Daniel P. Kelly

Curriculum Vitae

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Durham, NC 27713

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Education:

Doctor of Education in Technology Education (Expected – December, 2017)
North Carolina State University
Minor: Digital Teaching and Learning
Cognate: Educational Psychology
Dissertation: *Measurements of self-efficacy in engineering graphics students: An examination of factors impacting student outcomes in introductory engineering graphics courses*

Master of Science in Technology Education (2015)
North Carolina State University
Thesis: *STEM Teacher Efficacy in Inverted Classrooms*

Matriculated - **Master of Science in Teaching** (2006-2007)
State University of New York at Potsdam
15 credit Hours in Secondary Science Education

Bachelor of Arts in Physics (2006)
State University of New York at Potsdam

Advanced Electronics Technical Core Program (1998)
Electronics Technician A-School (1999)
United States Navy

Certificate in Electricity/Electronics (1998)
Niagara/Orleans Board of Cooperative Education Services

Publications:

Refereed Journal Articles:

Kelly, D.P. & Rutherford, T. (Accepted). Khan Academy as supplemental instruction: A controlled study of a computer-based mathematics intervention. *Journal of Computer Assisted Learning.*

Sutton, K.G., Busby, J.R., **Kelly, D.P.** (2016). Multicopter design challenge: Design, fly, and learn. *Technology and Engineering Teacher*, *76*(2), 8-12.

Kelly, D.P. (2015). Overcoming barriers to classroom technology integration. *Educational Technology*, *55*(2), 40-43.

Ernst, J.V., Williams, T.O., **Kelly, D.P.,** & Clark, A.C. (in press). Factors of spatial visualization: An analysis of the PSVT:R. *Engineering Design Graphics Journal.*

Ernst, J. V., Williams, T. O., Clark, A.C., **Kelly, D. P.,** & Sutton, K. (in press). K-12 STEM educator autonomy: An investigation of school influence and classroom control. *Journal of STEM Education*.

Manuscripts under Review or Revision:

Kelly, D.P. (revision). What do we know about Khan Academy? A Review of the literature and justification for further study. *The Journal of Open and Distance Learning.*

Kelly, D.P. (revision). Preparing high school students for skilled trade careers: A case study of an automotive repair program.

Kelly, D.P. & Denson, C.D. (revision). STEM teacher efficacy in flipped classrooms: A case Study.

Denson, C.D., **Kelly, D.P.,** & Clark, A.C. (in review). Developing an instrument to measure student self-efficacy as it relates to 3D modeling. *Engineering Graphics Design Journal.*

Denson, C.D., Buelin, J., & **Kelly, D.P.** (in review). Investigating creative outcomes and their relationships with creative self-efficacy. *International Journal of Design Creativity and Innovation.*

Refereed Proceedings:

Kelly, D.P., Sutton, K.G., & Clark, A.C. (2016). A "new" visualization assessment for engineering graphics courses. Published proceedings of the *Engineering Design Graphics Division of the American Society of Engineering Education's 71st Midyear Conference*, Nashua, NH.

Clark, A.C., **Kelly, D.P.,** Fahrer, N.E., & Ernst, J.V. (2016). An examination of three assessment models of the PVST:R. Published proceedings of the *Engineering Design Graphics Division of the American Society of Engineering Education's 71st Midyear Conference*, Nashua, NH.

Kelly, D.P., Clark, A.C., Ernst, J.V., & Sutton, K.G. (2016). Flipped instruction in engineering graphics courses: Current landscape and preliminary study results of instructors' perceptions. Published proceedings of *the American Society of Engineering Education Annual Conference and Exposition*, New Orleans, LA, 10.18260/p.26920.

Ernst, J.V., Williams, T.O., Clark, A.C., & **Kelly, D.P.** (2016). Psychometric properties of the PSVT:R outcome measure: A preliminary study of introductory engineering design graphics. Published proceedings of the *Engineering Design Graphics Division of the American Society of Engineering Education's 70th Midyear Conference*, Daytona Beach, FL, Session 1, 10-15.

Kelly, D.P., Clark, A.C., & Ernst, J.V. (2016). A model for engineering and technology teacher education professional development. Published proceedings of the *2016 International Education Conference*, Venice, Italy, *286*, 1-4.

