Contents

Articles

2 Positioning the T and E in STEM: A STL Analytical Content Review of Engineering and Technology Education Research
Paul A. Asunda & Jenny Quintana

30 Teaching Upcycling to Impact Environmental Attitudes
Jim Flowers, Cale Rauch, & Alexander Wierzbicki

46 Research Evidence of the Impact of Engineering Design on Technology and Engineering Education Students
Jenny Daugherty, Raymond Dixon, & Chris Merrill

66 The Impacts of Integrating Introductory Composition, Communication, and Design Thinking Courses
Amelia Chesley, Michael W. Coots, Andrew Jackson, Sarah Knapp, Nathan Mentzer, & Dawn Laux

Book Review

83 STEM Leadership: How do I Create a STEM Culture in my School
Carlotta Vaughn

Miscellany

85 Scope of the JTE
Editorial Review Process
Manuscript Submission Guidelines
Subscription Information
JTE Co-sponsors and Membership Information
JTE Editorial Review Board
Electronic Access to the JTE