

Contact: Rachel Boon

**ANNUAL REPORT ON CENTER FOR EDUCATIONAL TRANSFORMATION AT THE
UNIVERSITY OF NORTHERN IOWA**

Action Requested: Receive the report and approve for submission to the Iowa General Assembly. The Board office recommends approval.

Executive Summary: In 2009, Iowa Senate File 470 created the Iowa Research and Development Center for Education Innovation at UNI (Renamed as the Center for Educational Transformation or CET in 2013). Annual reports are required for submission to the Iowa General Assembly to provide evidence of CET's work on pressing educational and teacher preparation issues in Iowa and nationally.

Key accomplishments of the past year include:

- Expanding the scope and reach of research projects that link theory to practice on critical issues such as trauma-informed practice for students with adverse childhood experiences, equitable and effective school, English Language Learner parental engagement, literacy and STEM education. CET projects have engaged 54 school districts statewide.
- Hiring a second Postdoctoral Fellow to provide additional research support and technical assistance to our funded researchers and CET Research Fellows assisted in the evaluation of the Greater Cedar Valley Alliance and Chamber's Leader in Me program.
- Hosting the 2017 UNI Education Summit to bring together educators and stakeholders from across the state to share new and innovative research and practical strategies for addressing critical issues affecting our schools.
- Publication of CET's second Research Brief, "High School Chemistry Teachers' Views of Engineering Inclusion Before and After a Professional Development Program."

Specific strategies for the year ahead include:

- Hiring a nationally recognized education scholar to direct the CET.
- Forming and engaging a National Advisory Council to address critical and emerging topics in PK-12 education, both in Iowa and nationally.
- Connecting UNI to state and national education research relevant to the field, including the formation of multi-disciplinary research teams.

The attached full report provides more detail on the specific mission, accomplishments and plans for the CET.

RESEARCH AND DEVELOPMENT CENTER ANNUAL REPORT

November 2017



Background

In 2009, Iowa Senate File 470 created the Iowa Research and Development Center for Education Innovation at UNI. The goals for this Center, as outlined in Senate File 470, were:

- To raise and sustain the level of all PreK-12 students' educational attainment and personal development through innovative and promising teaching practice.
- To enhance the preparation and professional competence of the educators in this state through collaborative inquiry and exchange of professional knowledge in teaching and learning.
- To focus on research that transforms teaching to meet the changing needs of Iowa's educational system.

In April 2013, UNI received a \$2 million award from the Carver Trust to establish the Center for Educational Transformation (CET), an entity intended to fulfill the mission of the Iowa Research and Development Center for Education Innovation. On October 24, 2013, the Board of Regents, State of Iowa approved the CET.

Vision

The Center for Educational Transformation (CET) seeks to redefine the face of educational research in Iowa and beyond. Founded upon the values of partnership and innovation, the CET responds to and is inclusive of all education stakeholders. This intrinsic connectivity allows the CET to become embedded in the Iowa educational landscape, so that partners not only “reach in” to access the CET's expertise, but the CET “reaches out” to promote best practices from research results and to connect partners with one another. This model enables national research-based educational transformations to be situated in a local context. The transformation is evidenced through the CET's commitment to learners, educators, and systems.

Mission

The Center for Educational Transformation (CET) serves as Iowa's PK-12 education research and development center supporting and conducting transformative education research, building collaborative relationships across Iowa, and sharing innovative, research-based best practices to inform policy and drive practice.

Executive Summary

During the past year, CET activities and deliverables advanced our purpose of transforming K-12 schools through producing and disseminating research and information to address current issues confronting schools across our state and nation. Key accomplishments include:

- Expanding the scope and reach of research projects that link theory to practice on critical issues such as trauma-informed practice for students with adverse childhood experiences, equitable and effective school, ELL parental engagement, literacy, and STEM education. CET projects have engaged 54 school districts statewide.
- Hiring a second Postdoctoral Fellow to provide additional research support and technical assistance to our funded researchers. In addition, our CET Research Fellows assisted in the evaluation of the Greater Cedar Valley Alliance and Chamber’s Leader in Me program—a leadership development program for students enrolled in schools across the Cedar Valley.
- Hosting the 2017 UNI Education Summit to bring educators and stakeholders from across the state to share new and innovative research and practical strategies for addressing critical issues affecting our schools.
- Publication of CET’s second Research Brief, “High School Chemistry Teachers’ Views of Engineering Inclusion Before and After a Professional Development Program.” The Brief reports findings from Sarah Boesdorfer’s 2013-15 CET-sponsored study and included recommendations for the professional development of science educators.

CET is itself in a period of transformation. Entering its sixth year of operation, CET is in a strong position to deepen the impact of its work to improve schools and educational systems by strengthening connections between research, practice, and the educators and stakeholders who can apply this knowledge to address problems. Specific strategies for the year ahead include:

- Hiring a nationally recognized education scholar to direct the CET. UNI is actively searching for a leading scholar in the field of education to provide strategic leadership and oversight of all functions and programs of CET. This person will also help CET expand the reach and impact of our research while helping to develop partnerships with other scholars who can help inform the Center’s work.
- Forming and engaging a National Advisory Council to address critical and emerging topics in PK-12 education, both in Iowa and nationally.
- Connecting UNI to state and national education research relevant to the field, including the formation of multi-disciplinary research teams to explore and develop strategies and practices for addressing critical and complex problems.

In the sections that comprise the full report, CET provides a detailed description of our progress in producing and disseminating scholarship, engaging our community of educators and stakeholders, and deepening the work of CET as a national voice for the transformation of schools. Appendices of the report summarize CET’s sponsored research projects to date, describe CET programs and events, and list members of CET’s councils.

RESEARCH

The CET supports and conducts research that transforms practice to meet the changing needs of Iowa’s educational system.

2017-18 Research Grants

In fall 2016, the CET released its annual Request for Proposals (RFP). This RFP sought proposals for \$15,000 Seed Grants for projects to take place in AY 2017-18 within a single Iowa classroom or school. Only Seed Grants were awarded for 2017-18.

For the 2016-17 RFP, the CET Research Council—a committee of seven Iowa education experts, including representatives of higher education, the Iowa Department of Education, the Iowa Board of Educational Examiners, and Iowa school districts¹—identified the following topics as “critical and emerging” issues in Iowa education worthy of CET support. Each proposal was required to address one or more of the following topical strands in a manner that could transform preK-12 education in Iowa and nationwide. Successful proposals made the case both for the importance of the chosen strand(s) to Iowa education and how the proposed project represented an appropriate, timely, and innovative approach to that strand/those strand(s).

