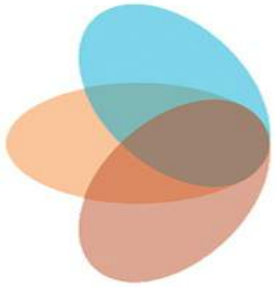

Improving STEM Retention with an Online Community of Practice

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For Your Consideration

Do you have students who are:

- Underprepared for STEM coursework?
- Underrepresented and isolated (STEM-wise)?
- Seeking role models who are STEM professionals?
- Looking for connections between course content and “real world” topics?
- Interested in pursuing internships, research opportunities, or STEM-related jobs?

Overview

- Who we are
- Rationale for the project
- Describe the online community infrastructure
- Tutoring, mentoring, and STEM dissemination activities
- Tracking engagement
- Q & A

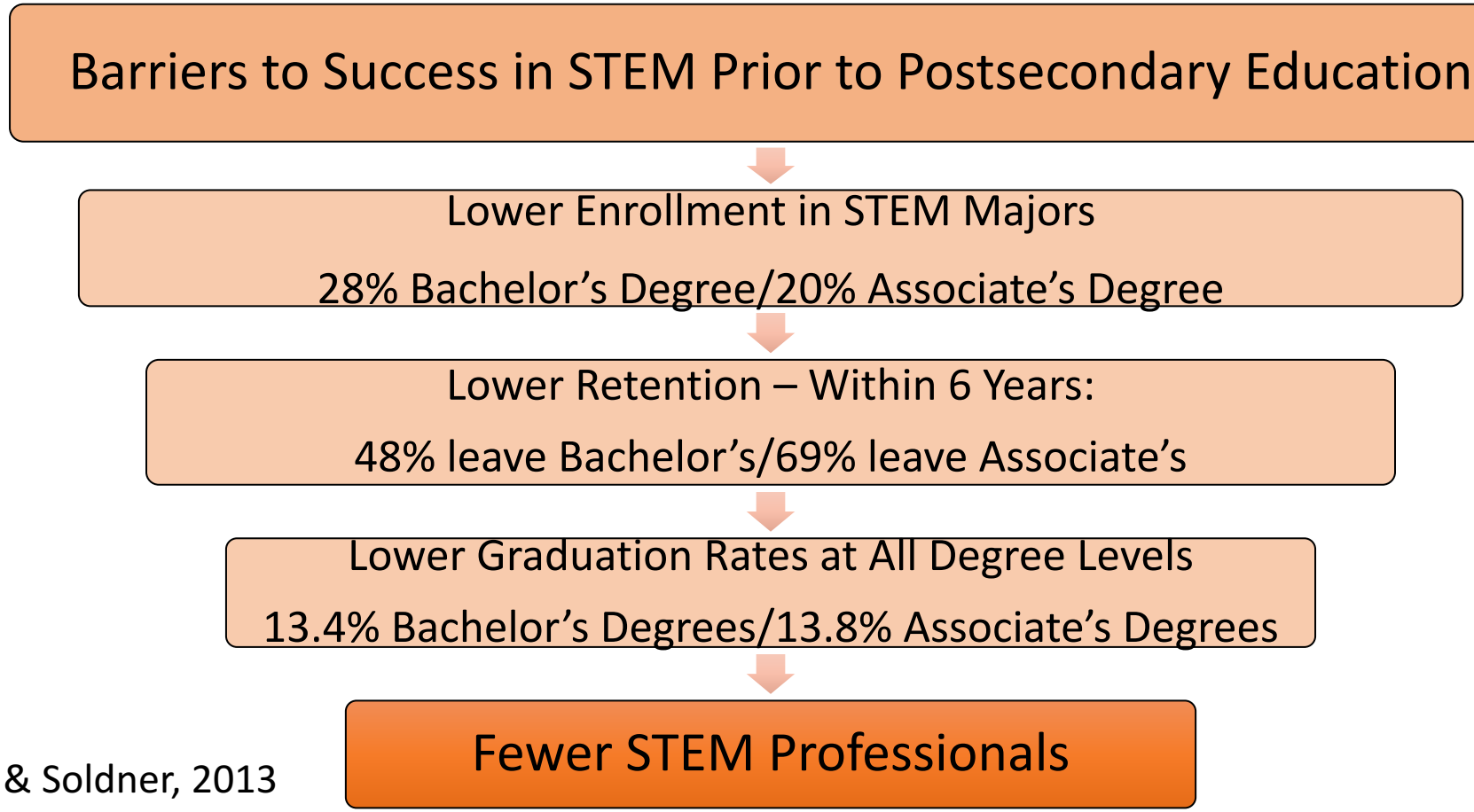
Who We Are

- Deaf STEM Community Alliance
  - Only Alliance specifically for D/HH students
- Supported by the National Science Foundation, HRD #1127955
- Ongoing project (started Sept 2011)
  - Now in our 7th year

