful NSF Alliance grant to provide remote tutoring to deaf STEM students in mainstreamed postsecondary schools.
- Provide links to resources
- Discussion

4

Need to Increase Number of Deaf STEM Students – 3 NSF Grants

- Summit – Needs Analysis
  - Stakeholder focus groups and report
- Enrichment – Plan for Alliance
  - Baseline data on students
  - Lessons learned from support services and other alliances
  - Social networks, videoconferencing and learning management systems
- Alliance – Build a National Model for Remote Services
  - Continue development of systems, document and provide a national model

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Summit

- "Summit to Create a Cyber-Community to Advance Deaf and Hard-of-Hearing Individuals in STEM (DHH Cyber-Community)"
  - NSF Award # OCI-0749253
  - 09/1/2007 - 08/31/2010
  - http://www.rit.edu/ntid/cat/summit
- The goal of the Summit was to conduct a conference with 50 leaders in the field of support service provision for postsecondary deaf students in STEM programs
- The primary outcome was to report on the current state of online remote interpreting and captioning, and to identify the benefits and challenges associated with creating a multimedia

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Summit - Structure

- Lead by NTID/RIT & University of Washington
- Held at RIT immediately following NTID Technology Symposium, June 2008
- 6 Groups: 50 leaders
  - Educational researchers & developers
  - Coordinators of support services
  - STEM faculty
  - Cyberinfrastructure specialists
  - Captioners & interpreters
  - Students!

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Summit - Strategy

- Each group presents benefits & challenges associated with cyberinfrastructure
- In groups, develop recommendations
- Review by entire summit
- Final report

8

Summit - Report

Key Recommendations

- Original focus on remote captioning & interpreting
- Group, especially students, expanded scope to include a social network and community
- Need to bring sense of community and specialists to STEM students

Report

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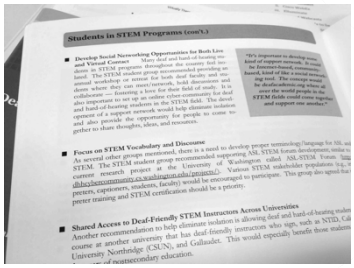
Summit – Report Format



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Summit - Recommendations

Faculty - Staff

- Preference vs. performance
- Elements of a successful business model
- Determining best practices
- Improving educational experience for deaf students
- Need to adjust teaching style

Empower Students

- Develop social networking opportunities
- Focus on STEM vocabulary and discourse
- Shared access to deaf access to deaf--friendly STEM instructors across universities

11

Summit – Key Principles

- Reduce student isolation on mainstreamed campuses
  -
- Improve the quality of STEM interpreting & captioning by providing remote captioning & interpreting
  -
- Provide instructional support from individuals knowledgeable with deafness
  -

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Enrichment

- "Enrichment : Testing the Concept of a Virtual Alliance for Deaf and Hard of Hearing STEM Students at the Postsecondary Level"
  - NSF Award # RDE-0927586
  - 09/1/2009 - 02/28/2011 (one year extension)
  - http://www.rit.edu/ntid/cat/enrichment
- The goal was investigate the creation of a virtual support network for deaf/hard-of-hearing college students around the country enrolled in science, technology, engineering, and mathematics (STEM) programs
- The primary outcome was a successful NSF Alliance Proposal!

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Enrichment – Baseline Data

- *Students in Transition: Demographics with an Emphasis on STEM Education* (2010, 49 pages) by Gerald Walter
- Demographic data on deaf students in the US
  - How many, grade levels, attending college, etc.

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Enrichment – Baseline

- College Students
  - 167,000 deaf or hard of hearing college students in the US (page 18)
  - 17% Deaf/HH in STEM majors
  - At all institutions, the following support services offered (page 17)
    - Sign Language Interpreting – 45%
    - Adaptive Technology – 22%
    - Notetaker – 69%
    - Tutor – 77%

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Enrichment – Focus Groups with PEPNet Outreach Staff 2007

Dr. Water

- Funding
- Student choice
- Online chat with other STEM students
- Universal design
- Mentoring important
- All deaf and HH community

Dr. Foster

- Materials accessible for HH and oral deaf
- Support of internships and practicum students
- Accessible media
- Instructor attitudes
- New teaching strategies

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Enrichment – Elements of Successful Support

Elements of Successful Support and Access Services for STEM Students Who are Deaf and Hard of Hearing (2011, 11 pages) by Peter Lalley

- NTID Model – Roles of faculty
- Tutoring
  - Address individual learning needs
- Advising-Mentoring
  - Communication ease, understanding deaf culture, academic credential, enhanced by instructional experience
- Liaison
  - Advocate for student within university, aware of developments, assist with transitions

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Enrichment – Elements of Successful Support

- Organizational Support Departments
  - Based on disciplines and housed in college
  - Instructional faculty means creditability
  - Location leads to interaction and acceptance into social networking of departments; important during first 2 years
- Access Services
  - Interpreting
  - Voice to text (C-Print)
  - Notetaking

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Enrichment – Elements of Successful Alliances

