



MISSISSIPPI STATE UNIVERSITY™  
RESEARCH & CURRICULUM UNIT

# 2016 ANNUAL REPORT



**50** YEARS OF SERVICE TO  
**MISSISSIPPI EDUCATION**

# RCU CELEBRATES 50<sup>TH</sup> ANNIVERSARY OF SERVICE TO MISSISSIPPI

In September 2015, the RCU celebrated a half-century of service to Mississippi in its mission to improve the lives of Mississippians through research and innovation in the field of public education. During a gala celebration marking the anniversary, past and present RCU staff, along with education stakeholders from across Mississippi, gathered on the campus of Mississippi State University to recall the RCU’s past and look ahead to its future.

The RCU traces its history back to 1963 and congressional passage of the Vocational Education Act, which is widely credited with reawakening America’s focus on vocational education. With an emphasis on learning that leads to employability, the then-Research Coordinating Unit for Vocational-Technical Education was established in 1965 to write new curricula for Mississippi’s CTE programs. During succeeding decades, the RCU concentrated on linking research results with curriculum development, developing customized training programs for emerging areas of industry, and implementing training programs for new CTE teachers who were skilled in their fields but lacked a traditional teaching background. In 2013, the RCU broadened its

longstanding partnership with the Mississippi Department of Education to encompass training, evaluation, and research across a variety of public education initiatives.

While the RCU maintains a core focus on CTE curriculum, assessment, and professional development, it has also expanded into new areas, such as innovative school models, statewide educator evaluation, and performance-based compensation. In its 50th-anniversary year, the RCU’s work touched issues as diverse as computer science for K-12 students, early college high schools, and redesigned training for new CTE educators. In every initiative it tackles, the RCU is committed to expanding and improving CTE education in Mississippi and collaborating with educators and leaders to encourage innovation in districts, schools, and classrooms.

“Since our founding in 1965, the RCU has come a long way,” said Julie Jordan, director of the RCU. “Our work to expand and improve CTE education in Mississippi is ongoing, and we continue to collaborate with educators and leaders across the state to bring innovation to public education. I am proud of all we have accomplished, and we continue our mission to ensure that every Mississippi student graduates ready for college, career, and life.”

**1917**

Smith Hughes Act provides first funding for vocational education

**1963**

Vocational Education Act reawakens vocational education

**1965**

RCU created at Mississippi State University

**1973**

RCU establishes four program areas: curriculum, research, industry, and field services



RCU Director Julie Jordan speaks at the RCU's 50th anniversary celebration held December 10, 2015 at the Hunter Henry Center at Mississippi State University.  
*Photo by Russ Houston.*



(Left) 50th anniversary celebration attendees enjoy refreshments. (Right) Scrapbooks of photos taken at RCU events throughout the years provided nostalgia at the 50th anniversary celebration.  
*Photos by Russ Houston.*



Stafford Hall, the RCU's home from 1969-1996.  
*Photo by Amanda Gronewold.*



Former RCU director Bruce Stirewalt (left) speaks with RCU associate director Betsey Smith (center) and Mike Mulvihill (right), Mississippi Department of Education director of career and technical education.  
*Photo by Russ Houston.*

A comprehensive timeline of the RCU's history can be viewed at [rcu.msstate.edu/RCUhistory](http://rcu.msstate.edu/RCUhistory)

**1984**  
Perkins Act puts focus on increasing quality of CTE

**2001**  
RCU begins conducting statewide assessment for Mississippi's CTE students

**2013**  
Partnership with Mississippi Department of Education expands to areas outside CTE

**2015**  
RCU celebrates 50th anniversary on June 1st

# ASSESSMENT

The RCU assessment team researches, develops, and disseminates statewide assessments for all secondary and postsecondary CTE programs in Mississippi. In addition to providing education leaders with accurate and timely data and reporting on standardized multiple-choice tests used statewide, the RCU also employs alternative methods of assessment, including performance-based assessment and national certifications.