Campus Partners

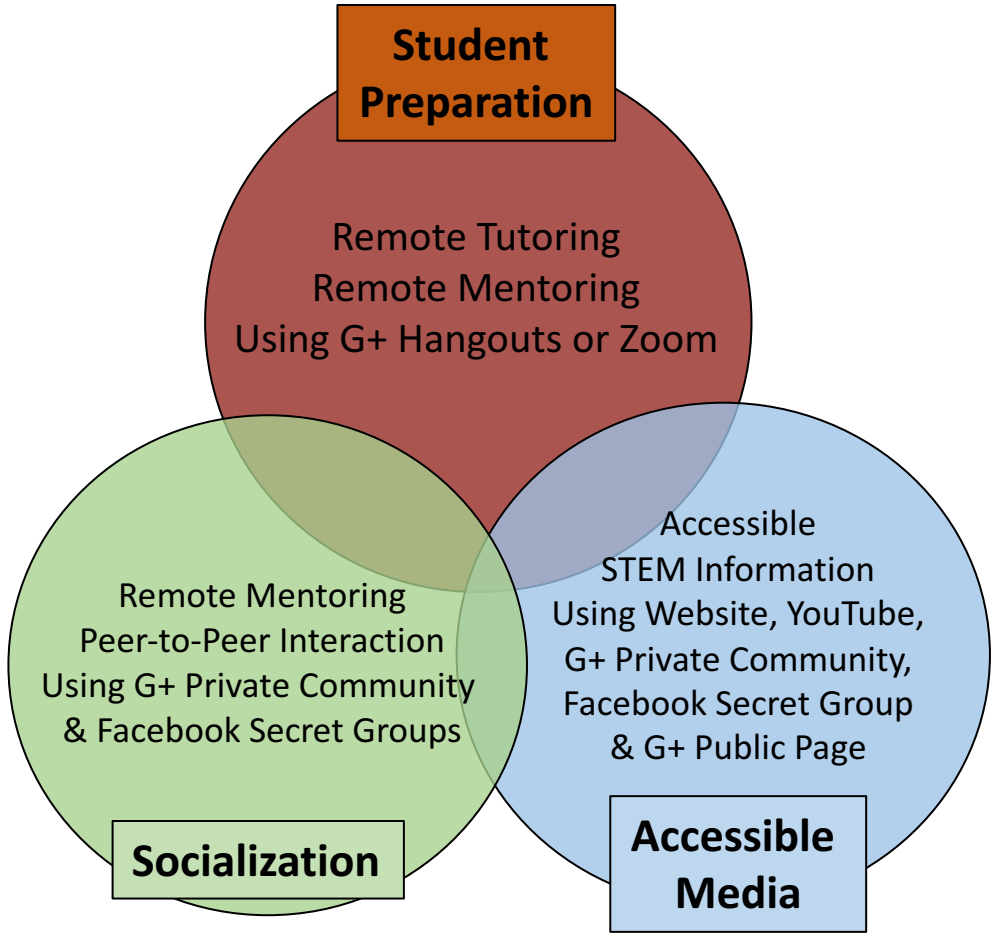
RIT is the lead institution for this project, with Camden County College and Cornell University as partners.

The Narrow STEM Pipeline



Chen & Soldner, 2013

DHHVAC Model
Barriers & Strategies



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

  - Iterative and incremental (Cockburn, 2008)
    - Iterative – testing what works and revising what doesn't
    - Incremental – building model in stages instead of all at once