Features of Successful NSF Alliances and Models of Virtual Learning Communities: A Framework for Developing a Virtual Academic Social Network for Supporting Deaf and Hard of Hearing Students in STEM Education (2011, 10 pages) by Peter Lalley

- 4 NSF Alliances
  - MIND Alliance for Minority Students with Disabilities in Science Technology, Engineering and Mathematics in NY & LA
  - AccesSTEM: The Northwest Alliance for Students with Disabilities in Science Technology, Engineering and Mathematics -- Phase 2. WA

Enrichment – Elements of Successful Alliances

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- 4 NSF Alliances
  - Collaborative Research: Increasing Achievement and Transition Outcome in STEM Professions of Postsecondary Students with Disabilities; STEM Degrees and Careers for Ohioans with Disabilities. In OH
  - EAST Alliance for Students with Disabilities in STEM – Phase 2. In ME

Enrichment – Elements of Successful Alliances

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- Existing Alliance Goals
  - Increase involvement of HS students to transition them to STEM majors in postsecondary education
  - Increase retention and graduation rates
  - Increase entry into graduate school and STEM careers
- Differences with NTID Proposal
  - Deaf and HH students only
  - National model, not regional
  - Based upon cyberinfrastructure

Enrichment – Social Network

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- Venue for exchange among interested parities 24/7
- Array of services – online and remote services
- Clearinghouse of information – instructional, career and research results
- Dictionaries for students, interpreters & actionists
- Synchronous and asynchronous communication; audio – video and text.

Enrichment – Video Conferencing

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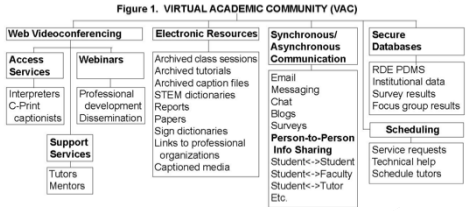
- NTID Virtual Academic Community Organizational Structure



Enrichment – Social Network

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- NTID Virtual Alliance – Prototype Main Screen

Enrichment – Social Network

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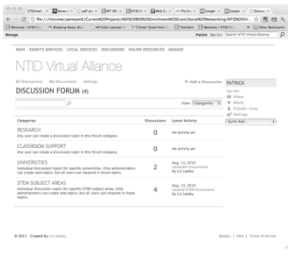
- NTID Virtual Alliance – Prototype Discussion Forums



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Enrichment – Social Network

- NTID Virtual Alliance – Google+ Main Screen

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Enrichment – Social Network

- NTID Virtual Alliance – Google+ VAC Circle

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Enrichment – Video Conferencing

- Required features
  - Platform interoperability – desktop, mobile, telepresence
  - Synchronous communication
    - Acceptable video quality
    - Instant messaging
  - Documentation
    - Document share
    - Document transfer
    - Shared whiteboard
    - Screen share
  - Captioning and interpreting capabilities

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Enrichment – Video Conferencing

- NTID Virtual Academic Community Elements

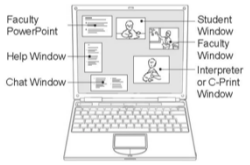

Figure 2.
This diagram shows all the possible elements of a web-based communication conferencing system. The teacher is on screen on the right, student is top left, interpreter is lower right, and the PowerPoint is top far-left. A chat window is open in the lower far-left, allowing the student to communicate with the teacher. Because the student and interpreter can see themselves on-screen, they can make sure that they are visible to each other. This allows bi-directional communication between student and interpreter. The windows are moveable; students can control the number of windows, placement on the screen, and size of windows.

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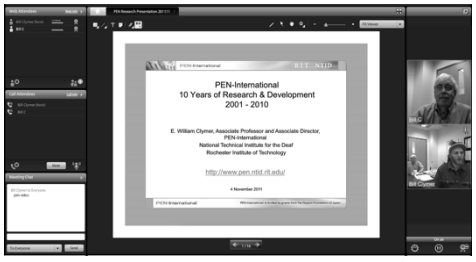
Enrichment – Video Conferencing

Fuze Meeting



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Enrichment – Video Conferencing

Google+ Hangouts with extras

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Alliance – Deaf & HH VAC

- "The Deaf and Hard of Hearing Virtual Academic Community Deaf STEM Community Alliance"
  - NSF Award # HRD-1127955
  - 09/15/2011 - 08/31/2014
  - http://www.dhhvac.org
- NTID/RIT, Camden County College, and Cornell University are constructing an on-line community to support the learning needs of students who are deaf and hard-of-hearing in the areas of science, technology, engineering, and mathematics (STEM).

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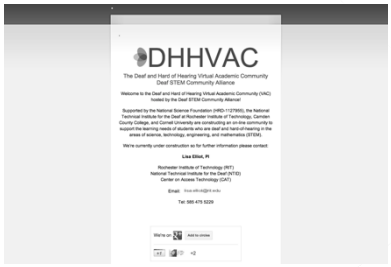
www.dhhvac.org



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Resources Online

http://www.rit.edu/ntid/cat/enrichment/resources