Strand	Strand Name	Possible avenues of research in this strand:
A	Deeper Learning (also known as competency-based education, problem-based learning, innovative learning, personalized learning, etc.)	<ul style="list-style-type: none"> • various models of deeper learning in use in Iowa • the effects of deeper learning on academic and socioemotional outcomes • the role of instructional technology in deeper learning • describing the roles of teachers and administrators in schools using deeper learning
B	Teacher Preparation and Professional Development	<ul style="list-style-type: none"> • teacher candidate assessment • emerging teacher professional development models (e.g., microcredentialing) • the Iowa Teacher Leadership and Compensation (TLC) System • teacher performance assessments (e.g., Praxis, EdTPA)
C	Instructional Technology	<ul style="list-style-type: none"> • 1:1 • teacher training in instructional technology • pedagogy and instructional technology • instructional technology and student achievement

¹ Members of the CET Research Council for 2017-18 included:

- Dr. Robert Boody, University of Northern Iowa
- Dr. Anne Estapa, Iowa State University
- Dr. Jason Harshman, University of Iowa
- Dr. Ann Lebo, Iowa Board of Educational Examiners
- Dr. Trace Pickering, Cedar Rapids Community School District
- Dr. Jay Pennington, Iowa Department of Education
- Dr. Anthony Voss, Hudson Community School District

Strand	Strand Name	Possible avenues of research in this strand:
D	Chronic Truancy and Absenteeism	<ul style="list-style-type: none"> • new interventions to decrease or prevent absenteeism and truancy • the nature of chronic truancy and absenteeism in Iowa, especially in rural settings
E	Multitiered Systems of Support (MTSS)	<ul style="list-style-type: none"> • interventions at the various tiers of support • assessments used to move students between the various tiers of support • effects of MTSS on academic outcomes • effects of professional development on MTSS implementation <p>Studies can focus on literacy and other academic skills or student behavior and mental health</p>

In addition, those submitting proposals for 2017-18 CET Research Grants were required to include a plan for the use of one or more undergraduate research assistants in the project activities. This requirement reflects the CET’s goal of providing rich research experiences for undergraduate students. CET promotes undergraduate engagement in original research for several reasons: (1) to help undergraduate education majors understand how knowledge is created in education; (2) to develop students’ research skills that can be integrated into their own future classrooms; (3) to expose non-education majors to education as an exciting field of inquiry, and (4) to provide the CET Fellows with another pool of potential project assistants.

This requirement builds on an undergraduate research pilot program that was directed by Dr. Sarah Vander Zanden of UNI’s Department of Curriculum and Instruction and funded by the CET in summer 2016. Dr. Vander Zanden utilized undergraduate researchers in several aspects of a summer literacy program in an urban district. To query the self-reported knowledge gains in conducting and applying research as a result of their participation in an original research project, CET sent an open-ended survey to all undergraduate research assistants at the conclusion of their research project. The results of the survey suggest that undergraduate research participants observed the benefits of research as a systematic mode of inquiry. Sample comments are as follows:

“Research is a way to learn more in depth about something. You may have a belief or understanding about something, and you do research to prove it true or false or something in between. I learned it is messy and doesn't always bring black or white answers.”

“Based on this experience, research, to me, is a carefully conducted observation over time while testing a claim or an idea. It is to gauge an overall better understanding of the observed subjects and to better understand the general population through the specific observed subjects.”

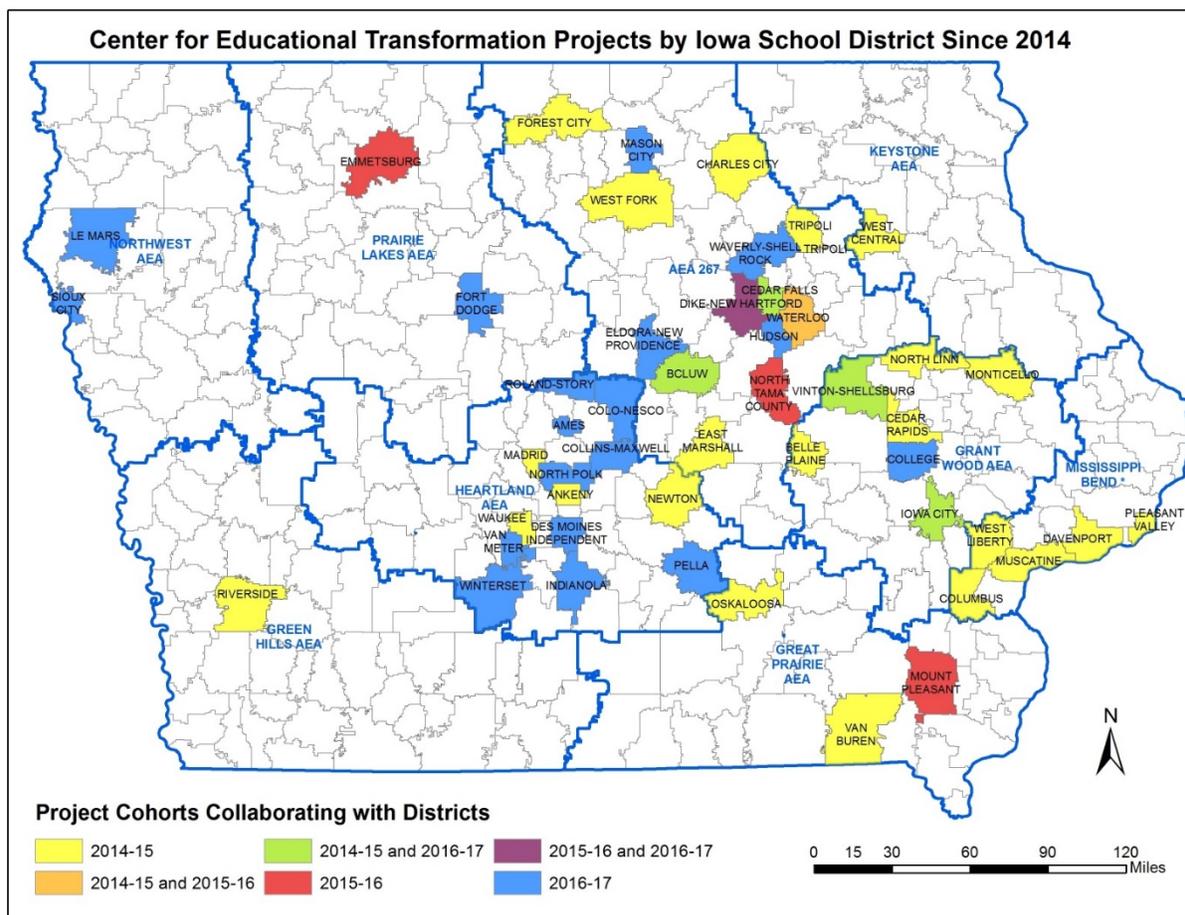
“Research is testing ideas and strategies by implementing them and observing and recording your observations. The data from these observations is then analyzed to from a hypothesis as to if and/or how the strategies and ideas worked as well as possibly coming up with a new idea that may work better based on the results of your observations. Research can be used to

better society in many ways from finding medicines to treat diseases to finding the best way to educate our children.”