## FY16 FACTS

Developed **127** secondary MS-CPAS2 assessments & **136** postsecondary assessments

**TESTED**  
**57,176** students electronically on MS-CPAS2 assessments

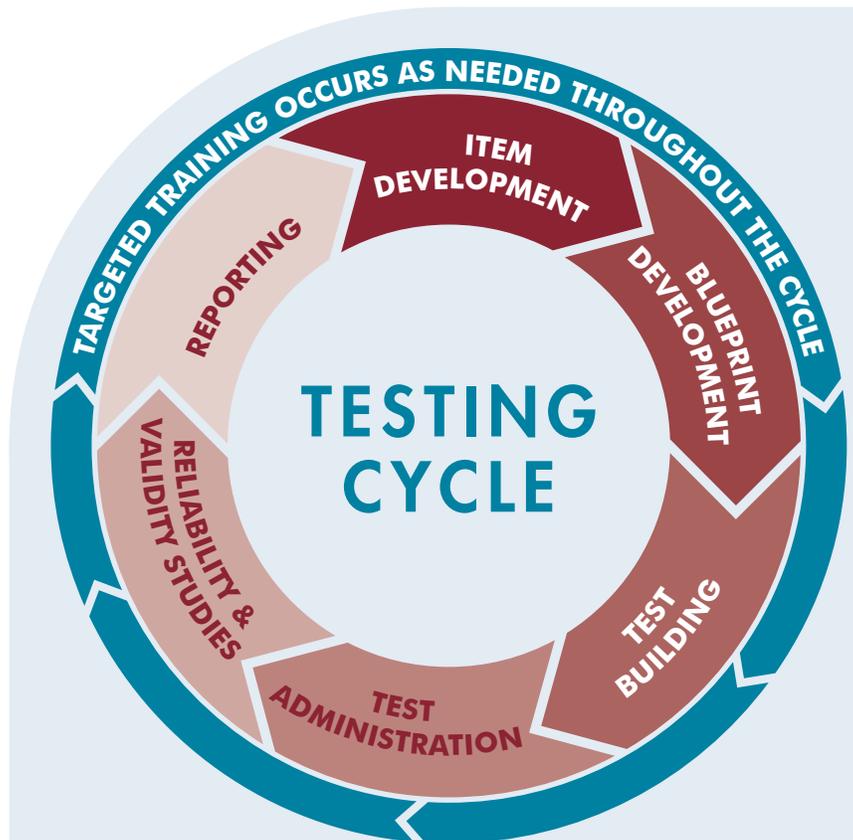
Held **46%** more alignment, reliability, and validity reviews for MS-CPAS2 items. **197** teachers participated, an increase of **41%**\*

\* Compared to FY15

Managed a **69%** increase in the number of secondary student certification assessments: **5,355** assessments administered in FY16, versus **3,178** in FY15

Coordinated the use of performance-based assessments in

**9** CTE pathways statewide alongside or in place of MS-CPAS2 end-of-course assessments; this included **217** districts and **1,327** students



# COMMUNICATION & OPERATIONS

The RCU strives to convey the story of CTE and public education in Mississippi through its communication work. On behalf of the Mississippi Department of Education, we produce and publish two magazines that highlight innovative education practices in the state. We also disseminate research and evaluation results in a variety of formats, including eye-catching posters and infographics, research briefs, and other printed and electronic media. All staff at the RCU assist clients with needs and requests, such as design projects, online course modules, and rosters for testing, via our online help desk system.

## FY16 FACTS

Produced

**2** issues of **Connections** magazine and distributed copies to a combined **9,442** CTE stakeholders throughout Mississippi

