

# 2021-22 DRK–12 New Awards

*This list contains grants awarded winter 2021 – summer 2022.*

**NEW!** *Denotes awards made since CADRE's August 2022 newsletter*

| Award # | Project Title   | PI                | Institution                           |
|---------|---|-------------------|---------------------------------------|
| 2200883 | A Systematic Review and Meta-Analysis on the Effectiveness of Remote Education in Math and Science  | Sarah Sahni       | American Institutes for Research      |
| 2200438 | Adapted Measure of Math Engagement: Designing Self-Report Measures of Mathematics Engagement for Black and Latina/o Middle School Students (Collaborative Research: Gordon)               | Rachel Gordon     | University of Louisiana at Lafayette  |
| 2200437 | Adapted Measure of Math Engagement: Designing Self-Report Measures of Mathematics Engagement for Black and Latina/o Middle School Students (Collaborative Research: Holquist)             | Samantha Holquist | Child Trends                          |
| 2201295 | Advancing Earth Science Instruction across High School Life and Physical Science  | Alan Berkowitz    | Cary Institute of Ecosystem Studies   |
| 2201127 | Applying and Refining a Model for Dynamic, Discussion-based Professional Development for Middle School Teachers about Fractions, Ratios, and Proportions (Collaborative Research: Brown)  | Rachael Brown     | Pennsylvania State University         |
| 2201126 | Applying and Refining a Model for Dynamic, Discussion-based Professional Development for Middle School Teachers about Fractions, Ratios, and Proportions (Collaborative Research: Cohen)  | Allan Cohen       | University of Georgia                 |
| 2201125 | Applying and Refining a Model for Dynamic, Discussion-based Professional Development for Middle School Teachers about Fractions, Ratios, and Proportions (Collaborative Research: Orrill) | Chandra Orrill    | University of Massachusetts Dartmouth |
| 2200990 | Attributions of Mathematical Excellence in Teaching and Learning  | Erik Jacobson     | Indiana University                    |
| 2201673 | Bridging Preschool and Kindergarten Science: Exploring Play-based Engagement with Scientific and Engineering Practices in Early Learning Environments (Collaborative Research: Miller)    | Alison Miller     | Bowdoin College                       |

| Award # | Project Title   | PI                  | Institution                               |
|---------|---|---------------------|---|
| 2201674 | Bridging Preschool and Kindergarten Science: Exploring Play-based Engagement with Scientific and Engineering Practices in Early Learning Environments (Collaborative Research: Whitt) | Katahdin Cook Whitt | Maine Mathematics and Science Alliance    |
| 2201204 | Build it Green!: Enhancing Middle School Science Education through an Energy Efficient Building Design Curriculum   | Laura Zangori       | University of Missouri                    |
| 2145517 | CAREER: A Transformative Approach for Teaching and Learning Geometry by Representing and Interacting with Three-Dimensional Figures   | Justin Dimmel       | University of Maine                       |
| 2144506 | CAREER: Advancing Equity in Middle School Mathematics by Engaging Students and Families of Color in Participatory Design Research   | Nicole Louie        | University of Wisconsin-Madison           |
| 2142000 | CAREER: Covariational and Algebraic Reasoning: A New Path to Algebra  | Teo Paoletti        | University of Delaware                    |
| 2143816 | CAREER: Designing Meaningful Learning Experiences for Statistical Literacy in Secondary Mathematics   | Travis Weiland      | University of Houston                     |
| 2143993 | CAREER: Designing Teacher Professional Development to Leverage the Brilliance of Learners of Color  | Sherice Clarke      | University of California, San Diego       |
| 2142908 | CAREER: Developing Elementary Teachers' Self-Efficacy to Teach about Climate Change Using Community-based Practices   | Amal Ibourk         | Florida State University                  |
| 2144618 | CAREER: Fostering Early STEM Exploration with Gifted and High Ability Black Girls and Their Elementary Teachers through Culturally Relevant Experiential Learning Activities          | Brittany Anderson   | University of North Carolina at Charlotte |
| 2142659 | CAREER: From Research to Meta-Research to Practice – The Development of an Educational Learning Environment Framework for School Algebra  | Sheree Sharpe       | University of New Hampshire               |
| 2145478 | CAREER: Promoting Science Motivation and Learning through Instructional Support of Curiosity  | Jamie Jirout        | University of Virginia                    |
| 2145260 | CAREER: Teacher Learning through Expansive Sensemaking in Science   | Jessica Watkins     | Vanderbilt University                     |

| Award # | Project Title   | PI                      | Institution                                |
|---------|---|-------------------------|--|
| 2148014 | CAREER: Transforming Science Teaching and Learning through Empowering Teachers and Students as Climate Justice Action Researchers and Change Agents                                   | Tammie Visintainer      | San Jose State University                  |
| 2144027 | CAREER: Understanding the Routinization of Mathematics Language Routines in Middle and High Schools   | Sarah Roberts           | University of California, Santa Barbara    |
| 2201039 | <b>NEW!</b> Completing the Development of the Electronic Test of Early Numeracy (e-TEN)   | Arthur Baroody          | University of Illinois at Urbana-Champaign |
| 2200887 | Contextualizing Data Education via Project-based Learning   | Chad Dorsey             | Concord Consortium                         |
| 2201148 | Cultivating Relationships: Partnering with Teachers and Tribes to Integrate Indigenous and School STEM Knowledge  | Vanessa Anthony-Stevens | University of Idaho                        |
| 2201255 | Culturally Responsive Engineering Experience Design and Development through Teacher-Undergraduate Engineering Student Partnerships  | Darryl Dickerson        | Florida International University           |
| 2200918 | Designing Computational Modeling Curricula across Science Subjects to Study How Repeated Engagement Impacts Student Learning throughout High School (Collaborative Research: Conlin)  | Luke Conlin             | Salem State University                     |
| 2200919 | Designing Computational Modeling Curricula across Science Subjects to Study How Repeated Engagement Impacts Student Learning throughout High School (Collaborative Research: Kantzer) | Madison Kantzer         | District of Columbia Public Schools        |
| 2200917 | Designing Computational Modeling Curricula across Science Subjects to Study How Repeated Engagement Impacts Student Learning throughout High School (Collaborative Research: Klopfer) | Eric Klopfer            | Massachusetts Institute of Technology      |
| 2201324 | Developing a Place-based STEM Education Model for Cultural Connections to Alaska Science  | Lynda McGilvary         | University of Alaska Fairbanks             |
| 2201068 | Developing and Testing a Learning Progression for Middle School Physical Science Incorporating Disciplinary Core Ideas, