



The Deaf STEM Community Alliance: Who We Are and What We've Learned So Far

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Rochester Institute of Technology/National Technical
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NSF RDE Community of Practice Conference Call

April 9, 2013



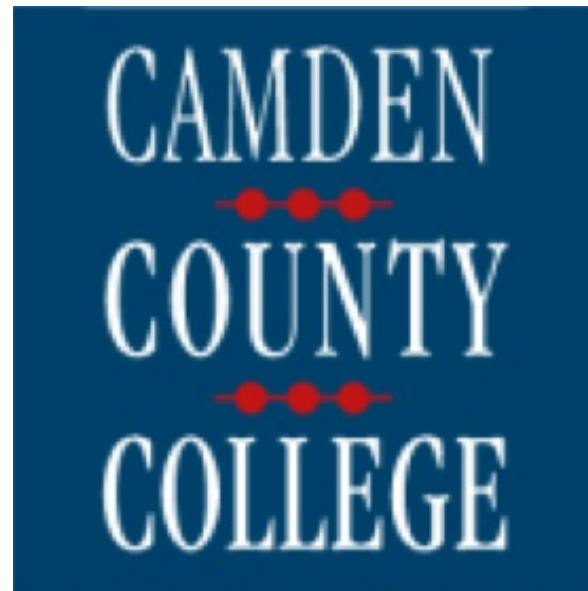
Who We Are

- Deaf STEM Community Alliance
 - Only Alliance targeted to a single disability
- Supported by the National Science Foundation, HRD #1127955
- 3-5 year project (Sept 2011- Aug 2016)
 - Now in our 2nd year





Campus Partners





Project Rationale

- Participation gap in STEM for students who are deaf or hard of hearing (D/HH)
 - National average graduation rate for D/HH bachelor's degree: 23% (vs. 73% at RIT/NTID) (all subjects)
 - Between 1997-2006, 420 out of 265,790 (~.2%) of new STEM PhDs were D/HH
 - Employment differentials in STEM:
 - Hearing 17.9% v 15.5% D/HH
 - Hearing in higher-earning STEM sectors than D/HH
- Contributing barriers:
 - Student preparation (STEM basic skills, concepts)
 - Socialization (peers, role models)
 - Accessible media



Project Rationale

- Solution: Deaf STEM Community Alliance
 - Student preparation
 - Remote tutoring
 - Remote captioning
 - Remote interpreting
 - Socialization
 - Remote mentoring
 - Peer interaction
 - Accessible media
 - Curated collection of STEM resources