Completed

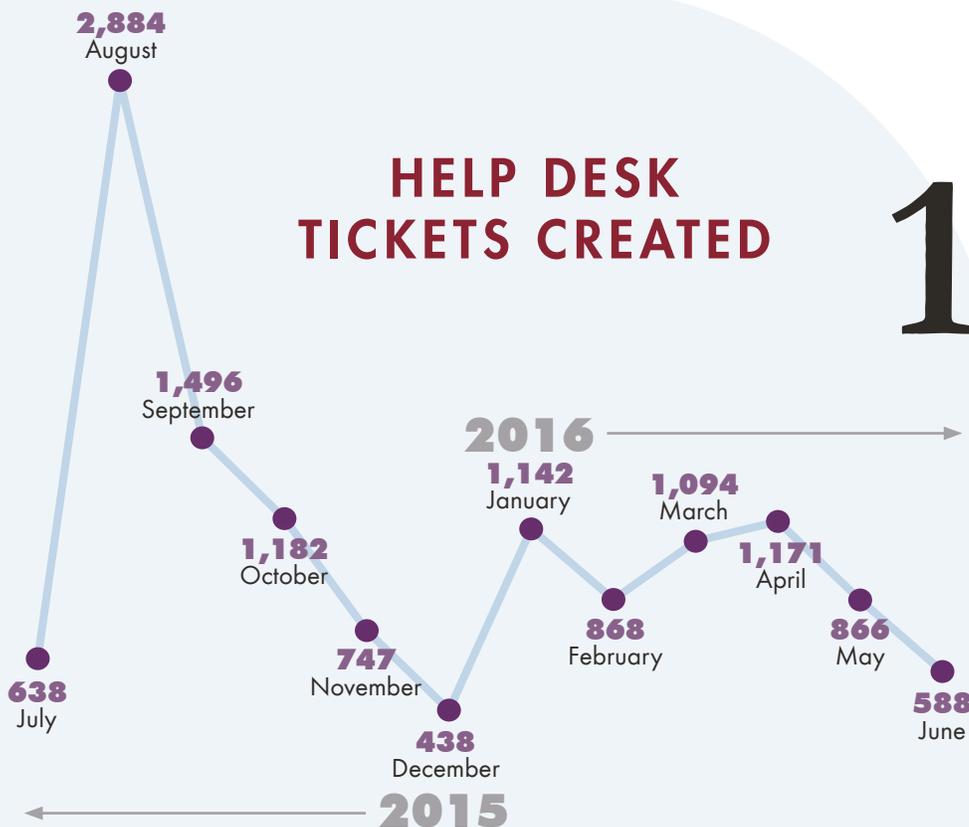
**423** design and editorial projects

Produced

**5** research briefs that distill the findings of the RCU's research and evaluation projects

## HELP DESK TICKETS CREATED

Responded to **13,159** Help Desk tickets



# CURRICULUM

The RCU believes that a high-quality curriculum is at the core of every great class. In partnership with educators and industry leaders, we strive to create course content for Mississippi's CTE pathways that combines academic rigor with real-world relevance. RCU staff are also working on the creation of new curricula for K-12 science, social studies, and computer science in Mississippi.

## Secondary Curricula for the State Board of Education Approved January 2016

- 2016 Architecture and Drafting
- 2016 Business Fundamentals (Core)
- 2016 Diesel Service Technician
- 2016 Furniture Manufacturing
- 2016 Heavy Machinery Operation
- 2016 Horticulture
- 2016 HVAC\*\*
- 2016 Industrial Maintenance\*\*
- 2016 Information Technology\*\*
- 2016 Management
- 2016 Marketing
- 2016 Simulation Animation Design

\*\*Curricula brought to the SBE out of the usual revision cycle due to national standards changing.

## RCU Lays Groundwork for Statewide CS4MS Pilot Program

Beginning in the summer of 2015, the RCU began working with the Mississippi Department of Education (MDE) to develop a K-12 curriculum for computer science (CS), and in April 2016, the MDE announced the launch of the Computer Science for Mississippi (CS4MS) pilot program. Thirty-eight school districts from across Mississippi are participating in the first year of the CS4MS pilot program during the 2016-2017 academic year. The goal of CS4MS is to introduce Mississippi students to CS, equipping them to be technologically literate citizens and preparing them for CS jobs. The CS4MS pilot program also addresses an urgent economic need: According to Code.org, there are currently 607,708 open computing jobs nationwide, but the US only graduated 42,969 CS students into the workforce last year. Increasingly, schools and parents alike are realizing the potential and promise of CS, yet most schools do not offer CS opportunities for students. The CS4MS pilot program aims to address this knowledge gap so that Mississippi's students can compete for CS jobs alongside candidates from any other state or country around the world. During the pilot's first year, 235 teachers from 156 elementary and high schools will deliver CS content to students. In future years, the MDE plans to add CS courses for 6th-8th grades, expand high school course offerings, and ultimately have a continuous K-12 CS curriculum in place for all Mississippi public schools by 2024. In order to bring CS4MS to life, the MDE partnered with the RCU to lay the groundwork and to manage the pilot. RCU staff conducted research to discover how other states incorporate CS into their public schools and then worked with MDE to select pilot curricula, set initial standards, and structure the program. The RCU also spearheaded the creation of a CS4MS steering committee that includes representatives from K-12, higher education, and industry.

