| **Daniel P. Kelly**  ***Assistant Professor***  Technology, Design, and Engineering Education  Department of STEM Education  North Carolina State University | 111 Lampe Drive, Suite 309  Raleigh, NC 27607  Phone: 919.515.3623  Email: [dpkelly@ncsu.edu](mailto:dpkelly@ncsu.edu) |  |
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Curriculum Vitae – Updated: August 2024

# Education

**Doctor of Education in Technology Education** (2017)

North Carolina State University

Minor: Digital Teaching and Learning

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

Completed 15 graduate 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

# Related Professional Experience

**NC State University** (2023-Present)

**Assistant Professor of** Technology, Design, and Engineering Education

Department of STEM Education

Courses: Introductory Engineering Graphics, Research & Development in Technology Education, Engineering Education, and Student Teaching Supervision

**Graduate Program Coordinator** (2024-Present)

Technology and Engineering Education, Department of STEM Education

**Texas Tech University** (2018-2023)

**Assistant Professor of STEM Education** (2020-2023)

Department of Curriculum and Instruction

Courses: Teacher Routines for Using Data to Support Personalized Learning, Demonstration and Advanced Models of Personalized Learning, Introduction to Statistics, Community Engaged Scholarship, Technology in STEM Education, History and Current Trends in Technology Education, Schools, Diversity, and Society

**Faculty and Research Associate** (2018-2023)

Blended and Personalized Learning

Department of Curriculum and Instruction

Courses: Teacher Routines for Using Data to Support Personalized Learning, Demonstration, and Advanced Models of Personalized Learning

**Assistant Professor of Instructional Technology** (2018-2020)

Department of Educational Psychology and Leadership

Courses: Planning and Producing Instructional Materials, Instructional Systems Evaluation

**Affiliate Faculty** (2019-2023)

Department of Human Development and Family Sciences

**STEM Education Program Coordinator** (2020-2021)

Texas Tech University, Department of Curriculum and Instruction

**Instructional Technology Master’s Degree Program Coordinator** (2018-2020)

Texas Tech University, Department of Educational Psychology and Leadership

**NC State University** (2015-2018)

**Teaching Assistant Professor** (2017-2018)

Department of STEM Education

Courses: Engineering Graphics, Web Development, Electronics, Engineering, Design, Emerging Issues in Technology Education, and Robotics, University Supervisor for Technology Education student teachers

**Graduate Teaching Assistant** (2016-2017)

North Carolina State University, Department of STEM Education

Instructor of Record

Courses: Engineering Graphics, Web Development, Research & Development in Technology Education, University Supervisor for Technology Education student teachers

**Graduate Research** **Assistant** (2015-2016)

Department of STEM Education

NSF Funded Project: Transforming Teaching through Implementing Inquiry

**Graduate Teaching Assistant** (2015)

Department of STEM Education

Courses: Desktop Publishing/Imaging Technology and Concepts of Website Development

**Virginia Tech**

**Research Faculty/Program Director** (2017-2018)

School of Education

NSF Funded Project: Active Learning Modules to Support Problem-Based Learning: Effects on Engineering Retention and Academic Outcomes of At-Risk Students

**K-12 Teaching Experience**

**Teacher** (2015)

Riverside High School, Durham, NC

Courses: Technology, Engineering, and Design

**Teacher** (2013-2015)

Project Lead the Way (PLTW) District Delegate

Franklin Academy Charter School, Wake Forest, NC

Courses: Science of Technology, Robotics, Digital and Emerging Technology, and Mathematics and English Language Arts Enrichment

**Teacher** (2011-2013)

STEM Education Department Chair

Neal Middle School, Durham, NC

School Improvement and Leadership Team Member

Courses: Project Lead the Way (PLTW), Electronics, Automation and Robotics, Design and Modeling, Energy and the Environment, Science

**National Teacher Effectiveness Coach** (2016-2017)

International Technology and Engineering Educators Association (ITEEA)

**Professional Licensure:**

State of North Carolina #1144177 - Expired

* + Technology Education
  + Science (6-9)

# Grants and External Funding:

## Active:

**Kelly, D.P.** (2023). *CAREER: Incarcerated Students Prepared and Inspired to Re-enter their Education (INSPIRE).* Faculty Early Career Development Program (CAREER), National Science Foundation, $587,700/5 years. Principal Investigator.

## Funded and Closed:

**Kelly, D.P.** & White, J. (2022). *Middle School STEM Clubs for Underrepresented Students.* Texas Tech University, College of Education, $5,000/1 year. Principal Investigator.

