

## Todd France

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### EDUCATION

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- Aug 2012 – May 2015 **University of Colorado Boulder**  
PhD, Architectural Engineering  
Certificate: Graduate Teacher Program
- Aug 2007 – Jun 2009 **University of Nevada, Las Vegas**  
Master of Science, Mechanical Engineering
- Aug 1998 – May 2002 **The University of Toledo**  
Bachelor of Science, Mechanical Engineering, Summa Cum Laude

### EXPERIENCE

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- Aug 2015 – Present **Ohio Northern University** – Ada, OH  
Assistant Professor of Engineering Education  
Engineering Education Program Director  
First-Year Engineering Program Co-Coordinator
- Jun 2013 – May 2015 **National Science Foundation GK-12 Fellow** – Longmont, CO  
STEM Educator, St. Vrain Valley School District  
Curriculum development & alignment with Next Generation Science Standards  
Dissertation: Project-Based Learning in a High School Engineering Program
- Jul 2012 – May 2013 **National Renewable Energy Laboratory** – Golden, CO  
Research Assistant, Residential Buildings Group  
Energy model development for a hybrid solar electric/thermal system
- Sep 2009 – Nov 2011 **United States Peace Corps** – Republic of Azerbaijan  
Youth Development Volunteer  
Facilitator for English speaking groups, computer courses, and sports clubs  
Coordinator of Azerbaijan Boys Leadership Experience
- Aug 2007 – Jun 2009 **University of Nevada, Las Vegas**  
Research Assistant, Center for Energy Research  
Thesis: Parametric Study of Efficiency Measures for Home Energy Conservation
- May 2002 – Jun 2008 **Professional Athlete**  
National Football League, National Football League Europe, Arena Football League
- Fall & Winter 2004-05  
Fall & Winter 2002-03 **The University of Toledo** – Toledo, Ohio  
Recruitment Office Assistant  
Tours & educational activity program development for high school students
- Summers 2000 & 2001 **Toledo Molding & Die, Inc.** – Toledo, Ohio  
Co-op: test lab technician & project engineer assistant
- Summer 1999 **Benchmark Engineering Group, Inc.** – Toledo, Ohio  
Co-op: CAD drafter & field technician

## PUBLICATIONS & PRESENTATIONS

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- France, T., Hylton, J., Herak, P., West, M., & Wellman, B. (2021, Aug 9-10). "Building Informed Designers with Engineering Problem Framing Tools." Workshop presented at the 2021 First Year Engineering Experience Conference.
- Sierzputowski, W., France, T., & Hylton, J. B. (2021, Aug 9-10). "Hands on Math Modeling through Building and Programming Intelligent, Adaptable Display Systems with LEDs and Arduinos." Poster presented at the 2021 First Year Engineering Experience Conference.
- Hylton, J. B., & Herak, P. J., & France, T., & Youssef, S. (2021, July). "Towards Development of an Engineering Design Value-expectancy Scale (EDVES)." Paper presented at the 2021 ASEE Virtual Annual Conference.
- Youssef, S., & Herak, P. J., & Hylton, J. B., & France, T. (2021, July), Exploring Trends in First-Year Student Responses on Asynchronous Design Modules Paper presented at the 2021 ASEE Virtual Annual Conference.
- France, T., & Sierzputowski, W. (2021, Mar 20). "Lessons Learned from a First-Year Engineering Wind Turbine Project." Poster presented at the 2021 ASEE North-Central Section Conference, Online.
- France, T., Sierzputowski, W., & Palmer, J. (2021, Feb 4-11). "Windmill Experimentation – A Test Station for Interactive Design + Math Activities." Presentation at the NSF Robert Noyce Teacher Scholarship Program Midwest Regional Conference, Online.
- Herak, P., West, M., Hylton, J.B., France, T., & Wellman, B. (2020, July 21-26). "Assessing Problem-Framing Skills in Secondary School Students Using the Needs Identification Canvas." Paper presented at the ASEE National Conference, Online.
- West, M., Herak, P., Hylton, J.B., France, T., & Wellman, B. (2020, July 21-26). "Evaluation of Engineering Problem-Framing Professional Development for K12 Science Teachers." Paper presented at the ASEE National Conference, Online.
- Roepke, T., France, T., Sierzputowski, W., & Kelly, K. (2019, Oct 25). "Bridging the Span Between Math and Engineering With Spaghetti." Presentation at the Ohio Council of Teachers of Mathematics Conference, Sandusky, OH.
- France, T. (2019, Nov 1-3). "Connecting Math Standards + Engineering Activities." Presentation at the NSF Robert Noyce Teacher Scholarship Program Midwest Regional Conference, St. Louis, MO.
- France, T., Logan, L., Hylton, J.B., & DiBerardino, L. (2019, July 28-30). "Partnering with Occupational Therapists for First-Year Design Projects." Paper presented at the First-Year Engineering Experience Conference, State College, PA.
- France, T., Hylton, J.B., & Logan, L. (2019, July 28-30). "Investigation of a Fall-to-Spring Performance Drop in a First-year Experience." Work-in-progress paper presented at the First-Year Engineering Experience Conference, State College, PA.
- France, T. (2019, Mar 29-30). "Service Learning for Entrepreneurial Mindset." Presentation at KEEN Service Learning Workshop, Tempe, AZ.
- France, T., Deisler, W., Sierzputowski, W., & Williamson, H. (2019, Mar 14). "Occupational Therapy Boards," presentation for Ada Chats, Ada, OH.
- Sierzputowski, W., Katterle, K., Palmer, J., Dazey, T., & France, T. (2019, March 22-23). "Avoiding The Syntax: An Accessible Approach For Introducing First-Year Engineering Students To Microcontrollers." Paper presented at the American Society for Engineering Education North-Central Section Conference, Grand Rapids, MI.
- France, T. & Masters, B. (2018, Aug). "Evaluating the Perceived Value of a First-Year Engineering Experience." Paper presented at the First-Year Engineering Experience Conference, Glassboro, NJ.
- France, T. (2018, June). "Occupational Therapy Boards: Identifying the Value of a High-Impact Service-Learning Project." Paper presented at the ASEE National Conference & Exposition, Salt Lake City, UT.
- France, T. (2017, Nov 17). "Spaghetti Trusses: An inexpensive way to introduce civil engineering into your classroom." Workshop presented at NWO Symposium on Science, Technology, Engineering and Mathematics Teaching, Bowling Green, OH.
- Hylton, J.B., Diberardino, L. & France, T. (2017, June 25-28). "Impact of Various Pedagogies on Design Confidence, Motivation, and Anxiety of First-Year Engineering Students" Paper presented at the ASEE Annual Conference and Exposition, Columbus, OH.
- Hylton, J.B., Estell, J., Diberardino, L. & France, T. (2017, June 25-28). "Work in Progress: Do Students Really Understand Constraints? A Baseline Study." Paper presented at the ASEE Annual Conference and Exposition, Columbus, OH.