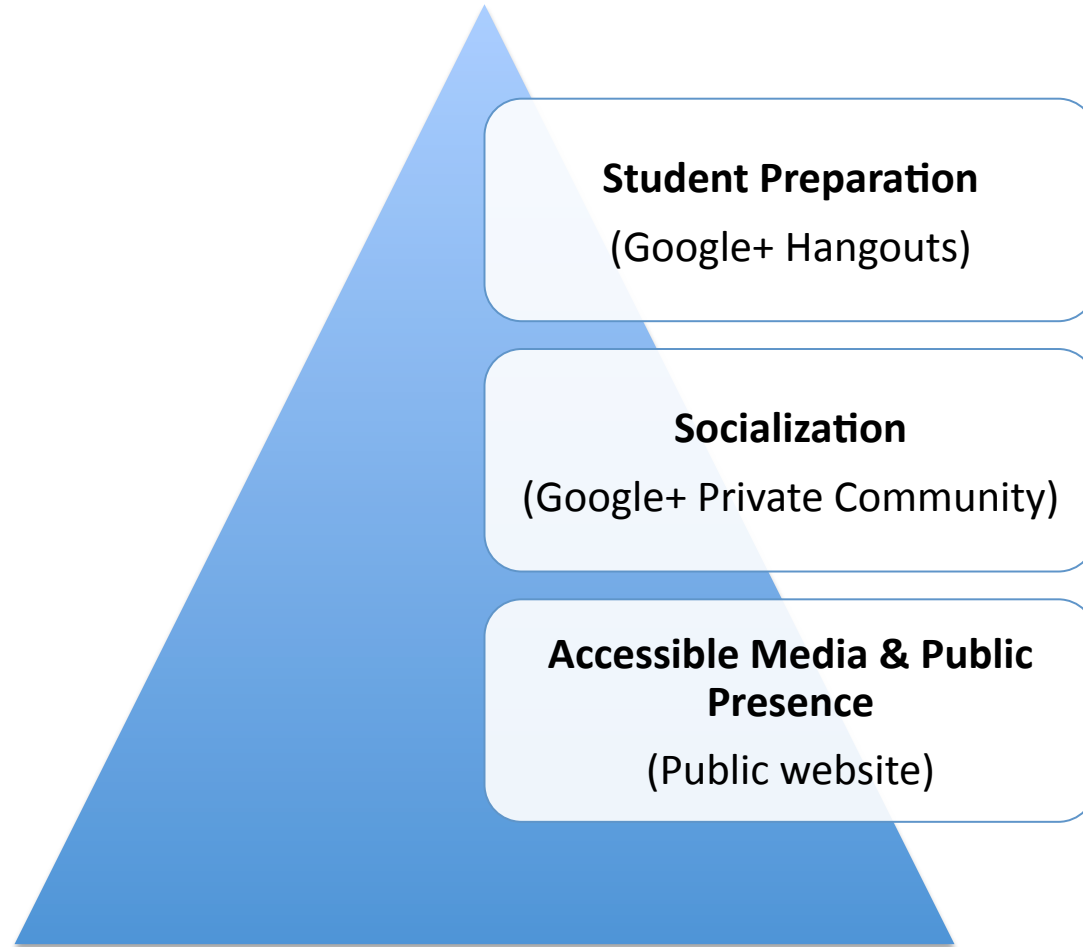


Goal and Objectives

- Goal
 - Create a *model* virtual academic community to increase the graduation rates of postsecondary D/HH STEM majors in the long term
 - Much smaller scale than other Alliance projects
- Objectives
 - Document and disseminate a description of the process of creating a model VAC for replication
 - Increase the GPAs and retention rates of D/HH students in STEM majors



Structure of the DHHVAC





Student Preparation

- Remote Captioning (Years 4-5)
- Remote Interpreting (Years 4-5)
- Remote Tutoring (Years 1-5)



Remote Tutoring

- Started with traditional, face-to-face model used at NTID
 - Faculty members provide individual and small group sessions to support students outside of class (appt.-based)
 - 2011-12, RIT/NTID provided more than 14,000 hours in STEM tutoring to D/HH students registered in courses in 8 STEM-related colleges at RIT (Applied Science & Technology; Computing & Information Science; Engineering; Imaging Arts & Sciences; Science) (~500 students)



Tutoring Models

- RIT Faculty/RIT Students: (T=6; S=12)
 - (RIT-RIT) Faculty in office, students in nearby learning center
 - (RIT-RIT) Faculty in office or other space on campus, students at home
- RIT Grad Student/Camden Students (T=1; S=2)
 - Only remote!
- RIT Off-Campus Adjunct/RIT Students (T=1; S=4)
 - Only remote!
- Cornell Student Tutor/Cornell Student (oral student) (T=1; S=1)



Methodology

- 1:1 tutoring sessions
- Google+ Hangouts as videoconference/chat platform
- 15 min-2 hr sessions
- Appointment-based scheduling
- Homework-oriented (vs. basic skills)
- Macs, PCs, desktops, laptops, Chromebooks



Lessons Learned So Far

- Tutoring strategies
 - Synchronous v asynchronous
- Scheduling
 - Appointments v “walk-in”
- Challenges
 - Network/browser inconsistencies
 - Training & technical assistance
 - Google+ UI changes
- Strategies
 - Ethernet connection/Chrome browser
 - Ongoing feedback & technical assistance
 - On-line guides
 - Google Educational Enterprise account



Socialization

- Remote mentoring (n=4; pending=2)
 - D/HH STEM professionals
 - Personalized recruiting
 - Application including background check
 - Google+ presence
- Peer-to-peer (community) interaction (n=35)
 - Google+ private community
 - STEM articles of interest
 - Share student schedules



Accessible Media

- Curated STEM Resource library on our public website: www.dhhvac.org
 - Project publications and presentations
 - Relevant work by others
 - STEM ASL dictionaries (e.g., ASL-STEM Forum)
 - Links to accessible STEM resources (e.g. Khan Academy, Math for College)



Discussion

Questions?

Answers!



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