## FY16 FACTS

Revised  
**12** secondary CTE curricula that were finalized and approved by the State Board of Education

Impacted  
**235** CTE programs and **3,763** students through updated FY16 curricula

Hosted over  
**40** teachers who participated on curriculum-writing teams

# PROFESSIONAL LEARNING

The RCU helps educators perfect the craft of teaching by providing professional development for teachers, counselors, and administrators. Using versatile teaching styles and delivery methods, the RCU encourages educators to implement innovative teaching strategies that can reach diverse learners. Professional-development opportunities are delivered through a mixture of in-person, online, and hybrid methods.

## New Teacher Induction Training Undergoes Redesign

One of the major strengths of CTE in Mississippi is the knowledgeable, experienced individuals who leave the workforce to become high school teachers. These specialists are trained in their field, yet they often lack formal classroom experience. In order to meet the unique professional-development needs of these educators, the New Teacher Induction (NTI) program provides an intensive yearlong training experience that prepares new CTE teachers to hit the ground running. Completion of the program is required in order for teachers to receive a Mississippi CTE teaching license. During the NTI program, new teachers spend two weeks preparing for their first month of school; creating lesson plans; and building their syllabi, rules, and procedures. Summer training is followed by regional training sessions during the school year and eight days of additional training in June, when a celebration is held for the participants who complete all the requirements and graduate from the program. During FY16, the NTI program underwent a redesign to reflect insights from past participants and their CTE directors. Modifications included dedicating time to focus on content-specific methods training in content-specific classrooms led by successful veteran teachers, providing mentors to program participants during their first year in the classroom, and increasing the focus on real-life applications by participating in industry visits. As a result of these changes, Mississippi's new CTE teachers will be better prepared to enter their classrooms with confidence and a toolkit of effective teaching strategies.

## FY16 FACTS

Offered over **100** different professional development courses

More than **2,700** professional development course completers

**80** New CTE teachers successfully completed the New Teacher Induction program

Created **1,300** Canvas courses for **780** teachers; these courses enrolled **47,543** students; as part of these courses, over **1 million** modules were created and over **2 million** assignments and quizzes were completed

**320** COOL course completers

Registered **1,150** MSACTE attendees and received **120** proposals for the conference agenda

**24** Newly hired CTE administrators completed the new CTE Administrator's Academy program

# RESEARCH & EVALUATION

The RCU conducts research on a wide range of education-related topics by employing quantitative, qualitative, and mixed-methods designs to provide timely and useful analyses to state policymakers and educators. We also conduct robust internal evaluations of RCU programs and serve as external evaluators on initiatives and interventions for university and external partners.

## FY16 FACTS

Analyzed graduation-rate data for a four-year cohort of **15,470** Mississippi secondary students; results indicated a **positive correlation between CTE coursework and four-year graduation rates**

Collected **2,359** survey responses for a project gauging educators' perceptions of CTE in Mississippi

Conducted focus groups with **99** educators to discuss the impact of performance-based compensation in their schools

