

9-2021

## **Barriers to Retaining and Graduating STEM Students with Disabilities: A Systematic Review**

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### **Recommended Citation**

Saragossi, Jamie and Scheinfeld, Laurel, "Barriers to Retaining and Graduating STEM Students with Disabilities: A Systematic Review" (2021). *University Libraries Research Data*. 3.  
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| Database  | Strategy  |
|---|---|
| <p>Medline (OVID)<br/>116 results</p>           | <p>Developmental Disabilities/ or Intellectual Disability/ or exp Learning Disabilities/ or exp Disabled Persons/ or Architectural Accessibility/ or Education of Visually Disabled/ or exp Neurodevelopmental Disorders/ or disabilit\$.mp. or disable\$.mp. or deaf.mp. or asperger\$.mp. or autis\$.mp. or (neurodevelopment\$ adj1 disorder\$).mp. or (hard adj2 hearing).mp. or (sensory adj1 disorder\$).mp. or (psych\$ adj1 disorder\$).mp. AND Natural Science Disciplines/ed or Technology/ed or Engineering/ed or ((stem or science\$ or technolog\$ or engineer\$ or math\$) adj5 (education or student\$)).mp. AND Universities/ or postsecondary.mp. or universit\$.mp. or colleg\$.mp. or graduate education.mp. or graduate program.mp. or undergraduate.mp. or bachelors.mp. or masters.mp. or graduates.mp. or (post adj1 secondary).mp.</p>  |
| <p>EMBASE<br/>352 results</p>                   | <p>'disabled person'/exp OR 'disabled person' OR 'disability'/exp OR 'disability' OR 'hearing impairment'/exp OR 'hearing impairment' OR 'hearing impaired person'/exp OR 'hearing impaired person' OR 'visual disorder'/exp OR 'visual disorder' OR 'visually impaired person'/exp OR 'visually impaired person' OR 'developmental disorder'/exp OR 'developmental disorder' OR 'autism'/exp OR 'autism' OR 'learning disorder'/exp OR 'learning disorder' OR disabil*:ab,kw,ti OR disable*:ab,kw,ti OR deaf:ab,kw,ti OR asperger*:ab,kw,ti OR autis*:ab,kw,ti OR (((neurodevelopmental OR sensory OR psych*) NEXT/1 disorder):ab,kw,ti) OR 'hard of hearing':ab,kw,ti AND 'university'/de OR 'college'/de OR 'undergraduate student'/de OR 'graduate student'/de OR 'doctoral education'/de OR 'postdoctoral education'/de OR 'postgraduate education'/de OR postsecondary:ab,kw,ti OR universit*:ab,kw,ti OR colleg*:ab,kw,ti OR undergraduate*:ab,kw,ti OR bachelors:ab,kw,ti OR masters:ab,kw,ti OR graduates:ab,kw,ti OR 'post secondary':ab,kw,ti OR ((graduate NEXT/1 (program* OR education)):ab,kw,ti) AND ('natural science'/exp OR 'engineering'/exp OR 'technology'/de) AND 'education'/de OR (((stem OR science* OR engineer* OR math*) NEAR/5 (education OR student*)):ab,ti,kw)</p> |
| <p>Academic Search Complete<br/>275 results</p> | <p>DE "PEOPLE with disabilities"OR DE "DISABILITIES" OR DE "DISABILITY studies" OR DE "ACCESSIBLE design" OR DE "STUDENTS with disabilities" OR DE "DEVELOPMENTAL disabilities" OR DE "SERVICES for students with disabilities" OR DE "DEAFBLIND people" OR DE "DEVELOPMENTALLY disabled" OR DE "PEOPLE with mental disabilities" OR DE "PEOPLE with visual disabilities" OR DE "EXPRESSIVE language disorder" OR DE "HEARING disorders" OR DE "LANGUAGE disorders" OR DE "SPEECH disorders" OR DE "VISION disorders" OR DE "LEARNING disabilities" OR DE "MOVEMENT disorders") OR TI(disabilit* OR disable* OR accessibility OR accommodation* OR deaf OR</p>  |