The 2017-18 RFP process drew nine proposals, including at least one from each Regent university. The CET Research Council reviewed these proposals and funded three of them—one from each Regents institution. In addition, one UNI-based project was renewed (Mason Kuhn’s “Enhancing the ‘Argument-Based Strategies for STEM-Infused Science Teaching’ [ASSIST] Approach Through Dialogic Teacher Feedback”).

Project Name, Investigator	Strand(s)	Partner Districts
What’s Your Excuse? Chronic Absenteeism in a Rural Majority-Minority High School <i>Ain Grooms, U of I</i>	<ul style="list-style-type: none"> • Chronic truancy and absenteeism 	<ul style="list-style-type: none"> • Columbus Community CSD
Making Writing a Digital, Participatory Process <i>Emily Howell, ISU</i>	<ul style="list-style-type: none"> • Teacher preparation and professional development • Instructional technology 	<ul style="list-style-type: none"> • Ames CSD
Investigating the Effectiveness of Tier II and Tier III Mental Health Supports in a Rural School District <i>Nicole Skaar, UNI</i>	<ul style="list-style-type: none"> • Multitiered Systems of Support (MTSS) 	<ul style="list-style-type: none"> • North Mahaska CSD • Oskaloosa CSD

Figure 1: Map of Districts Involved in CET Projects, 2014-17



Each CET project is required to work with at least one PK-12 partner. Including the 2017-18 CET projects, 54 Iowa school districts have participated in a current or completed CET project. Figure 1 above provides a visual overview of the school districts involved in CET programs and partnerships from 2014-17.

Postdoctoral Fellows Program



The CET Postdoctoral Fellows Program expanded research opportunities for two emerging scholars and provided research support to statewide CET projects and research initiatives. The CET recruited postdoctoral candidates from top research universities with the goal of providing CET projects with greater resources and support. In addition, both Postdoctoral Fellows were intensively involved with the Leader in Me evaluation (see Community Collaboration subsection in the Connections and Partnerships section below).



Dr. Matthew Green (Ph.D., UNC-Chapel Hill, 2015; pictured above left) finished his term as the first CET Postdoctoral Fellow on August 15, 2017. He is currently Assistant Professor of Educational Curriculum & Instruction at the University of Louisiana-Lafayette.

Dr. Tšooane Molapo (Ph.D., University of North Dakota, 2017; pictured below left) served as the second CET Postdoctoral Fellow from January-June 2017 and is

currently a Program Assistant for UNI Institutional Research & Effectiveness and an adjunct faculty member in the Department of Educational Psychology and Foundations, UNI College of Education.

CONNECTIONS AND PARTNERSHIPS

The CET builds and leverages partnerships across the state to inform decision-makers and drive policy grounded in research results.



Ed Perspectives

The CET’s Ed Perspectives events invite Iowa educators, education stakeholders, and Iowa teacher education faculty to the UNI campus. By bringing in national experts to speak with our Center partners, we can inform the state about a variety of national educational perspectives and issues.

One Ed Perspectives event was held in 2016-17. On February 3, 2017, Gerald Campano of the University of Pennsylvania Graduate School of Education (pictured at left) spoke on the topic, “Critical Action Research with Educators, Families, and Youth: Expanding Circles of Solidarity.”

Ed Research Afternoons

At the Ed Research Afternoons events, a UNI faculty member or CET Fellow presents on a research project, methodology, or topic. The Ed Research Afternoons aim to build research capacity and collegiality among UNI education faculty. They are a collaboration between the CET and the Department of Educational Psychology and Foundations.

At right: Panelists at the Undergraduates in Education Research event, from left: Alex Oberle, Sarah Vander Zanden, Alyssa McKeone, Sarah Diesburg



Date	Presenter	Topic
September 27, 2016	Mark Jacobson, Statistical Consulting Center, UNI	Statistical Software Overview
November 3, 2016	Mitch Avery, Center for Social and Behavioral Research, UNI	Using Surveys in Data Collection
November 27, 2016	Various UNI faculty (Sarah Diesburg, Computer Science; Adam Feldhaus, Math; Mason Kuhn, Curriculum & Instruction; Alex Oberle, Geography; Sarah Vander Zanden, Curriculum & Instruction) and undergraduates (Kailyn Bettle, Elyse Borchers, Alyssa McKeone, Coved Oswald)	Undergraduates in Education Research (see photo above)
March 28, 2017	Mollie Appelgate, Iowa State; Danielle Cowley, UNI; Matthew Green, CET	Qualitative Data Analysis Software: A User Panel

March 29, 2017	Mary Losch, Center for Social and Behavioral Research, UNI	What is a Survey?
April 5, 2017	Jill Wittrock, Center for Social and Behavioral Research, UNI	Dimensions of a Survey

2017 Education Summit

The original vision of the CET called for its participation in “innovation sessions.” One such Innovation Session is the semi-annual UNI Education Summit. The CET co-sponsored the 2017 Summit, entitled *Inclusive Praxis for 21st Century Education: Advocacy, Challenges, and the Public Good*, in partnership with the Richard O. Jacobson COE Strategic Program Endowment. It was held November 6-7 at UNI. Education stakeholders from across the Midwest--including teachers, teacher-leaders, principals, superintendents, higher education faculty, legislators, and UNI students—attended.



Keynote speakers included LeDerick Horne and Lisa Delpit. Mr. Horne (pictured above left) is a spoken-word poet and disability advocate. Dr. Delpit (pictured below left), Felton G. Clark Distinguished Professor of Education at Southern University, is an expert on multicultural education and author of *Other People’s Children: Cultural Conflict in the Classroom* and *“Multiplication is for White People”: Raising Standards for Other People’s Children*.



Breakout sessions encompassed four strands: community engagement and partnerships, diversity and cultural competence, personalized and blended learning, and social-emotional learning. Presenters represented institutions of higher education in Iowa and elsewhere, Iowa school districts and AEAs, and education policy organizations.

Community Collaboration

The CET collaborates with entities outside of public education. One such collaboration is with the Greater Cedar Valley Alliance & Chamber, in order to evaluate the impact of The Leader in Me, a leadership program the Alliance & Chamber supports in Cedar Valley schools. As part of this evaluation, the CET conducted student surveys, student focus groups, teacher surveys, and teacher and principal interviews in 11 schools in Waterloo CSD. In September 2017, the CET submitted a final report to the Alliance & Chamber, detailing the findings of that data collection in terms of six evaluation questions on various aspects of the implementation of The Leader in Me.