- Walker, M., & France, T. (2017, June 24). "Selecting Appropriate Materials for Elementary Engineering Activities," presentation at 2017 ASEE PreK-12 Engineering Education Workshop, Columbus, OH.
- France, T. (2016, Nov 19). "Aerial Observation: A Case Study of a High School Engineering Project." Workshop presented at NWO Symposium on Science, Technology, Engineering and Mathematics Teaching, Bowling Green, OH.
- France, T. (2016, June 25). "Selecting Appropriate Materials for Elementary Engineering Activities." Workshop presented at ASEE PreK-12 Engineering Education Workshop, Columbus, OH.
- Hylton, J.B., & France, T. (2016, July 31-Aug 2). "A Transition in Progress: Building the Foundation for KEEN Outcomes in First-Year Engineering." Paper presented at the First Year Engineering Education Annual Conference, Columbus, OH.
- France, T. (2015, June 14-17). "Project-based Learning in a High School Pre-engineering Program: Findings on Student Achievement." Paper presented at the ASEE Annual Conference and Exposition, Seattle, WA.
- France, T. (2015, June 14-17). "Project-based Learning in a High School Pre-engineering Program: Findings on Student Behavior." Paper presented at the ASEE Annual Conference and Exposition, Seattle, WA.
- Sadineni, S., France, T., Boehm, R. (2011, Nov). "Economic feasibility of energy efficiency measures in residential buildings." *Renewable Energy*, vol. 36:11 (2925–2931).
- France, T., Hurt, R., Boehm, R., & Sadineni, S. (2009, July 19-23). "Home Energy Conservation in the Las Vegas Valley." *ASME Energy Sustainability*, San Francisco, CA.
- France, T., Wiemers, E., Baghzouz, Y., Butterworth, S., & Boehm, R. (Aug 10-14). "Renewable Energy for Federal Land Management Agencies in Southern Nevada." *ASME 2<sup>nd</sup> International Conference on Energy Sustainability*, Jacksonville, FL.