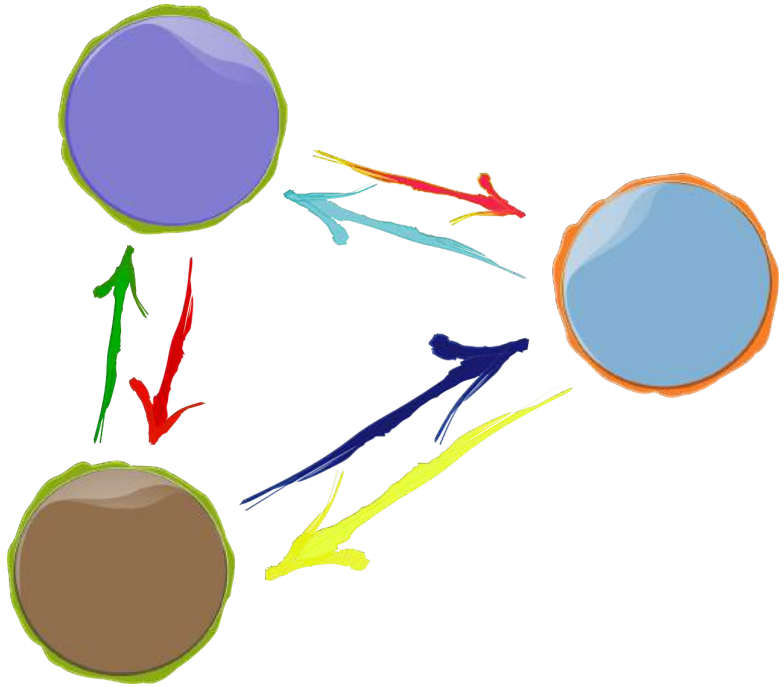
- Objectives

  1) Document and disseminate a description of the process of creating a model VAC for replication

  2) Increase the GPAs and retention rates of D/HH students in STEM majors

Importance of Social Networks

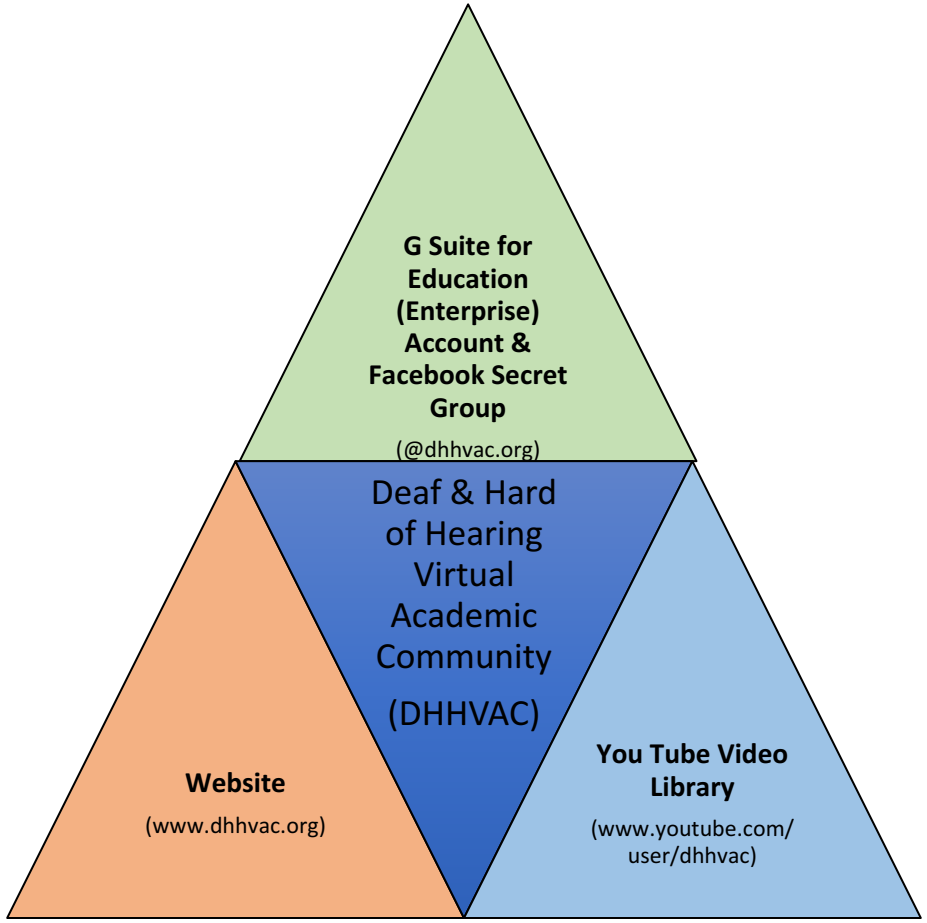
- Opinion & behavior more similar within groups (Burt, 2004)
- Regulators of behavior (Easly & Kleinberg, 2010)



Importance of Social Networks

- Resource for social capital (Burt, 2004)
- Resource for innovation (Burt, 2004)

Model Infrastructure



Online Tutoring

- FAQs:
  - More than 160 sessions with ~35 different students
  - Avg. 60 minute sessions
  - Google Hangouts or Zoom

- Benefits:
  - Better accommodation of student schedules
  - Easy to share documents
  - Good for observing student homework, watching for mistakes, providing faster feedback
  - Good for classes with heavy online component

- Challenges:
  - Scheduling appointments
  - Strong Internet connection
  - Technology (e.g., camera, tablet, etc.)