DISSEMINATION

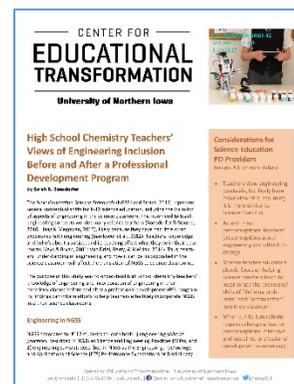
The CET shares innovative and best practices grounded in research to inform and drive policy and practice.

Research Brief

In June 2017, the CET published its second Research Brief. This 6-page brief, entitled “High School Chemistry Teachers’ Views of Engineering Inclusion Before and After a Professional Development Program,” reports findings from Sarah Boesdorfer’s 2013-15 CET-sponsored study. It includes the following recommendations for science education professional development providers:

- Teachers view engineering positively, but likely have naïve view of it, assuming it is more similar to science than it is.
- As with most preconceptions, teachers’ preconceptions about engineering are difficult to change.
- Science teacher educators should focus on helping science teachers learn to incorporate the processes/skills of “defining problems” and “optimization” into their classroom.
- When curriculum reform requires changing teacher preconceptions, intensive and sustained professional development is necessary.

The Brief is available on the CET web site at uni.edu/cet and was printed for sharing at conferences and events.



E-Connections

In 2016-17, the CET continued to build its electronic presence. Informational articles and announcements were posted to the CET Facebook page several times a week. These posts include: CET opportunities (e.g., RFPs, job openings, events) mentions of CET Fellows in the media, Iowa education news, information on the state of PK-12 education in the U.S., resources on doing and understanding education research, information on sources of funding for education research, and findings of recent education research.

The CET Twitter account (@IowaCET, #IowaCET) was used to promote and engage participants in Ed Perspectives meetings, the Ed Summit, and other CET programs.

Research Project Dissemination

Many previously-funded CET projects came to fruition over the past year. These projects carried out the following dissemination activities since October 10, 2016 (see tables below):

CET Research Project Dissemination, 10/16-10/17

Project Name, Investigator(s)	Articles
<p>Using Mathematically-Focused Text Messages to Improve Connections Between Linguistically-Diverse Parents and Their Child’s Classroom Learning</p> <p><i>Mollie Appelgate and Christa Jackson, ISU</i></p>	<ul style="list-style-type: none"> • ISU News Service (11/14/16): ISU Researchers Want to Break Down Language Barriers with Math and Text Messages²
<p>Enhancing the “Argument-Based Strategies for STEM-Infused Science Teaching” (ASSIST) Approach Through Dialogic Teacher Feedback</p> <p><i>Mason Kuhn, UNI</i></p>	<ul style="list-style-type: none"> • Innovations in Science Teacher Education (2017): Introducing the ASSIST Approach to Preservice STEM Teachers • Science & Teaching (1/2017): Methods and Strategies: Using Argument-Based Inquiry Strategies for STEM Infused Science Teaching
<p>We Can! Testing a Trauma-Informed Care Training in Iowa Elementary Schools</p> <p><i>Armeda Stevenson Wojciak and Carol Klose Smith, U of I</i></p>	<ul style="list-style-type: none"> • Iowa Ideas Magazine, Cedar Rapids Gazette (4/24/17): Building Resiliency Against Adverse Childhood Experiences³

² <http://www.news.iastate.edu/news/2016/11/14/mathtexts>

³ www.thegazette.com/iowaideas/stories/k-12-education/building-resiliency-against-adverse-childhood-experiences-20170424

CET Research Project Dissemination, 10/16-10/17: Presentations at Iowa Conferences

Project Name, Investigator(s)	Presentations at Iowa Conferences
<p>Using Mathematically-Focused Text Messages to Improve Connections Between Linguistically-Diverse Parents and Their Child’s Classroom Learning</p> <p><i>Mollie Appelgate and Christa Jackson, ISU</i></p>	<ul style="list-style-type: none"> • ISU 4U Promise Mini-Conference (1/20/17): Using Mathematically-Focused Texts in Kindergarten
<p>Student Voice for School Change</p> <p><i>Gale Seiler and Julio Cammarota, ISU</i></p>	<ul style="list-style-type: none"> • Iowa Association of Alternative Education (4/20/17): Learning from Youth Through YPAR
<p>Literacy Through Science</p> <p><i>Beth Van Meeteren et al., UNI</i></p>	<ul style="list-style-type: none"> • Iowa Math and Science Conference (10/16): Creating an Integrative STEM and Literacy Environment
<p>We Can! Testing a Trauma-Informed Care Training in Iowa Elementary Schools</p> <p><i>Armeda Stevenson Wojciak and Carol Klose Smith, U of I</i></p>	<ul style="list-style-type: none"> • Iowa School Counselor Association (11/8/16): Adverse Childhood Experiences: What is it? What is the impact? What can we do? • Iowa Governor’s Conference on Public Health (4/11/17): The Importance of Implementing Trauma-Informed Practices in Schools in Iowa • Prevent Child Abuse Iowa Annual Conference (5/3/17): Working With Your Local Schools • Iowa Reading Research Center’s Practitioners and Researchers Overcoming Problems of Literacy (PROPeL) Initiative (5/18/17): Adverse Childhood Experiences: What is it? What is the impact? What can we do?

CET Research Project Dissemination, 10/16-10/17: Presentations at National and International Conferences

Project Name, Investigator(s)	Presentations at National and International Conferences
<p>Improving Intervention Implementation Using Data-Based Intervention</p> <p><i>Allison Bruhn, U of I</i></p>	<ul style="list-style-type: none"> • Association for Positive Behavior Support Conference (3/17): Data Rich, but Information Poor? Not Anymore! • Council for Exceptional Children Convention & Expo (4/19-22/17): <ul style="list-style-type: none"> ○ Improving Intervention Implementation Using Data-Based Individualization ○ Continue, Discontinue, or Adapt? Data-Based Decision Making for Behavior
<p>Exploring Models of Bicultural Parent Engagement to Address Academic Achievement for Immigrant Youth</p> <p><i>Carolyn Colvin, U of I</i></p>	<ul style="list-style-type: none"> • Literacy Research Association Conference (12/2/17): Exploring the Diversities of Truth: Stories from Immigrant Parents and Teachers
<p>Sustainable Inclusive Reform: A University-School District Partnership for Equitable and Effective Schooling</p> <p><i>Danielle Cowley, Deborah Gallagher, and Amy Petersen, UNI</i></p>	<ul style="list-style-type: none"> • Disability Studies in Education Conference (6/17): A Sentimental Education: Insights for Inclusive Reform from a University/School District Partnership
<p>Motion Virtual Manipulatives in the Elementary Math Classroom</p> <p><i>Sarah Diesburg and Adam Feldhaus, UNI</i></p>	<ul style="list-style-type: none"> • Rural Education National Forum (10/16): Motion Virtual Manipulatives and Elementary School Mathematics
<p>Enhancing the “Argument-Based Strategies for STEM-Infused Science Teaching” (ASSIST) Approach Through Dialogic Teacher Feedback</p>	<ul style="list-style-type: none"> • National Science Teachers Association (4/17): A Response to Intervention Model for Argument-Based Inquiry: The Importance of Using Student Writing to Find Out What They Really Know

