



ROCKY MOUNTAIN SECTION
CONFERENCE **2013**



MARCH 29-30, PUEBLO, COLORADO

2013 ASEE Rocky Mountain Section Conference

March 29-30, Pueblo, CO

American Society for Engineering Education
Rocky Mountain Section
Conference, 2013

March 29- 30, Pueblo, Colorado

Proceedings



Colorado State University-Pueblo

TABLE OF CONTENTS

1. Using Project-Based Learning in a Large Statics Course: Is it Worth It?	1
2. A Case Study of an International Partnership to Increase Opportunities among Youth-at-Risk.....	2
3. Learning by Competing: Challenges and Rewards for Construction Management Students.....	6
4. Student Perceptions of the Importance and Achievement of Sustainable Engineering Outcomes	12
5. Learning from High Potential, Next Tier Students: Evaluating a Noncognitive Questionnaire for Use in Admission Practices	22
6. Status and the Roles of Students in Engineering: A Justification for Studying the Creation of Status Assignment in Freshman and Sophomore Year.....	26
7. A Project-structured Approach to a Graduate-level Advanced Thermodynamics Class	27
8. Undergraduate Research: Proof of Concept Projects.....	37
9. Lagrangian Projects in Sophomore Dynamics.....	44
10. SolidWorks Examples for Dynamics Instruction	50
11. Developing an Educational Agenda in a Research Intense College of Engineering.....	56
12. Creating a Space for Engineering in the Science Curriculum in K-12 Schools.....	57
13. Learning from Failure: Understanding Unintended Barriers to Math	65
14. Design Center Colorado: Fostering Meaningful Partnerships between Students, Industry and Government Agencies.....	66
15. Inclusive Excellence to Bolster Diversity: A System of Capacity-Building Pathways to and Through Engineering	67
16. Evaluating Academic Success of Tiospaye American Indian STEM Scholars	69
17. Dilemmas of becoming in engineering education	70
18. Retention and Recruitment as Part of a Pre-Engineering Education Collaborative	71
19. Globalizing Engineering Education: A Review of Academic Cultures on Both Sides of the Atlantic Ocean	80
20. Engineering Education Elsewhere An Engineering Curriculum at the University of Dar-Es-Slaam	81
21. Infusing Sustainability into an Operations Planning and Control Class through Analyzing the Nissan LEAF Electric Car	82
22. All Aboard: Engineers for an MS in Railroad Engineering.....	92

23. Teaching of Composites Manufacturing Course into Manufacturing/Mechanical Engineering Technology Program	100
24. Computer Programming Project Requirement in Engineering Courses	105
25. Developing a Low-Cost Control System Lab Station	113
26. Matlab Software for an Artificial Intelligence Class.....	120
27. Teaching Sustainability - an Increment into the Engineering Courses or a Paradigm Shift in Engineering Education?	121
28. Synergy between MSISE and MSE Curricula at Colorado State University - Pueblo	127
29. The Role of Engineering Education in Building Workforce Capacity for the Railroad Industry...	135
30. Electronics Engineering Technology Student Recruitment Design Project	145