Greenhalgh-Spencer, H., Childers, G., Gottlieb, J., Wiseman, A., Hite, R., & **Kelly, D.P.** (2020). *MIZ Design and Implementation Certification.* Texas Education Agency, $1,305,144/3 years. Co-Principal Investigator.

**Kelly, D.P.** (2022). *Camp Code.* Texas Workforce Commission. $36,750/1 year. Principal Investigator.

**Kelly, D.P.** (2021). *Raiders Who Code.* Texas Workforce Commission. $64,390/1 year. Principal Investigator.

Greenhalgh-Spencer, H., Hite, R., Gottlieb, J., & **Kelly, D.P.** (2019). *Math Innovation Zones (MIZ) Blended Learning Evaluator.* Texas Education Agency, $296,241/3 years. Co-Principal Investigator.

**Kelly, D.P.,** Lertora, I. & Crews, C. (2020). *Using Computational Thinking to Support Social and Emotional Learning for Underserved Students in an East Lubbock Alternative School.* Texas Tech University, College of Education, $5,000/1 year. Principal Investigator.

Inan, F.A., **Kelly, D.P.,** & Hamrick, J. (2019). *Computing Summer Camp for Students with Autism Spectrum Disorder.* The CH Foundation, $23,000/3 years. Co-Principal Investigator.

Ernst, J.V., Brown, J., Clark, A.C., & **Kelly, D.P.** (2017). *Active Learning Modules to Support Problem-Based Learning: Effects on Engineering Retention and Academic Outcomes of At-Risk Students.* IUSE- Exploration & Design, National Science Foundation, $599,485/4 years. Institutional Principal Investigator.

# Publications

## Books:

Ernst, J.V., **Kelly, D.P.,** Clark, A.C., &Glimcher, S. (2021). *Foundational Engineering Graphics: Principles and Applications.* RAIDER Publishing. ISBN: 9781736837603.

**Kelly, D.P.** (2014*). Falling Down: A Teenager’s True Story of Redemption*. ISBN: 9781491286371

## Invited Journal Articles:

**Kelly, D.P.** (2020). Ethical considerations and recommendations for research involving children in foster care. *Journal of the Texas Tech University Ethics Center, 4*(2), 25-35.<https://ttuec-ojs-ttu.tdl.org/ttuec/index.php/ttuec/article/view/48>

**Kelly, D.P.**, Sabet, A., & Galloway, C. (2018). Technological literacy through service learning and Go Baby Go!. *Technology and Engineering Teacher, 78*(1), 8-13. Retrieved from <https://www.proquest.com/scholarly-journals/technological-literacy-through-service-learning/docview/2117081323/se-2>

## Refereed Journal Articles:

Schettig, E.J., **Kelly, D.P.,** Ernst, J.V., & Clark, A.C.(2022). Facilitative teaching utilizing active learning modules in engineering graphics: A model for promoting success and engagement in technology and engineering education. *Journal of Technology Education*, *34*(1), 5-26.

Missel, F.R., Ernst, J.V., **Kelly, D.P.**, Schettig, E., Clark, A.C. (2022). Active Learning Strategies and Applications for Engineering Design Graphics Courses. *Technology and Engineering Teacher, 82*(4), 15-20.

Schettig, E.J., **Kelly, D.P.,** Ernst, J.V., Clark, A.C., & Sutton, K.G.(2021). Pandemic-induced impacts: Experiences in an introductory engineering graphics course. *Journal of Technology Studies, 47*(1), 12-23. Retrieved from <https://scholar.lib.vt.edu/ejournals/JOTS/v47/v47n1/pdf/finn.pdf>

**Kelly, D.P.** (2021). Pandemic pedagogy: K-12 technology and engineering education under COVID-19. *Journal of Technology Studies, 47*(1), 2-11. Retrieved from <https://scholar.lib.vt.edu/ejournals/JOTS/v47/v47n1/pdf/finn.pdf>

**Kelly, D.P.**, & Denson, C.D.(2021). Reliability and validity for a 3-D modeling self-efficacy scale for pre-college students. *Journal of Technology Studies,* *46*(2), 44-51. Retrieved from <https://www.jstor.org/stable/48647052>

**Kelly, D.P.** (2020). Three-dimensional modeling self-efficacy: An examination of psychometric properties of a domain-specific instrument in engineering graphics education. *Journal of Geometry and Graphics, 24*(1), 125-140.

**Kelly, D.P.** & Kelly, D.L.(2019). Drawing the Line: The challenges of dysgraphia in introductory graphics communication courses. *Journal of Technology Studies, 45*(2), 60-66. Retrieved from <https://www.jstor.org/stable/48647046>

**Kelly, D.P.,** Ernst, J.V.,& Clark, A.C.(2019). Active learning in engineering graphics: An analysis of self-efficacy for at-risk and not at-risk students. *Engineering Graphics Design Journal, 83*(1), 46-59. Retrieved from <http://edgj.org/index.php/EDGJ/article/view/728>

Williams, T.O., Ernst, J.V., **Kelly, D.P.,** & Clark, A.C.(2019). Confirmatory factor analyses of the PSVT: R with data from engineering design graphics students. *Engineering Graphics Design Journal, 83*(1), 1-8. Retrieved from <http://edgj.org/index.php/EDGJ/article/view/724>

Denson, C.D., **Kelly, D.P.,** & Clark, A.C.(2018). Developing an instrument to measure student self-efficacy as it relates to 3D modeling. *Engineering Graphics Design Journal, 82*(3), 1-9. Retrieved from <http://www.edgj.org/index.php/EDGJ/article/view/705>

Denson, C.D. & **Kelly, D.P.** (2018). Using exploratory factor analysis to build a self-efficacy scale for three-dimensional modeling. *Engineering Graphics Design Journal, 82*(2), 1-7. Retrieved from <http://www.edgj.org/index.php/EDGJ/article/view/681>

Ernst, J.V., Williams, T.O., Clark, A.C., **Kelly, D.P.,** & Sutton, K.G. (2017). K-12 STEM educator autonomy: An investigation of school influence and classroom control. *Journal of STEM Education: Innovations and Research, 18*(5), 5-9. Retrieved from <https://www.learntechlib.org/p/182492/>

**Kelly, D.P.** & Denson, C.D. (2017). STEM teacher efficacy in flipped classrooms. *Journal of STEM Education: Innovations and Research, 18*(4), 43-50.

Ernst, J.V., Williams, T.O., **Kelly, D.P.,** & Clark, A.C. (2017). Factors of spatial visualization: An analysis of the PSVT:R. *Engineering Design Graphics Journal, 81*(1), 1-10. Retrieved from <https://www.learntechlib.org/p/181984/>

**Kelly, D.P.** & Rutherford, T. (2017). Khan Academy as supplemental instruction: A controlled study of a computer-based mathematics intervention. *Journal of Computer Assisted Learning, 18*(4), 70-77. <https://doi.org/10.19173/irrodl.v18i4.2984>

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. Retrieved from <https://www.proquest.com/scholarly-journals/multicopter-design-challenge-fly-learn/docview/1834889770/se-2>

**Kelly, D.P.** (2015). Overcoming barriers to classroom technology integration. *Educational Technology, 55*(2), 40-43*.* Retrieved from <https://www.jstor.org/stable/44430356>

## Invited Series Resulting from Sponsored Research:

Springston, M., Ernst, J. V., Clark, A. C., **Kelly, D.P.**, & DeLuca, V. W. (2020). Data analysis. *Technology and Engineering Teacher 79*(4), 26-29*.* Retrieved from <https://www.proquest.com/scholarly-journals/data-analysis/docview/2324858244/se-2>

Lari, P., Rose, A., Ernst, J. V., Clark, A. C., **Kelly, D.P.**, & DeLuca, V. W. (2019). Action research. *Technology and Engineering Teacher 79*(2), 23-27*.* Retrieved from <https://www.proquest.com/scholarly-journals/action-research/docview/2309265428/se-2>

Walton, M., Ernst, J. V., Clark, A. C., **Kelly, D.P.**, & DeLuca, V. W. (2019). Lab and class management. *Technology and Engineering Teacher 78*(8), 13-15*.* Retrieved from <https://www.proquest.com/scholarly-journals/lab-class-management/docview/2226389265/se-2>

Colelli, R., Harrison, H., Ernst, J. V., Clark, A. C., **Kelly, D.P.**, & DeLuca, V. W. (2019). Student organizations. *Technology and Engineering Teacher 78*(7), 33-35. Retrieved from <https://www.proquest.com/scholarly-journals/student-organizations/docview/2216720044/se-2>

Busby, J., Ernst, J. V., Clark, A. C., **Kelly, D.P.**, & DeLuca, V. W. (2019). Professional organizations. *Technology and Engineering Teacher 78*(6), 18-20. Retrieved from <https://www.proquest.com/scholarly-journals/professional-organizations/docview/2187374785/se-2>

Buelin, J., Ernst, J. V., Clark, A. C., **Kelly, D.P.**, & DeLuca, V. W. (2019). Formative evaluation techniques. *Technology and Engineering Teacher 78*(5), 21-23*.* Retrieved from <https://www.proquest.com/scholarly-journals/formative-evaluation-techniques/docview/2173643041/se-2>

Segedin, L., Fahrer, N., Ernst, J. V., Clark, A. C., **Kelly, D.P.**, & DeLuca, V. W. (2019). Adapting instruction. *Technology and Engineering Teacher 78*(4), 9-11*.* Retrieved from <https://www.proquest.com/scholarly-journals/adapting-instruction/docview/2158156693/se-2>

Branoff, T., Ernst, J. V., Clark, A. C., **Kelly, D.P.**, & DeLuca, V. W. (2018). Initial student evaluation. *Technology and Engineering Teacher, 78*(3), 24-26*.* Retrieved from <https://www.proquest.com/scholarly-journals/initial-student-evaluation/docview/2135521994/se-2>

Stefan, V., Furse, B., Ernst, J. V., Clark, A. C., **Kelly, D.P.**, & DeLuca, V. W. (2018). School and community. *Technology and Engineering Teacher, 78*(2), 20-23. Retrieved from <https://www.proquest.com/scholarly-journals/school-community/docview/2135557680/se-2>

Daugherty, J., Ernst, J. V., Clark, A. C., **Kelly, D.P.**, & DeLuca, V. W. (2018). Classroom quality. *Technology and Engineering Teacher, 78*(1), 32-33. Retrieved from <https://www.proquest.com/scholarly-journals/classroom-quality/docview/2117080955/se-2>

Brown, J., Ernst, J. V., Clark, A. C., DeLuca, V. W., & **Kelly, D.P.** (2018). Working with special populations. *Technology and Engineering Teacher, 77*(8), 10-13. Retrieved from <https://www.proquest.com/scholarly-journals/working-with-special-populations/docview/2036144875/se-2>

Blue, C., Mupinga, D., Ernst, J. V., Clark, A. C., DeLuca, V. W., & **Kelly, D.P.** (2018). Multiculturalism in the classroom. *Technology and Engineering Teacher, 77*(7), 25-31. Retrieved from <https://www.proquest.com/scholarly-journals/multiculturalism-classroom/docview/2036334887/se-2>

Luna, E., Ernst, J. V., Clark, A. C., DeLuca, V. W., & **Kelly, D.P.** (2018). Enhancing classroom creativity. *Technology and Engineering Teacher, 77*(6), 26-31. Retrieved from <https://www.proquest.com/docview/2036399176?pq-origsite=gscholar&fromopenview=true>

Lipscomb, K. & Nato, S., Ernst, J. V., Clark, A. C., DeLuca, V. W., & **Kelly, D.P.** (2018). Implementing learning activities. *Technology and Engineering Teacher, 77*(5), 14-19. Retrieved from <https://www.proquest.com/scholarly-journals/implementing-learning-activities/docview/2036374898/se-2>

Ridgeway, J., Ernst, J. V., Clark, A. C., DeLuca, V. W., & **Kelly, D.P.** (2018). Designing standards-based STEM. *Technology and Engineering Teacher, 77*(4), 30-35. Retrieved from <https://www.proquest.com/scholarly-journals/designing-standards-based-stem/docview/2036401498/se-2>

Segedin, L. & Bottomley, L., Ernst, J. V., Clark, A. C., DeLuca, V. W., & **Kelly, D.P.** (2017). Engaging females in STEM. *Technology and Engineering Teacher, 77*(3), 29-31. Retrieved from <https://www.proquest.com/scholarly-journals/engaging-females-stem/docview/1962558119/se-2>

Hart, N., Ernst, J. V., Clark, A. C., DeLuca, V. W., & **Kelly, D.P.** (2017). Best practices. *Technology and Engineering Teacher, 77*(2), 30-34. Retrieved from <https://www.proquest.com/scholarly-journals/best-practices/docview/2051746912/se-2>

Brown, R., Ernst, J. V., Clark, A. C., DeLuca, V.W., & **Kelly, D.P.** (2017). STEM curricula. *Technology and Engineering Teacher, 77*(1), 26-29. Retrieved from <https://www.proquest.com/scholarly-journals/stem-curricula/docview/1937767091/se-2>

## Refereed Proceedings:

Kelly, D., Ernst, J. V., Clark, A. C., Schettig, E. (2021). *Understanding Factors of Engineering Student Persistence Using Predictive Modeling*. American Society for Engineering Education Annual Conference.

Ernst, J.V., Clark, A.C. & **Kelly, D.P.** (2019). Learning and engineering student retention. Published proceedings of the *Engineering Design Graphics Division of the American Society of Engineering Education’s 74nd Midyear Conference*, Norfolk, VA, *74*.

**Kelly, D.P.,** Clark, A.C., & Ernst, J.V. (2019). Online active learning modules to address longstanding gaps in engineering education for students at-risk of non-persistence. Published proceedings of the *EdMedia + Innovate Learning 2019 Conference*, Amsterdam, Netherlands, 1662-1669.

**Kelly, D.P.,** Fahrer, N.E., Sutton, K.G., & Clark, A.C. (2019). Material dissemination of the Biewald Orthographic Visualization Battery. Published proceedings of the *Engineering Design Graphics Division of the American Society of Engineering Education’s 73nd Midyear Conference*, Berkeley, CA, *73*, 7-11.

Nozaki, S., Study, N., **Kelly, D.P.,** Steinhauer, H., Kaloki N., & Sorby, S. (2019). Distribution of the Engineering Graphics Concept Inventory. Published proceedings of the *Engineering Design Graphics Division of the American Society of Engineering Education’s 73nd Midyear Conference*, Berkeley, CA, *73*, 143-146.

Ernst, J.V., Glimcher, S., **Kelly, D.P.,** & Clark, A.C.(2018). Active learning module development for at-risk learners in engineering graphics. Published proceedings of the *American Society of Engineering Education* *Annual Conference and Exposition*, Salt Lake City, UT, Paper #21548.

**Kelly, D.P.** & Kelly, D.L. (2018). Toward an understanding of dysgraphia as a barrier to STEM-related careers. Published proceedings of the *36th International Pupils’ Attitudes Towards Technology Conference*, Athlone Institute of Technology, Co. Westmeath, Ireland, *36*, 417-422.

Ernst, J.V., Clark, A.C. & **Kelly, D.P.** (2018). Introduction to engineering design graphics project supporting problem-based learning for students at-risk. Published proceedings of the *Engineering Design Graphics Division of the American Society of Engineering Education’s 72nd Midyear Conference*, Montego Bay, Jamaica, *72*, 118-122.

Denson, C.D., & **Kelly, D.P.** (2018). Using exploratory factor analysis to build a self-efficacy scale for three-dimensional modeling. Published proceedings of the *Engineering Design Graphics Division of the American Society of Engineering Education’s 72nd Midyear Conference*, Montego Bay, Jamaica, *72*, 29-35.

Williams, T.O., Ernst, J.V., Clark, A.C., & **Kelly, D.P.** (2018). Using confirmatory factor analysis and model respecification to reproduce a one-factor model of the PSVT:R. Published proceedings of the *Engineering Design Graphics Division of the American Society of Engineering Education’s 72nd Midyear Conference*, Montego Bay, Jamaica, *72*, 78-81.

**Kelly, D.P.,** Ernst, J.V., & Clark, A.C. (2017). Hidden STEM: Identifying meaningful STEM career paths for underrepresented students. Published proceedings of the *2017 International Education Conference*, Stockholm, Sweden, *324,* 1-6.

**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, *71*, 1-5.

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 Midyear Conference*, Nashua, NH, *71*, 1-5.

**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, Paper #15738.

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 Midyear Conference,* Daytona Beach, FL, *70*, 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.

**Presentations:**

**Invited Presentations:**

Trejos-Castillo, E. & **Kelly, D.P.** (August, 2022). Understanding Human Interactions & Best Communication Practices. Lubbock County Office of Dispute Resolution.

**Kelly, D.P.** (July, 2020). Recognizing Abuse and Neglect in Virtual Educational Settings. Ysleta Independent School District Blended Learning Summer Institute, Virtual Conference.

**Kelly, D.P.** (July, 2020). Reaching All Students Through Online Blended Learning. Ysleta Independent School District Blended Learning Summer Institute, Virtual Conference.

**Kelly, D.P.** (July, 2020). What Does Blended Learning Online Look Like?. Ysleta Independent School District 2020 Online Education Design Studio, Virtual Conference.

**Kelly, D.P.** (April, 2020). Ethical Considerations and Recommendations for Research Involving Children in Foster Care. Paper presented at the 2020 Texas Tech University Ethics Symposium, Lubbock, TX.

**Kelly, D.P.** (November, 2018). Improving Outcomes for Students in Foster Care. Paper presented at 105th Meeting of the Mississippi Valley Technology Teacher Education Conference, Nashville, TN.

**International Conferences:**

**Kelly, D.P.,** Clark, A.C., & Ernst, J.V. (June, 2019). Online Active Learning Modules to Address Longstanding Gaps in Engineering Education For Students At-Risk Of Non-Persistence. Paper presented at the EdMedia + Innovate Learning 2019 Conference, Amsterdam, Netherlands.

**Kelly, D.P.** & Kelly, D.L. (June, 2018). Toward an Understanding of Dysgraphia as a Barrier to STEM-Related Careers. Paper presentation at the 36th International Pupils’ Attitudes Towards Technology Conference, Athlone Institute of Technology, Co. Westmeath, Ireland.

Ernst, J.V., Clark, A.C. & **Kelly, D.P.** (January, 2018). Introduction to engineering design graphics project supporting problem-based learning for students at-risk. Paper presentation at the American Society for Engineering Education (ASEE) Engineering Design Graphics Division (EDGD) 72nd Midyear Conference, Montego Bay, Jamaica.

Denson, C.D., & **Kelly, D.P.** (January, 2018). Using exploratory factor analysis to build a self-efficacy scale for three-dimensional modeling. Paper presentation at the American Society for Engineering Education (ASEE) Engineering Design Graphics Division (EDGD) 72nd Midyear Conference, Montego Bay, Jamaica.

Williams, T.O., Ernst, J.V., Clark, A.C., & **Kelly, D.P.** (January, 2018). Using confirmatory factor analysis and model respecification to reproduce a one-factor model of the PSVT:R. Paper presentation at the American Society for Engineering Education (ASEE) Engineering Design Graphics Division (EDGD) 72nd Midyear Conference, Montego Bay, Jamaica.

**Kelly, D.P.,** Ernst, J.V., & Clark, A.C. (June, 2017). Hidden STEM: Identifying meaningful STEM career paths for underrepresented students. Paper presented at the 2017 International Education Conference, Stockholm, Sweden.

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.** (March, 2023). ITEEA 85th International Conference, The International Technology and Engineering Educators Association (ITEEA), Minneapolis, MN, "Robots in Jail: Pre-Service Teacher Experiences."

**Kelly, D.P.** (November, 2022). The Joint Conference of the 108th Mississippi Valley Technology Teacher Education Conference and the 58th Southeastern Technology Education Conference, Nashville, TN, "Programing with prisoners: The Logistics, Difficulties, Planning, and Promise of Bringing Technology and Engineering Education to Incarcerated Juveniles."

**Kelly, D.P.** (March, 2022). ITEEA 84th International Conference, The International Technology and Engineering Educators Association (ITEEA), Orlando, FL, "Informal Learning to Engage At-risk Students."

**Kelly, D.P.**, (November, 2021). The Joint Conference of the 107th Mississippi Valley Technology Teacher Education Conference and the 58th Southeastern Technology Education Conference, Nashville, TN, "STEM Explorers: An Update on the State of The Program."

Ernst, J. V., **Kelly, D.P.**, Clark, A. C., Shettig, E., Sutton, K. G. (November, 2021). The Joint Conference of the 107th Mississippi Valley Technology Teacher Education Conference and the 58th Southeastern Technology Education Conference, Nashville, TN, "Success Through Active Learning Modules: A Final Report"

**Kelly, D.P.**, Ernst, J. V., & Clark, A. C. (March, 2021). ITEEA 83rd International Conference, The International Technology and Engineering Educators Association (ITEEA), Denver, CO, "Machine Learning to Predict Undergraduate Student Persistence."

**Kelly, D.P.** (November, 2022). The Joint Conference of the 108th Mississippi Valley Technology Teacher Education Conference and the 58th Southeastern Technology Education Conference, Nashville, TN, "STEM Explorers: An Update on the State of The Program."

Ozdemir, Y., Inan, F. A., Arslan, O., **Kelly, D.P.** (November, 2021). Association for Educational Communications and Technology, Chicago, IL, "Computing Summer Camp Framework for Children with Autism Spectrum Disorder."

**Kelly, D.P.**, Ernst, J. V., Clark, A. C., Schettig, E. (July, 2021) 2021 ASEE Virtual Annual Conference, American Society for Engineering Education, "Understanding Factors of Engineering Student Persistence Using Predictive Modeling."

Sutton, K.G., **Kelly, D.P.**, Ernst, J.V., & Clark, A.C., (November, 2020). Online Engineering Graphics Active Learning Modules to Support Problem-Based Learning. Association for Career and Technical Education’s (ACTE) CareerTech VISION 2020, Virtual Conference.

Inan, F.A. & **Kelly, D.P.** (November, 2020). Summer Computing Camp for Students with Autism Spectrum Disorder (ASD). Paper presented at the Association for Educational Communications and Technology, Virtual Conference.

**Kelly, D.P.** (November, 2020). Using Systems Thinking to Address Behavioral Outcomes for At-Risk Students. Paper presented at the Association for Educational Communications and Technology, Virtual Conference.

Moon, H., **Kelly, D.P.**, Cheon, J., & Lee, J. (November, 2020). Comparison of the Effects of Two Teaching Approaches on the Learning of Conditionals with Block-Based Programming in an Online Environment. Paper presented at the Association for Educational Communications and Technology, Virtual Conference.

Ernst, J.V., Clark, A.C. & **Kelly, D.P.** (November, 2019). Learning and Engineering Student Retention. Paper presented at the Engineering Design Graphics Division of the American Society of Engineering Education’s 74th Midyear Conference, Norfolk, VA.

**Kelly, D.P.,** Clark, A.C., & Ernst, J.V. (November, 2019). A Model for Identifying At-Risk Students in Engineering and Education. Southeast Technology Education Conference, Southeast Technology Education Conference, Nashville, TN.

**Kelly, D.P.** & Iwuji, U.B. (October, 2019). Theoretical Model for Reciprocal Reinforcement of Computational Thinking and Cognitive Behavioral Therapy. Poster presented at the Association for Educational Communications & Technology Annual Conference, Las Vegas, NV.

**Kelly, D.P.** (October, 2019). Addressing Longstanding Gaps in Engineering Students At-Risk of Non-Persistence Through Online Active Learning. Paper presented at the Association for Educational Communications & Technology Annual Conference, Las Vegas, NV.

Inan, F.A., **Kelly, D.P.,** & Ozdemir, Y.M. (October, 2019). Exploring Training Strategies on Computing for Students with Disabilities. Roundtable presented at the Association for Educational Communications & Technology Annual Conference, Las Vegas, NV.

**Kelly, D.P.,** Ernst, J.V., & Clark, A.C. (March, 2019). Online Resources for Engineering Graphics Instruction. International Technology and Engineering Educators Association (ITEEA) Annual Conference, Kansas City, MO.

Ernst, J.V., Clark, A.C. & **Kelly, D.P.** (January, 2019). Online Active Learning Module Workshop. Workshop presented at the Engineering Design Graphics Division of the American Society of Engineering Education’s 73nd Midyear Conference, Berkeley, CA.

**Kelly, D.P.,** Fahrer, N.E., Sutton, K.G., & Clark, A.C. (January, 2019). Material Dissemination of the Biewald Orthographic Visualization Battery. Paper presented at the Engineering Design Graphics Division of the American Society of Engineering Education’s 73nd Midyear Conference, Berkeley, CA.

Nozaki, S., Study, N., **Kelly, D.P.,** Steinhauer, H., Kaloki, N., & Sorby, S. (January, 2019). Distribution of the Engineering Graphics Concept Inventory. Paper presented at the Engineering Design Graphics Division of the American Society of Engineering Education’s 73nd Midyear Conference, Berkeley, CA.

**Kelly, D.P.,** Ernst, J.V., & Clark, A.C. (November, 2018). Primary Results on the Development and Testing of Active Learning Modules for Engineering Design Graphics. Southeast Technology Education Conference, Southeast Technology Education Conference, Nashville, TN.

**Kelly, D.P.** & Kelly, D.L. (November, 2018). Technologies to Mitigate the Impact of Dysgraphia in Technology and Engineering Education. Southeast Technology Education Conference, Southeast Technology Education Conference, Nashville, TN.

Ernst, J.V., Glimcher, S., **Kelly, D.P.,** & Clark, A.C.(June, 2018). Active Learning Module Development for At-Risk Learners in Engineering Graphics. Poster presented at the American Society of Engineering Education Annual Conference and Exposition, Salt Lake City, UT.

**Kelly, D.P.** (April, 2018). Stop complaining about millennials in the classroom! International Technology and Engineering Educators Association (ITEEA) Annual Conference, Atlanta, GA.

**Kelly, D.P.** (March, 2018). GAMECHANGINEER: Create, Plan Write, Play and Learn. 2018 conference, Technology and Engineering Design Educators division of NCACTE (NC Association for Career & Technical Education) Annual Conference, Wilmington, NC.

**Kelly, D.P.,** Ernst, J.V., &Clark, A.C. (April, 2018) Learning modules for at-risk graphics students. Council on Technology and Engineering Teacher Education (CTETE), Atlanta, GA.

**Kelly, D.P.** (October, 2017). Addressing the gender gap in engineering graphics: trends, self-efficacy, and academic outcomes. Southeastern Technology Education Annual Conference, Raleigh, NC.

**Kelly, D.P.,** Autry, B.D., & Kelly, D.L. (October, 2017). Engaging at-risk students in STEM education. Southeastern Technology Education Annual Conference, Raleigh, NC.