Project Name, Investigator(s)	Presentations at National and International Conferences
<p><i>Mason Kuhn, UNI</i></p> <p>Student Voice for School Change</p> <p><i>Gale Seiler and Julio Cammarota, ISU</i></p>	<ul style="list-style-type: none"> • National Association for Research in Science Teaching (4/17): The Relationship Between Dialogic Teacher Feedback and Student Outcomes on Standardized Science Assessment • Conference for Current and Aspiring Educators of Color and American Indian Educators, “Voices Heard: Transforming Education Equity” (8/17): Student Voice for School Change Project: Youth Participatory Action Research
<p>Literacy Through Science</p> <p><i>Beth Van Meeteren et al., UNI</i></p>	<ul style="list-style-type: none"> • Literacy Research Association Conference (11/16): Literacy Through Science: Literacy Activities Observed During K-1 Science Activities • Association for Science Teacher Education (1/17): What is the Effect of an Integrative STEM Curriculum on Literacy Development? • National Science Teachers Association (3/17): Early Childhood Science Experiences: Everyday STEM for Every First Grader
<p>We Can! Testing a Trauma-Informed Care Training in Iowa Elementary Schools</p> <p><i>Armeda Stevenson Wojciak and Carol Klose Smith, U of I</i></p>	<ul style="list-style-type: none"> • Society for Prevention Research (6/1/17): Building Resilience in Elementary Schools: Pilot Data from a School-wide Intervention

Financial Report

UNI provided \$384,728 in support for CET staffing, supplies, and services. The remainder of the CET's funding was from external grants and contracts. The majority of these resources were directed to the CET's 2016-17 Research Grant program.

The CET works in collaboration with the UNI Office of Research and Sponsored Programs and the UNI Foundation in pursuit of strategic grant opportunities, contracts, and external foundation support to advance its mission.

Future Directions

Beginning its fifth year, the CET has completed the initial phase of its operation, providing a strong foundation and meeting the goals laid out in Iowa Senate File 470. In spring and summer 2017, UNI began a process of deepening the work of the CET and moving into a more mature phase of research and development. To that end, specific strategies include:

Hiring a nationally-recognized educational research scholar as Director for the CET. In order to more effectively carry out the CET’s mission as a research and development center, UNI is in the process of hiring a new Director who will be an education researcher with strong scholarly credentials and extensive experience working in collaboration with schools and districts. A position description has been created and posted on UNI’s Jobs site and many national higher education employment sites. Applicants must possess a doctoral degree and a strong record of research, teaching, and service, including research carried out in partnership with schools and districts and publications on research-practitioner partnerships. A search committee has been formed. Applications are due October 31, 2017. Meanwhile, Dr. Gaëtane Jean-Marie, Dean of the College of Education, is acting as Interim Director of the CET.

Forming a National Advisory Council (NAC). The CET is intended both to address critical and emerging topics in PK-12 education in Iowa, and to contribute to the national education research and practitioner conversations on those topics. Its newly-formed NAC will identify promising areas of research, development, and dissemination in the field of PK-12 education in the U.S. to which the CET may be positioned to contribute.

The NAC will also comprise an evaluation task force to work with UNI administration to regularly assess the CET Director’s performance and the Center’s effectiveness and progress toward its strategic goals, including national impact and prominence. To date, 11 prominent education researchers from across the country have agreed to serve on the NAC:

Name	Title	Organization or Institution
Dr. Terry Ackerman	Lindquist Chair	ACT, Inc.
Dr. Kenneth Coll	Dean, College of Education	University of Nevada, Reno
Dr. Sarah Diem	Associate Professor, Educational Leadership and Policy Analysis	University of Missouri
Dr. André Green	Associate Dean, College of Education and Professional Studies	University of South Alabama
Dr. Lisa Hooper	Professor, Clinical Mental Health Counseling	University of Louisville

Dr. Diane Horm	George Kaiser Family Foundation Endowed Chair of Early Childhood Education; Founding Director, Early Childhood Education Institute	University of Oklahoma
Dr. Sonya Horsford	Associate Professor, Education Leadership; Research Associate, Institute for Urban and Minority Education	Teachers College, Columbia University
Dr. Amy Hutchison	Associate Professor, Literacy and Reading	George Mason University
Dr. Ann O’Connell	Director, Research Methodology Center; Professor, Educational Studies	Ohio State University
Benjamin Riley, JD	Founder and Executive Director	Deans for Impact
Dr. Natalie Tran	Chair, Department of Secondary Education; Professor, Educational Leadership	California State University-Fullerton

More deliberately connecting UNI to state and national education research relevant to the field. Going forward, the CET will strategically serve as a connector for other faculty at UNI and local universities, in Iowa schools and districts, and educational agencies and organizations locally, statewide, and nationally. For example, the CET could coordinate an interdisciplinary faculty group to engage in collaborative projects to consolidate and improve data collection procedures in Iowa school districts, in order to foster long-term school improvement through the use of scientifically-designed measurement, reliable data collection, and appropriate data analysis. In addition, the CET will align more strongly with existing preK-12 grants, centers, and initiatives on campus, to leverage and supplement existing efforts. With proposed work such as this, the CET has the potential to reach across traditional disciplinary, departmental, and college boundaries to work with faculty in addressing important problems and achieving common goals, collaboratively pursue grants and engage in research publications, and make significant contributions to inform research, policy, and practice at the state and national levels through research initiatives.

In conclusion, UNI is dedicated to a vision for the CET to impact preK-12 student learning and teacher effectiveness across the state and to inform the national education landscape. UNI continues to support the vision of the CET as a new, original model in which the state can both address its research and development needs and engage in projects of national significance utilizing the strategies of field-based and action-oriented research, yielding innovative educational practices and effective policy analysis. We believe UNI is now well-positioned to build on the strong foundation that has been created and further elevate the CET’s research and development enterprise.

Appendix A. CET Research Projects by Subject Area (to date)

ELL Parental Management

Using Mathematically-Focused Text Messages to Improve Connections between Linguistically-Diverse Parents and Their Child’s Classroom Learning

Researchers: Mollie Appelgate and Christa Jackson, Iowa State University

District Partner: TBD

Project Duration: 2016-17

Abstract: Iowa is diversifying--culturally and linguistically. In schools, this presents a challenge for teachers, the vast majority of whom are mono-linguistic English speakers. Teachers want to work closely with parents and view them as partners in a child's learning, but this becomes more difficult when teachers do not speak the same language as parents and teachers may have multiple home languages represented in their classrooms.