Analyzed **161** surveys from educators about the school-improvement process

Overall, **6,541** educators participated in RCU education-research projects

## Research Reveals Link Between CTE Participation and Graduation Rate

A strong body of research demonstrates that individuals who drop out of high school before obtaining their diploma have significantly diminished economic outcomes. As a potential antidote to dropping out of high school, CTE provides students a path to graduation by connecting their schoolwork to their college and/or career ambitions. By helping students link what they learn in school with their future goals, CTE courses can be a powerful tool for keeping students in school. To better understand the link between participation in CTE and high school outcomes, the RCU undertook a study to explore the graduation rates of CTE students. Researchers analyzed student-level data from over 15,000 Mississippi high school students in a four-year cohort that graduated in 2012 and found that those who took at least one CTE course graduated at higher rates compared to students who took no CTE courses. Students who participated in CTE had a four-year graduation rate of 83.9%, compared to a 75.5% rate for Mississippi high school students overall. The link between CTE participation and on-time graduation was most notable among Black students: Black CTE students had a four-year graduation rate of 82.9%, while the rate for Mississippi's Black students overall was 68.1%. By linking high school coursework with students' college and career goals, CTE holds promise for keeping students interested in school, thereby boosting graduation rates.

# SCHOOL INNOVATIONS

The RCU is passionate about supporting Mississippi school districts and ensuring that all students graduate ready for college, career, and life. Our work in this area is focused on school-level change that prompts rapid, substantial progress, rather than incremental improvements. Our school-innovations work is based on six foundational design principles: ready for college and career, require powerful teaching and learning, personalization, redefine professionalism, leadership, and purposeful design. These design principles, coupled with learner-centered strategies, create powerful learning experiences for all students.

## First Annual Innovative Institute Convenes Mississippi Educators

June 2016 marked the first annual Innovative Institute, hosted by Impact Learning and the RCU in partnership with the Mississippi Department of Education. Coordinated by the RCU, Impact Learning is a network of Mississippi schools and districts engaged in innovative practices promoting personalized, student-centered learning. The Innovative Institute, which took place over two days at the Mill Conference Center at Mississippi State University, was designed for educators and leaders who are involved or interested in innovative school strategies. Participating districts sent teams of educators, including administrators, counselors, teachers, and instructional support staff to attend the conference. Keynote speaker Jill Savely, principal of the Golden Triangle Early College High School, walked the 143 attendees from across Mississippi through her experience starting the state's first-ever early college high school. Over the course of two days, participants attended breakout sessions on topics including dual credit/dual enrollment, career academies, districts of innovation, and project-based learning. Attendees also received training on Impact Learning's six foundational design principles and discussed lessons learned from educators in districts already pursuing innovative school models.

## FY16 FACTS

Hosted the first annual Innovative Institute, which was attended by

**143** education stakeholders from across Mississippi

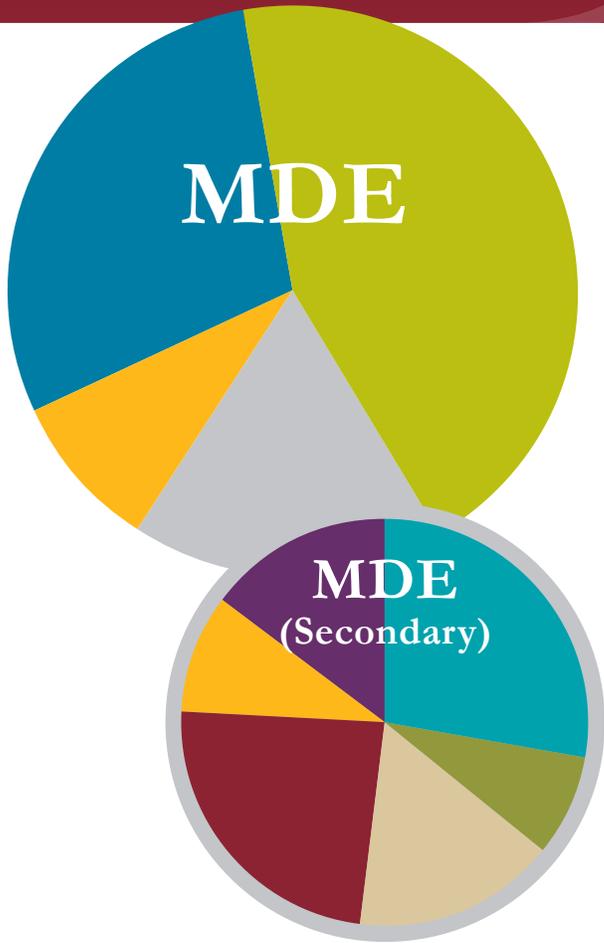
Supported the creation of **4** early college high schools, **8** career academies, and **3** districts of innovation