Books:

Kelly, D.P. (2014). Falling down: A teenager's true story of redemption. Durham, NC: Author.

Other Papers/Reports:

Kelly, D.P. (2014). *Tutoring in Higher Education: Effectiveness of Structured Programs.* Report prepared for North Carolina Central University: Centennial Scholars Program.

Presentations:

Invited Presentations:

Kelly, D.P. (March, 2016). Choosing appropriate technology for the 21st century classroom. North Carolina Science Teachers Association

College of Education Advisory Board Student Panel (November, 2016)

Turning Coursework into Publications (November, 2015)
Panel presentation at the NCSU College of Education

International Conferences:

Ernst, J.V., **Kelly, D.P., &** Clark, A.C. (June, 2016). A model for engineering and technology teacher education professional development. Paper presented at the 2016 International Education Conference, Venice, Italy.

National and Regional Conferences:

Kelly, D.P., Sutton, K.G., Clark, A.C., & Fahrer, N.E. (November, 2016). Spatial visualization and STEM educational attainment and persistence: Rationale and assessment. Southeastern Technology Education Annual Conference, Virginia Beach, Va.

Kelly, D.P., Sutton, K.G., & Clark, A.C. (October, 2016). A "new" visualization assessment for engineering graphics courses. Paper presentation at the American Society for Engineering Education (ASEE) Engineering Design Graphics Division (EDGD) 71st Midyear Conference, Nashua, NH.

Clark, A.C., **Kelly, D.P.,** Fahrer, N.E., & Ernst, J.V. (October, 2016). An examination of three assessment models of the PVST:R. Paper presentation at the American Society for Engineering Education (ASEE) Engineering Design Graphics Division (EDGD) 71st Midyear Conference, Nashua, NH.

Bowers. S., Ernst, J.V., **Kelly, D.P.,** & Clark, A.C. (July, 2016). Building teachers' STEM practices. 5th annual STEM Forum & Expo, Denver, CO.

Kelly, D.P., Clark, A.C., Ernst, J.V., & Sutton, K.G. (June, 2016). Flipped instruction in engineering graphics courses: Current landscape and preliminary study results of instructors' perceptions. Paper presented at the American Society for Engineering Education Annual Conference and Exposition, New Orleans, LA, Session W218.

Kelly, D.P. & Fahrer, N.E. (April, 2016). Flipping an undergraduate engineering graphics communication course: Research goals and design. Poster presentation at the STEM Education Research Symposium, North Carolina State University, Raleigh, NC.

Clark, A.C., Ernst, J.V., & **Kelly, D.P.** (March, 2016). Online professional development for technology/engineering education teachers. International Technology and Engineering Educators Association (ITEEA) Annual Conference, Washington, D.C.

Kelly, D.P. (March, 2016). Integrative STEM education: A catalyst for bringing STEM to life! – What is PBL and should we care? Panel presentation at the International Technology and Engineering Educators Association (ITEEA) Annual Conference, Washington, D.C.

Carter, C., Coates, T., Welker, M, & **Kelly, D.P.** (March, 2016). 3D printing is changing the way we think. – 3D printing: Beyond the "cool factor." Panel presentation at the International Technology and Engineering Educators Association (ITEEA) Annual Conference, Washington, D.C.

Ernst, J.V., Williams, T.O., Clark, A.C., & **Kelly, D.P.** (January, 2016). Psychometric properties of the PSVT:R outcome measure: A preliminary study of introductory engineering design graphics. Paper presentation at the American Society for Engineering Education (ASEE) Engineering

Design Graphics Division (EDGD) 70th Midyear Conference, Daytona Beach, FL.

Kelly, D.P. (December, 2015). The continuing role of vocational education in 21st century schools: A case study. Poster presentation at the Graduate Student Poster Session, North Carolina State University, Raleigh, NC

Kelly, D.P. (November, 2015). STEM teacher Efficacy in inverted classrooms. Mississippi Valley Technology Teachers Education Annual Conference/Southeastern Technology Education Annual Conference, Nashville, TN.