**Kelly, D.P.** (March, 2017). Measurements of self-efficacy in engineering graphics students: An examination of factors impacting student outcomes in an introductory engineering graphics course. Poster presented at the 12th Annual Graduate Student Research Symposium at North Carolina State University, Raleigh, NC.

**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 annualSTEM 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.** (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.

**Service and Outreach Presentations:**

**Kelly, D.P.**, Taylor, P., & Taylor, T.(September, 2017). Working with students in foster care. Pre-Service Teacher Professional Development Workshop at North Carolina State University, Raleigh, NC.

**Kelly, D.P.** (July, 2017). Millennials and technology in the classroom. Beginning Teacher Institute at North Carolina State University, Raleigh, NC.

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

**Outreach and Collaborative Activities:**

**STEM Explorers** (2017-2023)

*Texas Tech University/NC State University*

Informal STEM education program for at-risk and underrepresented students including children in foster care and incarcerated minors.

**Division of Diversity, Equity, and Inclusion** (2020-2023)

*Texas Tech University*

Design and implement free coding and programming summer camps for underrepresented local middle school students.

**Center for the Integration of STEM Education & Research (CISER)** (2019-2023)

*Texas Tech University*

Coordinate and supervise in-school and after school informal STEM activities and programs with local school districts.

# Consulting Activities

**Transcend Education** (2021-2023)

Assist the administration faculty in an alternative school with issues related to attendance, belonging, and teacher professional development.

**Penn State University** (2018)

Developed online research platform for NSF grant.

**Honors and Awards:**

## Fellowships

* + Institute for Inclusive Excellence Fellow, Texas Tech University (2020-2021)
  + Service-Learning Faculty Fellowship, Texas Tech University (2020)
  + Technology & Engineering Teacher Education (CTETE) 21st Century Leadership Academy Fellow (2017)

## Awards

* + President’s Engaged Scholarship Award – Texas Tech University (2022)
  + Insight Into Diversity – Inspiring Programs in STEM Award (2021)
  + Diamond Award – Teaching excellence during the pandemic, Texas Tech University (2021)
  + Best Paper, Texas Tech University Ethics Symposium (2020)
  + Editor’s Award, Engineering Design Graphics Journal (2020)
  + International Technology and Engineering Educators Association (ITEEA) Emerging Leader Designation (2018)
  + 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 Foundation for Technology and Engineering Education/Donald Maley Outstanding Graduate Student Award (2016)
  + William Everett Warner Graduate Student Research Award (2015)

## Honors

* + Epsilon Pi Tau Robert & Marilyn Wenig Scholarship (2017)
  + Epsilon Pi Tau Robert & Marilyn Wenig Scholarship (2016)

**Service and Leadership:**

**Editorial:**

* Editor-in-chief – Journal of Foster Care (2019-present)
* Associate Editor – Engineering Design Graphics Journal (2018-2021)

* Reviewer – Standards for Technological and Engineering Literacy (2019)

**University:**

* Texas Tech University First Generation and Pell Grant Student Taskforce – Recruitment Committee (2020-present)
* Member, Texas Tech University STEM Center for Outreach, Research & Education (STEM CORE; 2020-present)

**College:**

* Graduate Faculty Representative – Teacher Certification and Undergraduate Academic Affairs Committee, Texas Tech University (2020-2023)

**Department:**

* Service Excellence Committee, Texas Tech University (2022-present)
* Department Budget Committee, Texas Tech University
* Chair (2021-2022)
* Member (2020-2022)
* STEM Education Program Coordinator, Texas Tech University (2020-2021)
* Program Coordinator – Educational and Instructional Technology Master’s Degree, Texas Tech University (2018-2020)

**Community:**

* Youth Advisory Council – Workforce Solutions, South Plains (2019-2023)
* Board of Directors – Family Counseling Services, Lubbock TX (2019-2023)
* Ambassador Council – Buckner International (2019-2023)
* Court Appointed Special Advocate (CASA; 2018-2020)
* Counseling & College/Career Readiness Advisory Committee – Lubbock ISD (2018-2020)

**Organizational:**

* Southeast Technology Education Conference (STEC)
* President (2021-2022)
  + President Elect (2019-2021)
* Council on Technology & Engineering Teacher Education (CTETE)
  + Chair, Committee on Teacher Revitalization and Retention (2018-present)
* Engineering Design Graphics Division (EDGD) of the American Society for Engineering Education (ASEE) 73rd Annual Mid-year Conference
  + Program Chair (2019)
* GLBT Advocate Program (2016-2018)
* Epsilon Pi Tau Honor Society
* President – Alpha Pi Chapter (2015-2017)
* Vice-president – Alpha Pi Chapter (2014-2015)
* Neal Middle School
  + CTE Department Chair (2011-2012)