

- 1A.1 *Using the Internet of Things to Teach Good Software Engineering Practice to High School Students*** by Christine Julien (University of Texas at Austin)
- 1A.2 *Using Multi-Disciplinary Design Challenges to Enhance Self-Efficacy within a Summer STEM Outreach Program*** by Tony McClary, Jacqueline A. Zeiber, Patricia Sullivan, and Steven Stochaj (New Mexico State University)
- 1A.3 *NSU- LSMSA Makers Club: Advanced STEM Educational Modules and Enhanced Experiential Learning*** by Jafar F. Al-Sharab, Curtis Desselles, Robert Dalling, Mauricio Escobar, Ariell Shield, Hoa Nguyen, McKenzie Cutrer, and Will Heitman (Northwestern State University)
- 1A.4 *STEM Enhancement in Earth Science (SEES): A NASA/TSGC/UTCSR High School Internship Program (Active, Experiential, and Collaborative Learning)*** by Timothy Urban and Margaret Baguio (University of Texas at Austin)
- 1A.5 *Control Systems and Robotics Outreach to Middle-school Girls: Approach, Results, and Suggestions*** by Pranav A. Bhounsule, Ahmad Taha, and Sebastian Nugruho (University of Texas at San Antonio)
- 1B.1 *Faculty and student feedback of synchronous distance education in a multi-university learning consortium*** by Brian P. Bernard, Rui Cao, and Maureen Russo Rodríguez (Schreiner University)
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- 1B.3 *Engaged Lecturing in Lecture-Based Courses*** by P.L.Stephan Thamban and Dani Fadda (University of Texas at Dallas)
- 1B.4 *Applying Problem Based Learning to Improve Student Engagement in an Engineering Economics Course*** by Joseph A. Donndelinger (Baylor University)
- 1B.5 *How Does An Online Version of A Class Compares To An In-Class Version?*** By Tariq Khraishi and Kristine Denman (University of New Mexico)
- 1C.1 *Challenges to Developing Professional Skills in Undergraduate Chemical Engineers at a Minority Serving University*** by Matthew Alexander (Texas A&M University-Kingsville)
- 1C.2 *Identifying Challenges to Infusing Ethics into the Development of Engineers at Texas State University*** by Jitendra Tate, Craig Hanks, Harold Stern, and Walt Trybula (Texas State University)
- 1C.3 *Teaching Engineering Ethics in the Classroom through a Town Hall Meeting Activity*** by Sarah Seraj, June Young Park, and *Michael Pieratt (University of Texas at Austin, *General Atomics Aeronautical Systems, Inc.)
- 1C.4 *Do Engineering Students Learn Ethics From an Ethics Course?*** by Roman Taraban, William M. Marcy, Mark S. LaCour, Dashiell Pashley, and Klara Keim (Texas Tech University)
- 1C.5 *Effective Student Outcomes Assessment Plan Reform Strong Undergraduate Curriculum Plan*** by Talal D. Gamadi, Bethany Disque, Marshal Watson, and Lloyd Heinze (Texas Tech University)

- 1D.1 *Hands-on Learning in Multiple Courses in Electrical and Computer Engineering*** by John Attia, Mahamadou Tembely, Lisa Hobson, and Pamela Obiomon (Prairie View A&M University)
- 1D.2 *The Design and Development of a Multi-Disciplinary Project in Embedded Systems Design*** by Cynthia C. Fry and Steven P. Potter (Baylor University)
- 1D.3 *Laboratory Experiments on 5G Cellular Technologies – A Case Study on the Synergy of Research and Experiential Learning*** by *Viktor Nässi and Ana Goulart, (*Aalto University, Texas A&M University)
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- 1D.5 *A Survey of Digital Systems Curriculum and Pedagogy in Electrical and Computer Engineering Programs*** by *Hector A. Ochoa and Mukul V. Shirvaikar (*Stephen F. Austin State University, University of Texas at Tyler)
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- 2A.2 *The Practices of Play and Informal Learning in the miniGEMS STEAM Camp*** by Chaoyi Wang, Michael Frye, and Sreerenjini Nair (University of the Incarnate Word)
- 2A.3 *A New Scale for Measuring Engineering Identity in Undergraduates*** by Maura Borrego, Anita Patrick, Luis Martins, and *Meagan Kendall (University of Texas at Austin, *University of Texas at El Paso)
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- 2B.4 *The Talking Points Tool: A Brief Intervention to Support Predoctoral Student and Faculty Advisor Communication*** by *Julia N. Savoy, Mia K. Markey, and H. Grady Rylander, III (*University of Wisconsin-Madison, University of Texas at Austin)
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- 2D.3** *Work-in-Progress: Research Plan for Introducing Problem Solving Skills through Activities to an Introductory Computer Science Course* by Stephany Coffman-Wolph, *Kimberlyn Gray, and **Marcia Pool (University of Texas at Austin, *West Virginia University Institute of Technology, **University of Illinois at Urbana Champaign)
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- 3A.1** *Understanding Behaviors of Attendance in Supplemental Instruction and Subsequent Academic Success in a First Year Engineering Course* by Nisha Abraham and Nina Telang (University of Texas at Austin)
- 3A.2** *The Effects of a First Year Engineering Class Using the SCALE-Up Method on Student Retention and Subsequent Student Pass Rates* by David Ewing (University of Texas at Arlington)
- 3A.3** *Getting the Right Stuff with the Write Stuff: Instructional Methods to Improve Writing in a First Year Engineering Course* by Peggy Kulesz and David Ewing (University of Texas at Arlington)
- 3A.4** *Using the Spreadsheet as a Tool for Teaching the Fundamentals of Engineering* by Arthur F. Garcia, Jr. (Palm Beach State College)
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- 3D.2** *Set Theory and Proofs for Engineering Education* by Martha Pieper and Shih-Feng Chou (University of Texas at Tyler)
- 3D.3** *Using Spreadsheets to Enhance Understanding of Number Theory* by Mario Toussaint and Don Ploger (Florida Atlantic University)
- 3D.4** *Low-Cost Portable Light Therapy for Alzheimer’s Patients* by Melghi Arasu, Sara Zoghi, and Ben Zoghi (Texas A&M University)
- 3D.5** *Space-Based Capstone: Public-Private-Academic Partnership in the Making* by Colby Ryan, Alexis Crandall, Mitch Martinez, David Kennedy, Kristian Ecolango, Jay Porter, and Joseph Morgan (Texas A&M University)
- 4A.1** *Using GitHub as a Teaching Tool for Programming Courses* by Miguel A. Angulo and Ozgur Aktunc (St. Mary’s University)
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- 4A.3** *Reverse Engineering Environment for Teaching Secure Coding in Java* by Young Lee and *Jeong Yang (Texas A&M University-Kingsville, *Texas A&M University-San Antonio)
- 4A.4** *Fun and Interactive Activities for an Introductory Computer Science Course of 200 Students* by Stephany Coffman-Wolph and *Kimberlyn Gray (University of Texas at Austin, *West Virginia University Institute of Technology)
- 4A.5** *Extending an alginate drug delivery experiment to teach computational modeling and engineering analysis to 1st year biomedical engineering students* by Daniel Puperi (University of Texas at Austin)

- 4B.1 *A Conceptual Mechanism Design Activity for an Introduction to Mechanical Engineering Course*** by Oziel Rios and Dani Fadda (University of Texas at Dallas)
- 4B.2 *An Example of Teaching Geometric Dimensioning and Tolerancing (GD&T) Concepts using 3D Printed Parts*** by Oziel Rios (University of Texas at Dallas)
- 4B.3 *BAJA SAE: Building an Engineer*** by Myles Sloan, Chung Hyun Goh, and Fredericka Brown (University of Texas at Tyler)
- 4B.4 *Using Active Learning and Team Competition to Teach Gas Turbine Cycle Design*** by Kenneth Van Treuren (Baylor University)
- 4B.5 *Studying the Effectiveness of Peer Instruction in Statics*** by Sreedevi Ande (University of the Incarnate Word)
- 4C.1 *Adaptation of a University Soils Mechanics Course for a Union Technician Training Program*** by Thomas J. Dobrowski (Purdue Northwest)
- 4C.2 *Analyzing Multidisciplinary Team Effectiveness in an Engineering Environment: A Case Study of the West Point Steel Bridge Design Team*** by John Etringer, Stephen O'Brien, Austin Updegraff, Timothy Langerhans, Andrew Nadjari, Chan Kim, Aaron Hill, and Michael Campbell (United States Military Academy)
- 4C.3 *Student Mastery of Engineering with Design Review*** by Aaron T. Hill and Michael C. Campbell (United States Military Academy)
- 4C.4 *Introduction of Structural Health Monitoring to Civil Engineering Education*** by *Vijaya Gopu, Ayman Okeil, and Roger Seals (*University of Louisiana- Lafayette, Louisiana State University)
- 4C.5 *Implementation of a Hybrid Teaching Environment for a Traffic Engineering Course*** by Mena Souliman (University of Texas at Tyler)
- 4D.1 *Development of a Rooftop Collaborative Experimental Space through Experiential Learning Projects*** by Heather S. Rose, Charles R. Upshaw, Joshua D. Rhodes, Yuval Edrey, Michael E. Webber (University of Texas at Austin)
- 4D.2 *Water Content and Thermoplastic Polyurethane Effects on Thrombosis Clotting*** by Madeline Small, *Monica Jackson, *Pierre Neuenschwander, Shih-Feng Chou (University of Texas at Tyler, *University of Texas Health Science Center at Tyler)
- 4D.3 *Fabrication and Characterization of Electrospun Drug-eluting Nanofibers from Polycaprolactone/Chitosan Blends*** by Jeffrey Thompson, Mulugeta Gizaw, Shih-Feng Chou (University of Texas at Tyler)
- 4D.4 *Beyond First/Last Mile Active Transportation – BikeShare@UH*** by Julio Alonso, Jesus Vargas, *Daniel Li, Abraham Elizarraras, Tony Hoang, Khanh Vu, J. Patterson, Mohammad Palwala, Marco Maldonado, Masaki Isago, Mark Aranda, Lan Trinh, Tu Huynh, Tie Nguyen, Bao Ly, **Jiao Huang, Heidar Malki, Xiaojing Yuan (University of Houston, *University of North Texas, **University of Texas at Dallas)
- 4D.5 *Thank God it's Friday: Student Attendance in Classes Just before Weekend*** by Ifte Choudhury (Texas A&M University)