Kelly, D.P., Sutton, K.G., Clark, A.C., & Ernst, J.V. (November, 2015). Flipped instruction for technology and engineering educators. Mississippi Valley Technology Teachers Education Annual Conference/Southeastern Technology Education Annual Conference, Nashville, TN.

Kelly, D.P. (March, 2015). STEM teacher efficacy in flipped classrooms. Research Roundtable: Council on Technology and Engineering Teacher Education (CTETE), Milwaukee, WI.

Kelly, D.P. (March, 2015). Overcoming barriers to classroom technology integration. International Technology and Engineering Educators Association (ITEEA) Annual Conference, Milwaukee, WI.

Kelly, D.P. (March, 2015). STEM teacher efficacy in inverted classrooms. Poster presentation at the STEM Education Research Symposium, North Carolina State University, Raleigh, NC.

Kelly, D.P. (March, 2015). Overcoming barriers to classroom technology integration. International Technology and Engineering Educators Association (ITEEA) Annual Conference, Milwaukee, WI.

Kelly, D.P. (November, 2014). Overcoming barriers to classroom technology integration. Teaching and Learning with the iPad, Raleigh, NC.

Kelly, D.P. (October, 2014). Overcoming barriers to classroom technology integration. Luddy Education Conference, Wake Forest, NC.

Honors and Awards:

- Epsilon Pi Tau Robert & Marilyn Wenig Scholarship. (2016)
- Best Presentation Award: A Model for Engineering and Technology Teacher Education Professional Development, 2016 International Education Conference, Venice, Italy (2016)
- Foundation for Technology and Engineering Education (FTEE), International Technology and Engineering Educators Association (ITEEA) and Council on Technology & Engineering Teacher Education (CTETE) 21st Century Leadership Academy Fellow (Class of 2017)
- Foundation for Technology and Engineering Education/Donald Maley Outstanding Graduate Student Award (2016)
- William Everett Warner Graduate Student Research Award (2015)
- Teacher of the Month (February, 2013)
- STEM Educator of the Month (October 2012)
- Tri-Town Volunteer Rescue Squad Rookie of the Year (2005)
- United States Navy – Three Letters of Commendation (1998-1999)

Research:

Interests:

- Increasing participation of traditionally underrepresented populations in STEM education participation and attainment
- Self-efficacy, perceptions, and motivations of STEM education students
- Spatial visualization and reasoning skill development
- Testing and assessment in technology and engineering education

Current Research:

- Factors impacting academic outcomes in technology and engineering education
- The impact of spatial visualization and reasoning on STEM educational participation
- The use of technology-rich instructional models to increase self-efficacy, content knowledge acquisition, and skill development

Experience:

Graduate Research Assistant (2015-2016)
Science, Technology, Engineering, and Mathematics (STEM) Education
North Carolina State University
Project: Transforming Teaching through Implementing Inquiry (T2I2)

Research Assistant (2014-2015)
Technology, Engineering, and Design Education
North Carolina State University
Project: Creativity in Engineering Education

Research Assistant (2013)
Technology, Engineering, and Design Education
North Carolina State University
Project: Electronics Literacy

Undergraduate Research Assistant (2005)
Physics
State University of New York, College at Potsdam
Project: Ultraviolet Extinction in Boundary Layer Aerosols

Teaching:

Interests:

Impact of technology on society, research methods, integrative STEM, robotics, emerging technology, and classroom digital technology integration

Experience:

Instructor
North Carolina State University
Foundations of Graphics (2017)
Student Teaching Supervision (2017)
Foundations of Graphics (2016)
Research & Development in Technology Education (2016)

National Teacher Effectiveness Coach
Engineering by Design (2016-2017)
International Technology and Engineering Educators Association (ITEEA)

Instructional Support
North Carolina State University
Architectural Graphics Communications (2016)

Instructor
Technology Training Solutions
North Carolina State University
Introduction to 3D Printing (2016)

Teaching Assistant
North Carolina State University
Desktop Publishing and Imaging Technology (2015)
Concepts of Website Development (2015)

Teacher
Riverside High School, Durham, NC
Technology, Engineering, and Design (2015)

Teacher

Franklin Academy Charter School, Wake Forest, NC

Science of Technology (2014-2015)
Robotics (2013-2015)
Digital and Emerging Technology (2013-2015)
Academic (Math/English Language Arts) Enrichment (2013-2015)

Teacher

Neal Magnet Middle School – STEM Academy of Engineering and Design, Durham, NC

Electronics (2012-2013)
Science (spring 2013)
Automation and Robotics (2011-2012)
Design and Modeling (2011-2012)
Energy and the Environment (2011-2012)

Substitute Teacher

Madrid-Waddington Central School District (2005-2007)
Massena Central School District (2005-2007)

Grant and External Funding Experience:

Transforming Teaching through Implementing Inquiry (2015-2016)
Ernst, J.V. (PI), Bottomley, L., Clark, A.C., DeLuca, V.W., & Ferguson, S. (Co-PIs)

Research Assistant
Research and development project investigating the use of a cyberinfrastructure to enhance the delivery and quality of technology, engineering, and design educators.
Funding Source: National Science Foundation (NSF)

Solar Powered Weather Station with Internet Capability (2012)

Grantee
Applied for and received a grant for an internet capable weather station for a high-poverty middle school. The data was used throughout the school to reinforce STEM integration.
Funding Source: Donor's Choose

Service:

Academic:

- Editorial Board Member, Meridian: A K-16 School Computer Technologies Journal (2016-present)
- Reviewer, ASEE Annual Conference and Exposition (2017)

- Reviewer, EDGD 72nd Annual Mid-Year Conference (2016)
- Reviewer, EDGD 71st Annual Mid-Year Conference (2016)
- Reviewer, Meridian: A K-16 School Computer Technologies Journal (2015-2016)
- Reviewer, ASEE Annual Conference and Exposition (2016)
- Reviewer, Clute Institute 2016 International Education Conference (2016)
- Reviewer, EDGD 70th Annual Mid-Year Conference (2015)

Organizational:

- Technology and Engineering Education Collegiate Association – Judge (2016)
- GLBT Advocate Program (2016-present)
- Epsilon Pi Tau Honor Society
  President – Alpha Pi Chapter (2015-present)
  Vice-president – Alpha Pi Chapter (2014-2015)
- The PUSH Initiative
  President (2014-present)
- Graduate Student Advisory Board
  Member (2015-2016)
- Ed Council – Epsilon Pi Tau Representative (2015)
- Neal Middle School
  CTE Department Chair (2011-2012)
  School Leadership Team Representative (2011-2012)
- Tri-Town Volunteer Rescue Squad, Inc.
  New York State Certified Emergency Medical Technician (2004-2009)
  Vice President (2005-2007)
  Board of Directors (2005-2008)
- North Country Community Health Programs
  Executive Director (2007-2009)
- Brasher-Winthrop Fire Department, Inc.
  Volunteer Fire Fighter (2003-2008)
  Captain (2006-2007)
- West Stockholm Fire Department, Inc.
  Volunteer Fire Fighter (2002-2003)
- United States Navy
  Honorably Discharged (1999)

Professional Licensure:

State of North Carolina #**1144177**

- Technology Education
- Science (6-9)

Professional Memberships:

- Southeastern Technology Education Conference (2016-present)
- American Society for Engineering Education (2015-present)
  - Computers in Education Division
  - Design in Engineering Education Division
  - Educational Research and methods Division
  - Engineering Design Graphics Division
  - Computing and Information Technology Division
  - Pre-College Engineering Education Division
  - Technological and Engineering Literacy/Philosophy of Engineering Division
  - Student Division
- American Educational Research Association (2014-present)
- International Technology and Engineering Educators Association (2013-present)
- Epsilon Pi Tau Honor Society (2014-present)
- National Education Association (2015-present)
- North Carolina Association of Educators (2015-present)
- International Society for Technology in Education (2014-present)
- Spatial Intelligence and Learning Center (2014-present)

Additional Training:

Project SAFE Ally (2016)

Project Lead the Way
- Certified in the following courses:
  - Automation and Robotics
  - Design and Modeling
  - Energy and the Environment
  - Flight and Space
  - Magic of Electrons
  - Science of Technology