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|                                       | <p>asperger* OR autis* OR neurodevelopment* N1 disorder* OR hard N2 hearing OR sensory N1 disorder* OR psych* N1 disorder*) OR AB (disabilit* OR disable* OR accessibility OR accommodation* OR deaf OR asperger* OR autis* OR neurodevelopment* N1 disorder* OR hard N2 hearing OR sensory N1 disorder* OR psych* N1 disorder*) AND DE "STEM education" OR DE "ENGINEERING education" OR DE "MATHEMATICS education" OR DE "SCIENCE education" OR DE "TECHNOLOGY education" OR DE "PHYSICAL sciences education" OR DE "SCIENCE education (Higher)" OR DE "BIOLOGY education in universities &amp; colleges" OR DE "CHEMISTRY education in universities &amp; colleges" OR DE "SCIENCE education (Graduate)" OR DE "SPACE sciences education in universities &amp; colleges" OR (TI ( STEM OR science* OR technolog* OR engineer* OR math* ) OR AB ( STEM OR science* OR technolog* OR engineer* OR math* )) N5 education AND DE "POSTSECONDARY education" OR DE "UNIVERSITIES &amp; colleges" OR DE "COLLEGE students" OR DE "COLLEGE teachers" OR (DE "UNDERGRADUATE programs" OR DE "HIGHER education" OR DE "BACHELOR'S degree" OR DE "DOCTORAL programs") AND (DE "GRADUATE education" OR DE "POSTDOCTORAL programs") OR TI (postsecondary OR universit* OR colleg* OR graduate education OR graduate program OR undergraduate OR bachelors OR masters OR graduates OR post N1 secondary) OR AB (postsecondary OR universit* OR colleg* OR graduate education OR graduate program OR undergraduate OR bachelors OR masters OR graduates OR post N1 secondary)</p> |
| <p>Web of Science<br/>372 results</p> | <p>TS=((Developmental Disabil* OR Intellectual Disabil* OR Learning Disabil* OR Disabled Person* OR "Architectural Accessibility" OR "Visually disabled" OR Neurodevelopmental Disorder* OR disabilit* OR disable* OR accessibility OR Accommodation OR deaf OR asperger* OR autis*)) AND S=(Natural Science NEAR/3 Education OR Technology NEAR/3 Education OR Engineering NEAR/3 Education OR STEM NEAR/3 Education OR science NEAR/3 Education OR technolog* NEAR/3 Education OR engineer* NEAR/3 Education OR math* NEAR/3 Education) NOT TS=(stem cell*) AND TS=(Universit* OR postsecondary OR colleg* OR "graduate education" OR "graduate program" OR undergraduate OR bachelors OR masters OR graduates)</p>   |
| <p>ERIC<br/>849 results</p>           | <p>DE "Disabilities" OR DE "Adventitious Impairments" OR DE "Attention Deficit Disorders" OR DE "Behavior Disorders" OR DE "Communication Disorders" OR DE "Congenital Impairments" OR DE "Developmental Disabilities" OR DE "Diseases" OR DE "Hearing Impairments" OR DE "Injuries" OR DE "Intellectual Disability" OR DE "Language Impairments" OR DE "Learning Disabilities" OR DE "Mental Disorders" OR DE "Mild Disabilities" OR DE "Multiple Disabilities" OR DE "Perceptual Impairments" OR DE "Physical Disabilities" OR DE "Severe Disabilities" OR DE "Special Health Problems" OR DE</p>   |

