Landmark College: Serving Students with Learning Disabilities and Attention Deficit Disorders

Steve Fadden, Ph.D.
Director of Research
Landmark College

- Putney, Vermont
- Liberal arts institution
- Serve only students with learning disabilities/attention deficit disorders ("LD")
- Associate of Arts degrees
  - General Studies
  - Liberal Arts
  - Business Studies
  - Business Administration
Program Characteristics

- Faculty members understand LD
- Comprehensive approach to education
  - Universal design and strategic learning
  - Technology-enabled
  - Classroom instruction, one-on-one advising
  - Systems extend beyond classroom
  - Promote self-understanding, self-advocacy, and lifelong learning skills
Diagnostic Profiles

- Fall 2005 (N=167)
  - ADHD only
  - LD only
  - ADHD and LD

- Fall 2006 (N=161)
  - ADHD only
  - LD only
  - ADHD and LD

- Fall 2007 (N=174)
  - ADHD only
  - LD only
  - ADHD and LD
Student Population

• About equal distributions of ADHD-only, LD-only, and combined ADHD/LD

• Mostly male (typically 70%-75%)
  – 30% female in 2007

• About half (58%) arrive from high-school, while the remainder transfer from colleges
Ethnicity of 2007 Student Body
(N=479)

- Caucasian/ White (64%)
- African American/ Black (4%)
- Asian American (2.1%)
- Biracial/ Multiracial (2.3%)
- Native American (0.6%)
- Latino/ Hispanic Origin (3.5%)
- Unknown/ Other (19%)
- International (3.5%)
Success After Landmark

• National Student Clearinghouse
  – StudentTracker
  – DegreeVerify

• Data are incomplete
  – Not all colleges participate (52% of colleges to which Landmark students transfer)
  – Colleges may not submit complete information
  – Students can block information
Success After Landmark (1997-2004)

• Graduate data
  – 464 students total
  – 76% transferred to 195 colleges and universities
    • 91% of our graduates transferred to 4-year institutions
    • 9% of our graduates transferred to 2-year institutions

• Non-returner data
  – 1,363 students total
  – 66% transferred to 523 colleges and universities
    • 58% transferred to 4-year institutions
    • 42% transferred to 2-year institutions
Initiatives to Support Students with LD in STEM

• NSF RDE project: *Universal Design in College Algebra: Customizing Learning Resources for Two Year Students with LD*
  – 18-month project to evaluate, redesign, and assess effectiveness of algebra resources in two-year colleges

• NSF BPC subaward: *STARS Alliance*
  – Lead by University of North Carolina, Charlotte
  – 3-year initiative to implement, disseminate, and institutionalize effective practices for recruiting, bridging, and graduating students from underrepresented groups in computing
Initiatives to Support Students with LD in STEM

• Eastern Alliance in STEM (EAST) seed grants
  – NSF HRD-funded alliance
  – Develop lab to evaluate accessibility and usability issues faced by students with LD

• Department of Education project: A Needs-Based Best Practices Professional Development Program for Teaching Students with LD in the Community College Setting
  – Demonstration Project to Ensure Students With Disabilities Receive a Quality Higher Education
  – 3-year project to develop and deliver online professional development to community college personnel to support students with LD
STEM Participation at Landmark

• Students must complete first-year mathematics and science courses
• Math course enrollment (average per semester)
  – 13% developmental
  – 22% first-year
  – 2% second-year
• Science course enrollment (average per semester)
  – 1% developmental
  – 13% first-year
  – 3% second-year
STEM Degrees for Graduates
(N=145)

Non-STEM degrees

Masters-STEM

Bachelors-STEM

Associates-STEM

Landmark Graduates
STEM Degrees for Non-Returners
(N=464)
Students with Disabilities in STEM

• “Students with disabilities are less likely than their peers without disabilities to complete a full secondary school academic curriculum, especially in math and science curriculum areas.”
  – National Council of Disability’s 2003 position paper People with Disabilities and Postsecondary Education

• Students with LD represent largest group of students with disabilities
  – 41% report LD (compared to 21.8% Other, 19.3% Health-related, 13.3% Visual, 11.6% Hearing)
    • American Association for the Advancement of Science’s 2002 publication, New career paths for students with disabilities: Opportunities in science, technology, engineering, and mathematics
Students with LD in STEM

• Additional information about college students with LD
  – 46%-61% of postsecondary students with disabilities have LD
  – With 40% of freshman citing LD, “learning disability was the fastest growing category of reported disability among students” (p.5)
  – Freshman with disabilities are more likely to enroll in 2-year colleges
Recommendations to Promote STEM Success

1. Invest in programs focused on students with LD in STEM
   • Stimulate research on STEM education for students with LD
   • Identify and validate effective practices
   • Demonstrate approaches to engage and retain students with LD
   • Validate effectiveness of universally designed resources and approaches
Recommendations to Promote STEM Success

2. Identify and validate barriers and effects
   • Systematically identify barriers
   • Address and remove barriers
   • Validate effectiveness of common accommodations
   • Address issues of co-occurring conditions (mood disorders, anxiety disorders, chronic health conditions)
Recommendations to Promote STEM Success

3. Encourage partnerships along education-to-career continuum
   • Track outcomes for students with LD
   • Identify events and resources that promote STEM pursuit
   • Develop comprehensive, longitudinal, multidimensional dataset
   • Bridge gaps between STEM personnel and LD specialists
   • Role of 2-year colleges
Recommendations to Promote STEM Success

4. Address challenges for students who are undiagnosed, unaware, reluctant
   • Promote access to assessment resources
   • Improve awareness of LD in students, faculty, and STEM community
   • Remove stigma associated with LD
Recommendations to Promote STEM Success

5. Disseminate STEM success stories
   • Promote successful STEM professionals with LD
   • Identify pathways to STEM success
   • Publicize STEM resources and options for students with LD