In literacy, parents have long been viewed as important partners, particularly in growing children's reading skills. However, this same emphasis on the value of a parent's role has not been true for mathematics. Parents are not encouraged to "talk mathematics" with their child in the same way they are encouraged to read every day with their child.

This study aims to address both of these issues by improving the connection between parents and teachers through the use of mathematically-focused text messages based on classroom learning and parents' funds of knowledge. The study used texting via cell phones to communicate with kindergarten parents about their child's mathematical work in class, as well as how to build upon mathematical talk at home.

Using a sequential transformative approach, this study used mixed methods to answer the following questions:

1. How do we create relevant and useful mathematically-focused text messages that build on parents' funds of knowledge and create stronger connections to school?
2. How does mathematically-focused texting improve connections between teachers and parents?
3. How can texts to parents be used to build on students' mathematical thinking?

Exploring Models of Bicultural Parent Engagement to Address Academic Achievement for Immigrant Youth

Researcher: Carolyn Colvin, University of Iowa

District Partners: Columbus, West Liberty

Project Duration: 2016-17

Abstract: Rural school districts in Iowa have been transformed by the arrival of immigrant families. Both school faculty/administrators and immigrant parents are challenged in the way they must learn to effectively communicate across differences in language and culture. Parent-teacher communication most often takes place around the institutionalized activities of parent-teacher conferences as it is these points of contact that provide opportunities to share and discuss information concerning academic progress for the children of immigrant parents. Extensive research exists that documents mainstream parents' involvement in schools (for example, see Epstein, 1986; Epstein Dauber, 1991). More recently, researchers have begun to examine parent involvement for immigrant parents, specifically Latino parents (Valdez, 1997). However, parent involvement models tend to reflect dominant mainstream practices for how parents can serve as advocates for their children. Notably, in much of the existing research, parent voices and perspectives are absent.

For this study, four elementary teachers, four Spanish-speaking parents, and four parents from Laos were recruited to explore through interviews how each participant understood the purposes of and prepared for parent-teacher conferences. Questions guiding this research included the perceived purposes of parent-teacher conferences, conference preparation, and participants' perceptions of conferences as sites for effective communication. Analysis will occur using grounded theory (Corbin & Strauss, 1998). The outcome of data analysis will inform a model for bicultural parent engagement for possible implementation at the local school site where I am involved. A parent engagement model might be applicable for other school sites where large numbers of immigrant/recently-arrived families reside.

Equitable and Effective Schooling

Improving Individualized Implementation Using Data-Based Individualization

Researcher: Allison Bruhn, University of Iowa

District Partner: Iowa City

Project Duration: 2016-17

Abstract: Schools across the country, including in the state of Iowa, are being called to account for student progress in social-behavioral skills as well as academic skills. For students with or at risk for disabilities who are receiving interventions, monitoring progress on a frequent-ongoing basis is imperative to determining their response and making accurate decisions accordingly.

In the behavioral domain, the data-based decision-making process can be cumbersome and complicated because most educators are not trained in it (Wayman, 2005), professional development on data use is often inadequate or non-existent (Massell, 2001), and there are no behavioral standards with accompanying decision rules like in academic progress monitoring. For teachers who are not trained in using data to make individualized decisions, data mentors or coaches with expert-level knowledge have been recommended (Nichols & Singer, 2000).

This project will address the critical need for data-based decision making support for teachers intervening with students who have challenging behavior. This will be done with an empirically-supported, technology-based intervention, SCORE IT, which will be used to improve students'

self-regulatory behavior. We will provide a series of high-quality professional development sessions related to implementing intervention, analyzing behavioral progress monitoring data, and making decisions on an ongoing basis. Teachers will then implement strategies learned from the PD with participating students. Then, student outcomes will be measured, as will teacher perceptions of training, implementation, and outcomes.

Sustainable Inclusive Reform: A University-School District Partnership for Equitable and Effective Schooling

Researchers: Danielle Cowley, Deborah Gallagher, and Amy Peterson, University of Northern Iowa

District Partner: Mount Pleasant

Project Duration: 2015-17

Abstract: A team of UNI faculty and 35 educators from the Mount Pleasant Community School District have taken up the urgent and critical task of becoming a more inclusive school district in order to ensure access and progress in the general education curriculum for *all* students. The faculty team has established an innovative Inclusive Education Teacher Preparation program at UNI for this cohort and will now begin a collaborative, participatory research project to examine the process and results of partnering for inclusive school reform.

Using an action-research framework and mixed methods from both qualitative and quantitative traditions, we will examine research questions related to:

- building capacity in educators as they work toward inclusive change;
- planning for systematic, inclusive restructuring; and
- the impact of inclusive policies and practices on educational outcomes for all students.

The proposed project addresses needs related to innovative research, policy, and practice. Anticipated outcomes include:

- improving the knowledge, skills, and dispositions of inclusive educators;
- addressing the shortage of special education teachers in Iowa;
- improved Iowa compliance with LRE;
- narrowing the significant achievement gap experienced by Iowa's students with disabilities; and
- creating and evaluating a sustainable process for inclusive change.

What's Your Excuse?: Chronic Absenteeism in a Rural Majority-Minority High School

Researcher: Ain Grooms, University of Iowa

District Partner: TBD

Project Duration: 2017-18

Abstract: Chronic absenteeism is defined as missing 10% or more of a school year--the equivalent of 18 days--for excused or unexcused reasons (Chang & Romero, 2008). Chronic absenteeism, by definition, includes chronic truancy, which refers to frequent unexcused absences. Chronic absenteeism can be a barometer of academic success, future dropout, and job earning potential (Chang & Romero, 2008; Gottfried, 2011). Under guidelines established by the Every Student Succeeds Act (ESSA), states must report chronic absenteeism rates and can receive funding to address the concern. ESSA guidelines also require that, in addition to reporting test scores, states use a school quality indicator to measure school performance; states may choose to use their chronic absenteeism rates as that indicator.

Iowa is becoming more diverse, with Hispanic/Latino students comprising 10% of the state's total preK-12 school population (Iowa Department of Education, 2016). Data show high absentee rates among Hispanic high school students nationwide (21%), and the Hispanic/Latino population is growing substantially in the state's rural areas. Thus, this study will use a rural high school with a significant Hispanic population as its research site.

This research will investigate how rural school personnel, often with limited resources and expertise, are addressing chronic absenteeism, and how collaborative approaches with community organizations are being implemented to reduce chronic absenteeism and improve daily school attendance. This research will provide a practical understanding of how schools can find solutions for absenteeism and build coalitions with community organizations to address issues affecting students, including absenteeism.

