

Curriculum Vitae Stephen John Hegedus

1. BACKGROUND & EMPLOYMENT

1.1 Academic Qualifications

Diploma in Management and Leadership, Harvard University, Graduate School of Education. 2017.

PhD in Mathematics Education. 1998

A Study of the Metacognitive Behaviour of Mathematics Undergraduates in Solving Problems in the Integral Calculus. University of Southampton, UK

B.Sc. (Hons) Mathematics and Economics. 1994

University of Southampton, UK

1.2 Employment History

July 2014 – Present, **Dean**, School of Education, Southern Connecticut State University.

ACE Fellow AY18-19.

December 2006 – June 2014, **University Center Director**, Kaput Center for Research and Innovation in STEM Education, University of Massachusetts, USA (reporting to the Provost).

June 2010 – June 2013, **Chair**, Department of Science, Technology, Engineering and Mathematics (STEM) Education, University of Massachusetts, USA.

September 2008 – June 2014, **Full Professor of Mathematics & Mathematics Education** (with tenure), Department of Science, Technology, Engineering and Mathematics (STEM) formally awarded tenure and rank of Full Professor in the Department of Mathematics, University of Massachusetts Dartmouth, USA.

July 2004 – August 2008, **Associate Professor of Mathematics** (with tenure), Department of Mathematics, University of Massachusetts Dartmouth, USA.

September 2000 – July 2004, **Assistant Professor of Mathematics**, Department of Mathematics, University of Massachusetts Dartmouth, USA.

September 1998 – July 2000, **Research Fellow**
Faculty of Educational Studies, University of Oxford, UK.

January 1998 – July 2000, **Lecturer**
Mathematical Institute, University of Oxford, UK

November 1999 – September 2000, **Educational Consultant**
Department for Education and Employment (DfEE), UK Government

September 1996 – July 1998, **Lecturer**
Faculties of Mathematical Studies and Engineering; Research & Graduate School of Education,
Faculty of Education, University of Southampton, UK

2. ADMINISTRATIVE/LEADERSHIP DUTIES AND ACCOMPLISHMENTS

2.1 Dean of Education, Southern Connecticut State University

Accreditation/Curriculum related:

- Led the revision of all programs in the Education Unit to obtain full Accreditation approval status by the CT Board of Education, Spring 2016
- Successfully hired 25 new faculty positions
- Member of Governor's EPAC committee on assessment. Led to the adoption of edTPA (a student teaching performance assessment) by CT Board of Education in January 2017. Designed and implemented full scale up of the assessment at SCSU in Spring 2017 (a. 280 student teachers).
- Invited Member of the CT Commissioner of Education's Taskforce on Mastery Based Examination (Board of Regent's President designee)

Communication/Legislative:

- Established MOUs with six school districts in CT to sustain cohorts in Educational Leadership and Reading programs to meet local needs. Established policy and procedures for cohort management with school districts
- Led SCSU students to American Association of Colleges of Teacher Education (AACTE) *On-the-Hill Institute* & meetings with all CT Congress representatives & Senators, June 2015-18
- Architect and lead of CT chapter of AACTE *On-the-Hill Institute* with CT Legislators. Spring 2017
- Co-Chair of CT Associate of Public School Superintendents (CAPSS)—AACTE Board to foster relationships and partnerships between K-12 school districts and Higher Education Institutions in CT
- Established *Student Leadership Group* (through faculty nomination) which assisted in open house events, recruitment events, legislative advocacy and organized colloquia to firm up relationships with local community and large education student body

Innovation:

- Led and Implemented a School-wide Strategic Plan 2015-2020 through a coordinated effort of 25 faculty/staff/students/internal and external associates
- Secured \$2.2m Shea bequest into a scholarship fund for education students – established a taskforce to plan implementation and recruitment of minority students
- \$3m ask to Diana Spencer Foundation to address the needs of the growing population of adults with autism spectrum disorders and/or intellectual disabilities
- Managed and maintained GEARUP project to provide college readiness for 335 NHPS students
- Secured NHPS Lab School proposal with New Haven Alders and led the building project on SCSU campus, completed June 2018
- Established and awarded first Endowed Chair for Special Education at SCSU

2.2 Institutional Agreements

- Established MOU agreements between the University of Cyprus, Tec de Monterrey, Mexico, Cinvestav, Mexico, UNIBAN, Brazil, Queensland University of Technology, Australia and various institutions in Puerto Rico (University of Puerto Rico, Universidad Interamericana de Puerto Rico, & Polytechnic University) to collaborate on future R&D projects, faculty and graduate student exchanges. 2009-2017