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|---|--|
|   | <p>"Speech Impairments" OR DE "Visual Impairments" OR (DE "Accessibility (for Disabled)" OR DE "Academic Accommodations (Disabilities)" OR DE "Assistive Technology" OR TI(disabilit* OR disable* OR accessibility OR accommodation* OR deaf OR asperger* OR autis* OR neurodevelopment* N1 disorder* OR hard N2 hearing OR sensory N1 disorder* OR psych* N1 disorder*) OR AB (disabilit* OR disable* OR deaf OR asperger* OR autis* OR neurodevelopment* N1 disorder* OR hard N2 hearing OR sensory N1 disorder* OR psych* N1 disorder*) AND DE "STEM Education" OR DE "Engineering Education" OR DE "Mathematics Education" OR DE "Science Education" OR DE "Technology Education" OR DE "Science Education" OR DE "College Science" OR DE "Science Course Improvement Projects" OR DE "Science Instruction" OR (TI ( STEM OR science* OR technolog* OR engineer* OR math* ) OR AB ( STEM OR science* OR technolog* OR engineer* OR math* )) N5 education AND DE "Postsecondary Education" OR DE "Universities" OR DE "College Faculty" OR DE "College Students" OR DE "Graduate Study" OR DE "Higher Education" OR DE "Undergraduate Study" OR DE "Upper Division Colleges" OR DE "Bachelors Degrees" OR DE "College Graduates" OR DE "Doctoral Degrees" OR DE "Masters Degrees" OR TI (postsecondary OR universit* OR colleg* OR graduate education OR graduate program OR undergraduate OR bachelors OR masters OR graduates OR post N1 secondary) OR AB (postsecondary OR universit* OR colleg* OR graduate education OR graduate program OR undergraduate OR bachelors OR masters OR graduates OR post N1 secondary)</p> |
| <p>IEEE<br/>104 results</p>               | <p>("All Metadata":disab* OR "All Metadata":deaf OR "All Metadata":asperger* OR "All Metadata":autis* OR "All Metadata":neurodevelopmental disorder" OR "All Metadata":hard of hearing" OR "All Metadata":sensory disorder" OR "All Metadata":psychological disorder") AND ("All Metadata":STEM education OR "All Metadata":science education OR "All Metadata":technology education OR "All Metadata":engineering education OR "All Metadata":math education) AND ("All Metadata":Universit* OR "All Metadata":postsecondary OR "All Metadata":colleg* OR "All Metadata":graduate education" OR "All Metadata":graduate program" OR "All Metadata":undergraduate OR "All Metadata":bachelors OR "All Metadata":masters OR "All Metadata":graduates</p>  |
| <p>Engineering Village<br/>92 results</p> | <p>(((((disab* OR deaf OR asperger* OR autis* OR neurodevelopmental disorder" OR "hard of hearing" OR "sensory disorder" OR "psychological disorder")) WN KY) AND ((STEM education OR science education OR technology education OR engineering education OR math education) WN KY)) AND ((Universit* OR postsecondary OR colleg* OR "graduate education" OR "graduate program" OR undergraduate OR bachelors OR masters OR graduates) WN KY))) AND ((2021</p>  |

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|                    | OR 2020 OR 2019 OR 2018 OR 2017 OR 2016 OR 2015 OR 2014 OR 2013 OR 2012 OR 2011 OR 2010 OR 2009 OR 2008 OR 2007 OR 2006 OR 2005 OR 2004 OR 2003 OR 2002 OR 2001 OR 2000) WN YR)) AND (({ja} WN DT)))<br>subject/title/abstract  |
| ACM<br>279 results | [[Abstract: disab*] OR [Abstract: deaf] OR [Abstract: asperger*] OR [Abstract: autis*] OR [Abstract: "neurodevelopmental disorder"] OR [Abstract: "hard of hearing"] OR [Abstract: "sensory disorder"] OR [Abstract: "psychological disorder"]]] AND [[All: stem education] OR [All: science education] OR [All: technology education] OR [All: engineering education] OR [All: math education]]] AND [[All: universit*] OR [All: postsecondary] OR [All: colleg*] OR [All: "graduate education"] OR [All: "graduate program"] OR [All: undergraduate] OR [All: bachelors] OR [All: masters] OR [All: graduates]]] AND [Publication Date: (01/01/2000 TO 12/31/2021)] + Journals filter |

*\*all searches run on 3/23/21, all results limited by publication date 01/01/2000-03/23/2021*