## GRANTS & SUPPORTED RESEARCH

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- National Science Foundation Robert Noyce Teacher Scholarship Program, Senior Personnel (2020-2023): "Emerging and Effective Culturally Relevant Practices for Mathematics and Science Teaching in High Needs Schools"
- National Science Foundation Robert Noyce Teacher Scholarship Program, PI (2018-2023): "Ohio Excels: Preparing Highly Qualified Educators through the Integration of Engineering and Mathematics"
- National Science Foundation Discovery PreK-12 Program, Co-PI (2018-2022): "Promoting Engineering Problem Framing Skill Development in High School Science and Engineering Courses"
- KEEN Cross-Network Mini-Grant for Technology & Engineering Education Methods (Fall 2020)
- KEEN Pedagogy Mini-Grant for Sustainable Building Design (Spring 2020)
- ONU Study Abroad Grant for Sustainable Development in Puerty Rico (2020, postponed)
- Ohio Space Grant Consortium Informal Innovation Proposal, PI (2019, postponed): "Dorr Elementary Bike Project"
- Ohio Space Grant Consortium for Informal Education Innovation Proposal, PI (Summer 2017): "STEM Day – Outreach Events at Local Elementary Schools"
- Ohio Space Grant Consortium for Informal Education Innovation Proposal, PI (Summer 2017): "Ohio Northern University Engineering Education Program"
- Ohio Northern University Information Literacy Faculty Development Grant, PI (Summer 2017): "One-Minute Engineer" to support student research capabilities
- Ohio Northern Summer Research & Evans Student Research Fellowship Program advisor (Summer 2017)
- University of Colorado Boulder Beverly Sears Graduate Student Grant Program (Fall 2014)
- NSF Engineering Education Pioneers – interviewer (Spring 2014): "Engineering Education Pioneers and Trajectories of Impact"
- U.S. Peace Corps Democracy Commission Small Grants Program (Summer 2011): Organization and facilitation of Azerbaijan Boys Leadership Experience
- U.S. Peace Corps Partnership Program (Spring 2010): Organization and facilitation of youth bicycle club

## HONORS & AWARDS

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Favorite Faculty – ONU Mortar Board Spring 2016  
University of Toledo Varsity ‘T’ Hall of Fame inductee 2012  
NCAA Postgraduate Scholarship 2002  
Sastri-Deshpande Award for Outstanding Leadership & Scholarship Achievement 2002  
2001 1<sup>st</sup> Team & 2000 2<sup>nd</sup> Team Academic All-American, NCAA Football  
All-MAC football selection & MAC academic honor roll 1998-2001

## SERVICE

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### University

Engineering Education Program director, student advisor, ABET accreditation (2015 – present)  
American Society for Engineering Education student chapter faculty advisor (2015 – present)  
American Society for Engineering Education campus representative (2017 – present)  
Center for Teacher Education member (2015 – present)  
First-year Common Experience facilitator (2015 – present)  
KEEN Team committee member (2015 – present)  
Football team consultant (2015 – present)  
Senior capstone advisor (2016-present)  
Education program search committee member (Spring 2019)  
Summer research project advisor (Summer 2016, 2018-20)  
Summer orientation advisor (Summer 2017-present)  
Foundations for our Future Project lead for Engineering Education Program (2018)  
KEEN Civil & Environmental Engineering Department Curriculum Committee member (2018-19)  
KEEN Immersive Design Experience – Las Vegas, lead organizer and facilitator (May 2018); Grand Tetons & Yellowstone National Parks, co-organizer and facilitator (Aug 2017)  
Spatial visualization workshop facilitator (Spring 2018, 2019)  
Engineering Pathways, workshop facilitator (Summer 2017, 2018)  
Student Improvement Plan advisor (Spring 2017, Spring 2018, Fall 2018, Spring 2019)  
Ohio Space Grant Consortium Education Campus Representative (2016 – present)

### Professional

First-Year Engineering Experience conference program chair (2021)  
American Society for Engineering Education member (2014 – present)  
Conference paper evaluator (2016 – present)  
NSF Noyce Midwest Regional Conference committee member (2020-22)  
NASA Minority University Research and Education Program Aerospace Academy expert review panelist (2020)  
NWO Center for Excellence in STEM Education, Ambassador Board member (2016 – present)  
NSF Education and Human Resources, evaluator (Spring 2017, Fall 2020)

### Community

Math + Engineering Education workshops for K-12 teachers – Ada, OH (2019); Online (2021)  
Service learning project coordinator with northwest Ohio community members (2017 – present)  
STEM Day outreach coordinator – northwest Ohio school districts (2-4 events per year, 2015 – present)  
Engineering design challenges at Ada Schools, organizer (Spring 2016 – present)  
Metro Early College High School capstone project reviewer (Spring 2020)  
Lima/Allen County MakerFest design challenges, organizer and facilitator (Fall 2016-19)  
West Central District Science Fair, judge (Mar 2016)  
Ada Science Fair, judge (Jan 2016)  
Ada Civic Engagement Day – Ada, OH (Aug 2015)  
Grid Alternatives – Denver, CO (Sep 2012)  
Meals on Wheels – Las Vegas, NV (2007-2009)  
North Light Community Center – Manayunk, PA (Spring 2007)  
Toledo Area Humane Society – Maumee, OH (2004-2005)  
Habitat for Humanity – Toledo, Las Vegas, Denver (2004-2005, 2008-2009, 2012)