3. TEACHING & ADVISING ACCOMPLISHMENTS

3.1 Courses Taught

University of Massachusetts Dartmouth, 2000-2014

I have taught undergraduate and graduate courses (100-700 level) for majors in mathematics, mathematics education, computer science, engineering, pre-service and in-service education including advising 8 Masters dissertations & 4 doctoral theses:

University of Oxford, UK. September 1998 – July 2000

- Topics in Mathematics Education, Abstract Algebra

University of Southampton, September 1994 – July 1998

- *Undergraduate Mathematics & Graduate Mathematics Education*

3.2 Graduate Student Advising

In addition to advising 8 Masters Theses:

Completed Doctoral Students

- Margie Dunn. Co-supervising with Dr Roberta Schorr, Rutgers University
- Corey Brady. *Perspectives in Motion*. University of Massachusetts Dartmouth
- Claudia Carvalho. The Design Of A Digital Environment And Its Contribution To The Creation Of Conjectures And Proofs In The Basic Education. Co-Supervised with Dr. Lulu Healy, University of Massachusetts Dartmouth/UNIBAN Brazil.
- Sara Dalton. *Small Group to Whole Class Sharing of Ideas and Strategies: Mediating These Transitions In a Technology Rich Classroom Supporting Collaboration With Connectivity*. University of Massachusetts Dartmouth

In progress:

- Gili Nagar. *Conceptualization of and Reasoning about Mathematical Structures, In Terms of Variance and Invariance, In a Dynamic Geometry Environment*. Doctoral Defense: September 2018

4. SCHOLARLY WORK

4.1 Research Funding

I was the Principal Investigator and proposer of all projects acquiring approximately \$20m of grants since 2000, predominantly obtaining funding from the NSF, US ED, local state agencies, private foundations and industry (e.g. Texas Instruments). Some notable achievements include:

Democratizing Access to Core Mathematics Across Grades 9-12, \$2,215,543. US Department of Education, IES Goal 2 (Development), Type A, #R305B070430. July 1, 2007 – June 30, 2012.

University of Massachusetts Dartmouth Noyce Scholars Program, National Science Foundation, Robert Noyce Teacher Scholarship Program 0833266, \$749,596. October 2008 – June 2014.

Dynamic Haptic Geometry in Elementary and Undergraduate Classrooms, National Science Foundation, REESE, REC-0835395, \$750,000. July 1, 2009 – Sept 30, 2013.

Co-PI: *Working with Teachers and Leveraging Technology to Scale Opportunities to Learn More Complex and Conceptually Difficult Middle School Mathematics (Scaling Up SimCalc, Phase II)*, \$6,463,414, NSF REC-0437861, September 1, 2004 – December 2010

4.2 Refereed Scholarly Work

I have published almost 100 peer-reviewed articles (other publications including conference proceedings not included). I offer a sample of my work from the past 5 years to demonstrate impact and breadth of my scholarship. I can also be found on Research Gate:

1. Moreno-Armella L., Hegedus S. (2018) Learning Practices in Digital Environments. In: Lerman S. (eds) *Encyclopedia of Mathematics Education*. Springer, Cham
2. Hegedus, S. & Moreno-Armella, L. (2018). Information and Communication Technology (ICT) Affordances in Mathematics Education. In S. Lerman (Ed.) (2018). *Encyclopedia of Mathematics Education*. SpringerReference (www.springerreference.com). Updated
3. Hegedus, S. & Nabbout-Cheiban, M. (2018). STEM Education and Autism Spectrum Disorder. In F. R. Volkmar (ed.), *Encyclopedia of Autism Spectrum Disorders*, https://doi.org/10.1007/978-1-4614-6435-8_102248-1
4. Hegedus, S. et al (2016). *Uses of Technology in Upper Secondary Mathematics Education*. ICME-13 Topical Surveys. Springer.
5. Hegedus, S. & Tall, D. O. (2016). Foundations for the Future: The Potential of Multimodal Technologies for Learning Mathematics. The *Third edition of the Handbook of International Research in Mathematics Education*, L. English & D. Kirshner (Eds.). Taylor & Francis
6. Hegedus, S. & Otalora-Sevilla, Y. (2015). *Socially Mediated Mathematical Strategies in a Dynamic Multi-Touch Geometry Environment*. Proceedings of the Northeastern Educational Research Association Annual Conference
7. Hegedus, S., Tapper, J., & Dalton, S. (2015) Exploring how Teacher-Related Factors Relate to Student Learning in Learning Advanced Algebra in Technology-Enhanced settings. *Journal for Mathematics Teacher Education*. Springer {published on-line first}
8. Hegedus, S., Dalton, S. & Tapper, J. (2015). The Impact of Technology-Enhanced Curriculum on Learning Advanced Algebra in American High School Classrooms. *Educational Technology Research & Development*. 63 (2) pp 203-228. Springer
9. Hegedus, S., Dalton, S., Penuel, W., Roschelle, J., Tatar, D. & Kurdziolek, M. (2014). Investigating Why Teachers Reported Continued Use and Sharing of an Educational Innovation After the Research Has Ended, *Mathematical Thinking and Learning, International Journal for Mathematical Thinking and Learning*, 16(4), 312-333, DOI: 10.1080/10986065.2014.953017. Taylor and Francis.
10. Hegedus, S., Tapper, J., Dalton, S. & Sloane, F. (2013). HLM in cluster randomized trials—a thorough treatment of measuring efficacy across diverse populations of learners. *Research in Mathematics Education*, Vol. 15 (2). Taylor & Francis.