Student Voice for School Change

Researchers: Gail Seiler and Julio Cammarota, Iowa State University

District Partner: Ames

Project Duration: 2016-17

Abstract: Mirroring national and statewide trends, students of color in the Ames Community School District experience disparities in achievement and overrepresentation in disciplinary actions. In an effort to understand and change these differential outcomes, a pilot study will be undertaken in which Youth Participatory Action Research (YPAR) will be employed with a cohort of middle school students in Ames.

YPAR is a process of inquiry that privileges student voice and creates opportunities for young people to study their own social contexts and learn how to improve conditions and create greater equity within them. With guidance from university researchers, youth will become investigators and conduct research using standard social science research techniques, and then draw upon creative expressive forms such as spoken word, poetry, visual arts, music, and theater to present their findings.

This research will investigate the impact that student voice can have on school policy and practices, particularly as it relates to the educational experiences of students of color, as well as its impact on the students themselves, as evidenced in their engagement and success in school. Despite the precarious position of students of color in our educational system, rarely do we draw on their voices, knowledge, and experiences to address the issues that affect them. This research

will attempt to counter that and to extend the use of a YPAR framework to middle school students in a predominantly White school.

Investigating the Effectiveness of Tier II & Tier III Mental Health Supports in Two Rural School Districts

Researcher: Nicole Skaar

District Partners: Oskaloosa, North Mahaska, and Great Prairie AEA

Project Duration: 2017-18

Abstract: Approximately one-fifth of students experience mental health difficulties and cannot fully benefit from the available academic and extracurricular opportunities. Students with mental health difficulties experience a variety of negative outcomes, including lower academic achievement and disengagement from school. Teachers and administrators are also impacted as they must spend time supporting student mental health and behavior, which leads to less time focused on academic instruction and other positive interactions.

School-based mental health programs are being implemented in schools across the country through partnerships with community-based mental health providers; however, rural schools are at a disadvantage because they are located in communities with reduced access to community-based mental health providers. Existing school-based mental health programs, which were developed in large cities, are thus difficult to replicate in rural schools.

This project aims to supplement existing universal-level supports by developing and implementing mental health assessment and intervention supports at Tier II and Tier III within two rural school districts in Iowa. We will assess the effectiveness of the program through both quantitative and qualitative measurement of both student- and systems-level variables. Student-level variables will include mental health measures, school behavior, and academic achievement. School-level variables will include amount of time administrators and counselors spend working through crises with students and stakeholder acceptability of program elements.

Literacy

Making Writing a Digital, Participatory Process

Researcher: Emily Howell, Iowa State University

District Partner: Ames

Project Duration: 2017-18

Abstract: This study is focused on developing professional development (PD) for upper-elementary school teachers and investigating how it can be integrated into teachers' instruction to improve their ability to make writing a more digital, participatory process.

Theoretical perspectives pertaining to technology use in education specify that this use should emphasize students creating rather than consuming information from media sources and that this creation process should be social. However, recent research on preadolescents has shown that while these students are using technology more in schools, they are often using it to consume rather than create information.

Further, literacy teachers, in particular, have identified barriers to integrating technology effectively into their curriculum. Thus, there is a critical need for PD that helps teachers more effectively integrate technology into their classrooms.

The objective of this study is to develop a PD model that helps teachers engage students in writing as both a digital and social process. The essential elements studied in this model include the following:

- sustained PD including the gradual release of teacher inquiry,
- writing as a social practice, and
- the use of digital tools to engage students in writing.

The researcher will study the implementation of this PD model in summer institutes and in teacher classrooms through both qualitative and quantitative data.

Instructional Coaching in Iowa: An Exploration of Practices and Perceptions

Researchers: Lindsay Woodward and Jennifer Thoma, Drake University

District Partners: Colo-NESCO, Collins-Maxwell, Fort Dodge, Indianola, Le Mars, North Polk, Roland-Story, Sergeant Bluff-Luton, Sioux City, Van Meter, Vinton-Shellsburg, Waverly-Shellrock, Winterset, and Woodbury Central

Project Duration: 2016-17

Abstract: In an effort to raise student achievement and utilize the expertise of Iowa’s top teachers, the Iowa Legislature passed an education reform package in 2013, from which the Teacher Leadership and Compensation (TLC) system was developed. As of March 2016, every school district in Iowa was approved to implement a teacher leadership system as part of TLC (Rasey & Slater, 2016). Most new teacher leaders receive professional development along with increased responsibilities and compensation. One such responsibility is serving as an instructional coach. Moving forward, it is important to understand the different ways instructional coaching, in all of its forms, has been implemented across the state to determine how districts and schools use coaching positions in their unique contexts.

This study explores the types of instructional coaching provided across Iowa, how coaching roles are supported and how teachers transition to teacher leaders, how districts define successful coaching, and how coaches support various initiatives implemented in their schools.

Additionally, exploring how instructional coaches support teachers’ use of instructional technology is especially relevant, as Iowa districts continue to invest in digital devices for students. Finally, this study seeks to describe subject-specific coaching, such as literacy coaching (McKenna & Walpole, 2008; Neuman & Wright, 2010), that occurs throughout the state. This study uses mixed methods to explore coaching in districts of varying size, location in Iowa, and year of implementation of TLC funding.

STEM Education

Motion Virtual Manipulatives in the Elementary Math Classroom

Researchers: Sarah Diesburg and Adam Feldhaus, University of Northern Iowa

District Partners: TBD

Project Duration: 2015-17

Abstract: Manipulatives are a powerful tool to help students grasp the foundational concepts of mathematics. This is especially true of elementary school mathematics when it is integral that students learn mathematical concepts and how they can be used to solve problems and compute solutions. One way to introduce manipulatives into the elementary school classroom and increase student engagement with STEM-based technologies is through the use of motion-sensing input devices such as the Microsoft Kinect. These devices interpret user movements and translate the movements into a gaming environment displayed on a screen.

The researchers propose to create an environment where students use motion-sensing input devices to interact with mathematics manipulatives in an engaging environment. The goal of this project is to create a new toolset that will be called motion virtual manipulatives (MVMs). MVMs will:

- introduce manipulatives into the elementary school classroom using motion-sensing input devices,
- be an effective tool for teaching core mathematical concepts, and
- potentially reach students who do not respond to typical mathematics instruction.

This software will be available at little to no cost to students or teachers. Once developed, the researchers will take the program into schools to evaluate it with the intent of improving the software and expanding implementation to other grade levels, mathematical manipulatives, and school settings.