Visited **56** school districts to gather feedback on the school-improvement process

Conducted **19** focus groups with school and district leaders to gather feedback on the school-improvement process

Supported students and staff at the Golden Triangle Early College High School, where **61** students completed their freshman year

# FUNDING SUMMARY



## MDE

● Career and Technical Education .....	\$2,300,000
● Performance-Based Compensation .....	\$1,500,000
● Secondary (Total) .....	\$917,321
● Dropout/Grad Restructuring .....	\$257,106
● Innovative .....	\$217,434
● North Carolina New Schools .....	\$149,169
● School Improvement .....	\$135,000
● Curriculum Updates .....	\$86,249
● Counseling .....	\$72,361
● Assessment .....	\$471,428
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<b>MDE Total .....</b>	<b>\$5,188,749</b>

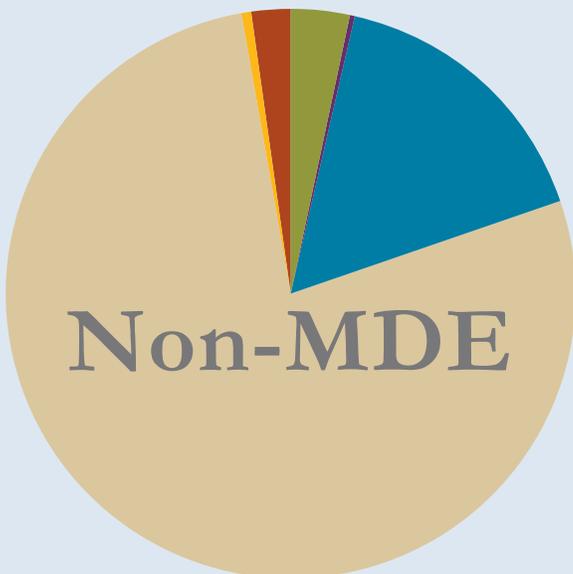
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## All Grants & Contracts Total

# \$6,348,013

## Non-MDE

● High Performance Leadership Institute (No-Cost Extension) .....	\$917,321
● Teacher Education for Rural Middle Schools .....	\$185,000
● MCCB .....	\$40,000
● MTES Training .....	\$23,400
● MS Teach Ag .....	\$8,000
● High-Performance Leadership Institute (Clarksdale Training) .....	\$4,999
<hr/>	
<b>Non-MDE Total .....</b>	<b>\$1,159,264</b>



# STAFF

## ADMINISTRATION & OPERATIONS

Julie Jordan	Director
Betsey Smith	Associate Director
Pam Stafford	Business Manager
Roo Gleim	Project Coordinator
Melissa Lockett	Project Coordinator
Kristi McIlwain	Administrative Assistant
Judy Middleton	Project Coordinator
Holli Mitchell	Project Coordinator
Mhaire Nickels	Receptionist

## ASSESSMENT

Sean Owen	Associate Research Professor
Nithya Arumugam	Programmer Analyst
Ashley Brown	Data Coach
Shelly Hollis	Project Manager
Bhanupriya Shanmugam	Project Manager
Michelle Taylor	Project Manager

## COMMUNICATION, RESEARCH, & EVALUATION

Kristen Dechert	Project Manager
Emile Creel	Managing Editor
Amanda Gronewold	Graphic Designer
Anne Hierholzer	Editor
Roslyn Miller	Research Associate III
Supriya Mishra	Data Coordinator
Dana Seymour	Project Manager
Gabrielle Barrientos	Graduate Research Assistant
Holly Holladay	Graduate Research Assistant
Silas Knox	Graduate Research Assistant