11. Hegedus, S. (2013). Seeing little children do new mathematical problem-solving with new technologies: Future perspectives. In L. Moreno-Armella & M. Santos (Eds.) (2013). *Special Issue: International Perspectives on Problem Solving Research in Mathematics Education. The Montana Mathematics Enthusiast*, Vol. 10 (1&2)
12. Hegedus, S. & Roschelle, J. (2013). (Eds). *Democratizing Access to Important Mathematics through Dynamic Representations: Contributions and Visions from the SimCalc Research Program*. Berlin: Springer.
13. Hegedus, S.J. & Roschelle, J. (2012). Highly Adaptive, Interactive Instruction: Insights for the Networked Classroom. In C. Dede & J. Richards (Eds.), *Digital teaching platforms* (pp. 103-115). New York: Teachers College Press.

4.4 Invited Talks/Leadership at Conferences & Workshops

I have given over 130 lectures/invite plenary talks in over 20 countries since 1996. These include national and international conferences, pedagogical institutes, National Ministries of education and public centers. I offer a selection from the past 5 years:

1. Plenary Lecture, STEM Education and Educational Leadership in Schools. STEM Education Leadership Conference, Southern Connecticut State University, June 2017
2. Plenary Lecture, *The Potential of Multimodal Technologies for Learning Mathematics. International Conference for Technology and its Integration in Mathematics Education (TIME)*, Universidad Nacional Autónoma de México, Mexico, July 2016
3. Co-Chair and Keynote Presenter at *Technology in Secondary Education Topic Group* at ICME-13, Germany, July 2016. (with C. Laborde)
4. Invited Plenary Panel Talk at Yale University. *STEM Education and the future?* October 2014
5. *Multimodal Technology Working Group*. PME-38, Vancouver, CA. July 2014 (with Y. Otalora-Sevilla, N. Sinclair, & L. Healy)
6. Estimation Strategies of Young Children using Multitouch Technology. Research Report presentation at PME-38, Vancouver, CA. July 2014 (with Y. Otalora-Sevilla)
7. *Investigating how young children make sense of mathematical objects in a Multimodal Environment: A Phenomenological Approach*. Invited presentation at the 37th annual meeting of the International Conference of the Psychology of Mathematics Education. Kiel, Germany. July 2013.
8. *Creativity in Schools: Mathematics, Identity and Motivation*. Invited Plenary Lecture. University of Hartford STEM Conference, Connecticut Science Center. September 24th 2012
9. *Enabling Expressive Mathematical Discourse in Technology-Enhanced Classrooms*. NEERO, Sheraton Portsmouth - Thaxter Room, Portsmouth, New Hampshire. Friday, May 4th 2012 (with B. Gucler, S. Dalton & R. Robidoux)

10. *Changing Mathematics Education with Technology Through Research in Schools*. Division H Invited Session presented at AERA 2012, Vancouver, British Columbia, Canada. April 2012. (with A. Strotter, J. Roschelle, B. Gucler, N. Shechtman, & P. Vahey)

4.5 International/National Service to the field

- Associate Editor of International Journal for Mathematical Thinking and Learning
- Reviewer for the NCTM Journal for Mathematics Teacher Education, Educational Studies in Mathematics, Journal for the Learning Sciences, Journal for Research in Mathematics Education, Journal for Mathematical Behavior, International Journal of Science and Mathematics Education
- Reviewer for the National Science Foundation and Primary Panel Reviewer for the US ED Institute of Educational Sciences
- Elected International Committee member and Secretary for the *International Group for the Psychology of Mathematics Education, 2011-2015*

4.6 Licensed/Commercialized Educational Software

Established Commercial Licenses: Published by University of Massachusetts (see <http://kaputcenter.umassd.edu>) and via Texas Instruments at <http://education.ti.com> under a license agreement with the University of Massachusetts