Enhancing the "Argument-based Strategies for STEM-Infused Science Teaching" (ASSIST) Approach through Dialogic Teacher Feedback

Researcher: Mason Kuhn, University of Northern Iowa

District Partners: BCLUW, Bondurant-Farrar, Cedar Falls, Charles City, Clarksville, Denver, Dike-New Hartford, Gladbrook-Reinbeck, Hudson, Janesville, Mason City, Pella, South Hardin, Waukee, Waverly-Shell Rock

Project Duration: 2016-18

Abstract: In 2015, the state of Iowa adopted the Next Generation Science Standards (NGSS) as its state science standards. The previous Iowa Core science standards were written to promote inquiry, but the NGSS go a step further and support a specific type of inquiry: Argument-Based Inquiry (ABI).

Research has identified two main types of teacher feedback patterns, Verification and Elaborative (Siddiquee & Ikeda, 2013). Elaborative feedback patterns align with ABI approaches (Shute, 2008) and thus also align with the intent of the new science standards. The Elaborative approach to feedback uses a dialogic perspective and suggests that teachers use dialogic feedback in classrooms (Chin, 2007).

This project will focus on the type of feedback teachers provide their students when they teach science using an argument-based, STEM-infused approach. We will explore possible correlations between the type of feedback a teacher uses in their classroom and their epistemological beliefs

about science. We will also evaluate how student achievement is affected by teacher epistemological beliefs about science and their ability to enact quality dialogic feedback.

Teachers will attend a five-day professional development (PD) where they will learn how to implement the Argument-based Strategies for STEM-Infused Science Teaching (ASSIST) approach. These teachers and a control group that will not attend the PD will submit videos of their science teaching and their ability to enact dialogic feedback with their students will be assessed. We will evaluate the two groups' epistemological beliefs about science and use of dialogic feedback, as well as their students' achievement in science.

Literacy Through Science

Researchers: Beth Van Meeteren, Mason Kuhn, Sohyun Meacham, and Sarah Vander Zanden, University of Northern Iowa

District Partners: Dike-New Hartford, Emmetsburg, North Tama County

Project Duration: 2015-17

Abstract: The current emphasis on literacy assessments in early childhood is driving many kindergarten classrooms to do away with science experiences for children to focus solely on literacy instruction. This study will use mixed methods to determine the effects of nature-based science project work in preschool and kindergarten classrooms on student achievement in literacy.

This proposal reflects a unique opportunity to join a team dedicated to increasing science nature investigations with young children. The Lakeside Laboratory Regents' Resource Center at Okoboji asked the Regents' Center for Early Developmental Education (RCEDE) at UNI to examine the effects of their Young Investigators teacher professional development program. Young Investigators is an organization dedicated to facilitating early access to science inquiry through nature-based project work. It uses a method of teaching in which in-depth study of a particular topic is conducted by a child or a group of children. Activities engaged in during project work include drawing, writing, reading, recording observations, and interviewing experts (Katz, 1994).

Trauma-Informed Practice for Adverse Childhood Experiences

We can! Testing a Trauma-Informed Care Training in Iowa Elementary Schools

Researchers: Armeda Wojciak and Carol Smith, University of Northern Iowa

District Partner: College Community School District

Project Duration: 2016-17

Abstract: Adverse childhood experiences (ACEs)--including physical abuse, emotional abuse, sexual abuse, physical neglect, emotional neglect, a parent with a mental illness, separation from a parent as a result of incarceration or death, domestic violence, parental substance use, and divorce (Felitti et al., 1998)--impact children early in their development, specifically their health

and educational outcomes. In Iowa, an estimated 33% of all children will experience 1 or 2 ACEs before the age of 18, with 12% experiencing 3 or more as measured by the National Child Abuse and Neglect Data System (Sacks, Murphey, & Moore, 2014).

Blodgett (2012) demonstrated that ACEs exposure is a principal predictor of behavioral and attendance problems at school and the second biggest predictor of academic failure. Elementary school provides an opportunity, as a universal system that serves the majority of children, to offer trauma-informed care practices to students to improve student success.

This project will test We Can!: An Educator's Guide to Trauma-Informed Practice, a trauma-informed intervention, across multiple elementary schools in Eastern Iowa. The project PIs developed We Can! with an Iowa elementary school principal and school counselor. The intervention will be delivered to all teachers and paraprofessionals in all five elementary schools in College Community School District.

We will conduct a quasi-experimental repeated measures study. This project will employ qualitative and quantitative methods to examine the influence of the trainings on 1) increasing awareness and knowledge of trauma and trauma-informed practices in the elementary setting, 2) improving school climate and culture, and 3) decreasing undesirable student behaviors. Results will be disseminated locally and nationally with implications for teachers, school counselors, school administrators, and policymakers. This project will continue to build the foundation of an evidence-based intervention that can be implemented in all Iowa schools.

Appendix B. Summary of CET Programs and Events

Ed Research Afternoons

Critical Action Research with Educators, Families, and Youth: Expanding Circles of Solidarity (February 3, 2017)

Gerald Campano, University of Pennsylvania Graduate School of Education, presented examples from three school- and community-based research projects to examine collective efforts toward educational equity and transformation. Questions examined included:

- How can educators learn from the transnational histories and out-of-school knowledge of students and families?
- What role can teacher inquiry play in making the curriculum more culturally relevant and engaging?
- How might we come together across social, cultural, and linguistic boundaries to create a shared vision for educational access and immigrant rights?

Appendix C. CET Councils

State Advisory Council

Brenda Bass, Dean, College of Social and Behavioral Sciences, UNI

Jeff Danielson, Iowa Senate

Roark Horn, Executive Director, School Administrators of Iowa

Slade Hovick, Math Teacher, Williamsburg Junior/Senior High School

Gaëtane Jean-Marie, Dean, College of Education, UNI

Bob Kressig, Iowa House of Representatives

Nancy Langguth, Clinical Professor, College of Education, University of Iowa

Jane Lindaman, Superintendent, Waterloo Community School District

Jon McKenzie, Director of Assessment and Improvement, AEA 267

Katie Mulholland, President Pro Tem, Iowa Board of Regents

Hillery Oberle, Director of Corporate & Foundation Relations, UNI

Tom Penaluna, President/CEO, CBE Companies, Inc.

Jay Pennington, Bureau Chief, Iowa Department of Education

Vickie Robinson, Associate Vice President for Educator Preparation, UNI

Marlene Strathe, Director, School of Education, Iowa State University

Stacy Van Gorp, Executive Director, McElroy Trust

Dan Zumbach, Iowa Senate

Research Council

Rob Boody, Professor, Educational Psychology and Foundations, University of Northern Iowa

Anne Estapa, Assistant Professor, Mathematics Education, Iowa State University

Jason Harshman, Assistant Professor, Social Studies Education, University of Iowa

Ann Lebo, Executive Director, Iowa Board of Educational Examiners

Jay Pennington, Bureau Chief, Information and Analysis Services, Iowa Department of Education

Trace Pickering, Associate Superintendent, Cedar Rapids Community School District

Anthony Voss, Superintendent, Hudson Community School Districts