(Mostly) Online Mentoring

- FAQs:
  - 18 DHH STEM professionals
  - One-to-one (email, video or FaceTime)
  - One-to-many (social media, YouTube videos)
- Benefits:
  - Support
  - Career development (academic/vocational)
  - Personal development
  - Role modeling
  - Individual (intergenerational continuity, new colleagues, future collaborators)
  - Institution (alumni engagement, increased student success)

Social Media Platforms

2012

- FAQs:
  - G+, all members
  - FB, about 2/3
  - M-F postings (STEM, opportunities, member news)
- Benefits:
  - Mitigates social isolation
  - Intergenerational community (social capital)
  - Awareness of STEM information
  - Language modeling
- Challenges:
  - Documenting engagement

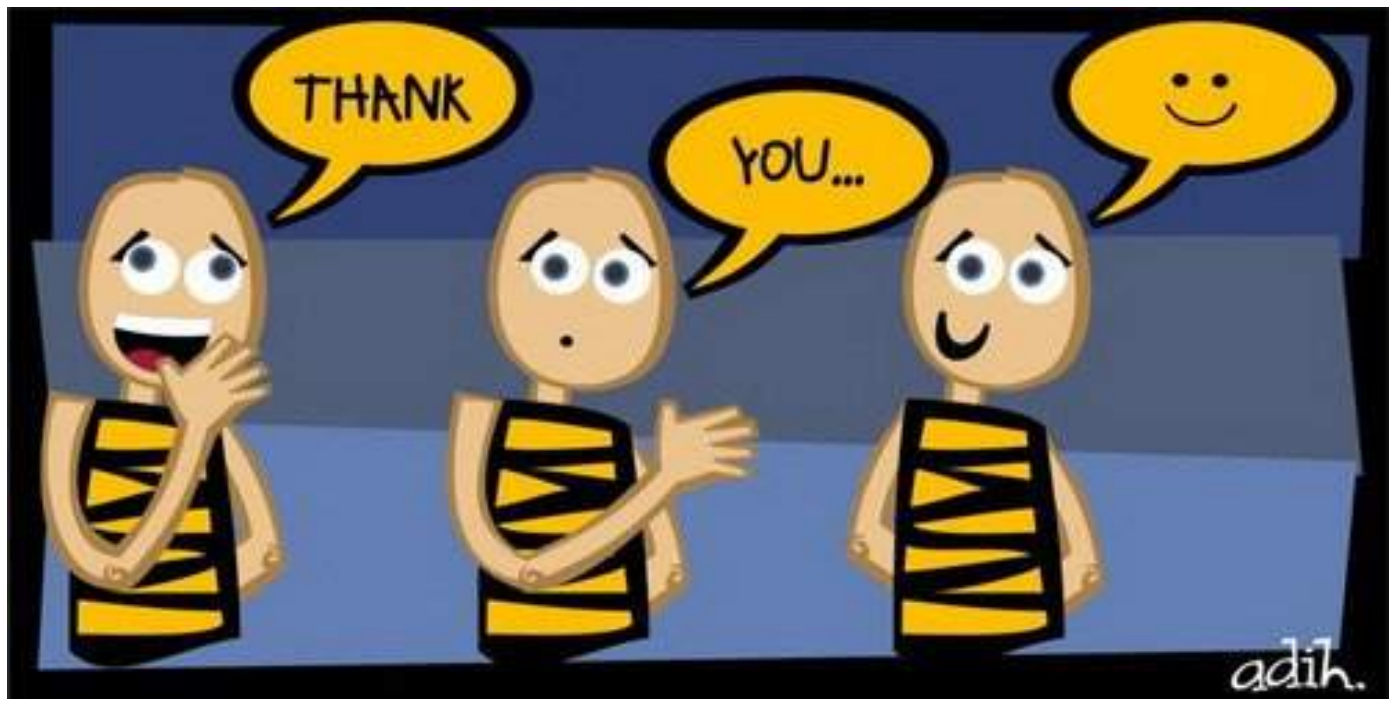
2015

Student Successes

- 61 students enrolled
- 25 graduated
- 7 left prior to graduation

Conclusions

- Underrepresented populations benefit from positive role models
- Students can benefit from either direct or indirect mentoring
- Intergenerational cooperation and support can further BOTH personal and institutional objectives
- The DHHVAC is a model that attempts to implement this solution


THANK
YOU...
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Contact Information

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