## CURRICULUM

Scott Kolle	Senior Research Associate
Mandy Clark	Instructional Design Specialist
Cathy Curtis	Instructional Design Specialist
Gayle Fortenberry	Project Manager
Kenny Langlely	Project Manager
Alexis Nordin	Research Associate III
Ellen Shaw	Project Manager
Denise Sibley	Senior Research Associate
Suzanne Tribble	Research Associate III
Jo Ann Watts	Senior Research Associate
Jolanda Young	Project Coordinator

## PROFESSIONAL LEARNING

Marilyn Bowen	Associate Research Professor
Lois Kappler	Project Manager
Tracy Brown	Project Manager
Suzanne Bean	Project Manager
Myra Gillis	Project Manager
Leanne Long	Project Manager
Theresa Wheeler	Research Associate II

## SCHOOL INNOVATIONS

Myra Pannell	Senior Research Associate
Amanda Tullos	Project Manager
Kristin Fuhrmann	Project Manager
Cindy Ming	Project Manager
Brad Skelton	Project Manager

# NATIONAL PRESENTATIONS

- **Brown, A.** (2015, October). *Development and administration of performance-based assessments for CTE students in Mississippi*. Paper presented at the meeting of the Consortium for Research on Educational Assessment and Teaching Effectiveness, Charleston, SC.
- **Brown, A., & Miller, R.** (2015, November). *Outside A, B, C, or D: Measuring student learning with performance-based assessments*. Presentation at the meeting of the Association for Career and Technical Education CareerTech VISION, New Orleans, LA.
- **Dechert, K., & Dechert, E.** (2015, November). *Communication and collaboration through cross-disciplinary technical-writing labs: Implications for career and technical education*. Paper presented at the annual convention of the University Council for Educational Administration, San Diego, CA.
- **Dechert, K., & Reid, D.** (2015, November). *Managerial and operational equity gaps across districts piloting performance-pay programs for teachers*. Paper presented at the annual convention of the University Council for Educational Administration, San Diego, CA.
- **Dechert, K., & Reid, D.** (2015, October). *Performance-based compensation and its effect on teacher morale and collegiality*. Paper presented at the meeting of the Consortium for Research on Educational Assessment and Teaching Effectiveness, Charleston, SC.
- **Loup, C., & Taylor, M.** (2015, November). *Broke*. Presentation at the meeting of the Association for Career and Technical Education CareerTech VISION, New Orleans, LA.
- **Owen, S.** (2015, October). *Determining indicators of graduation rates of CTE students and traditional academic students*. Paper presented at the meeting of the Consortium for Research on Educational Assessment and Teaching Effectiveness, Charleston, SC.
- **Owen, S., & Smith, B.** (2015, October). *Determining indicators of graduation rates of CTE students and traditional academic students*. Presentation at the National Dropout Prevention Network Conference, San Antonio, TX.
- **Reid, D., & Gadke, D. L.** (2016, February). *The right intervention: Using brief experimental analysis of reading fluency*. Poster presented at the Annual Convention for the National Association of School Psychologists, New Orleans, LA.
- **Reid, D., McGrew, S. L., Morton, R. C., Keller, D., Dorris, G., Devlin, J., Gadke, D. L., ...Henington, C.** (2016, January). *An investigation of academic engagement in a group setting for students with Autism Spectrum Disorder*. Poster presented at the Applied Behavioral Analysis International Autism Conference, New Orleans, LA.
- **Smith, B., & Skelton, B.** (2015, October). *Restructuring schools without blinders on*. Presentation at the National Dropout Prevention Network Conference, San Antonio, TX.
- **Taylor, M.** (2015, October). *Reaching new heights in business using technology resources*. Presentation at the annual meeting of the Southern Business Education Association, Kingsport, TN.
- **Taylor, M., & Bracey, P.** (2016, March). *Enhancing the 4 Cs through game use in business education classrooms*. Presentation at the Business Education Research Conference, Las Vegas, NV.
- **Taylor, M., & Bracey, P.** (2016, March). *Professional engagement with social media*. Presentation at the Business Education Research Conference, Las Vegas, NV.
- **Taylor, M., & Sibley, D.** (2015, November). *Get your game on*. Presentation at the meeting of the Association for Career and Technical Education CareerTech VISION, New Orleans, LA.



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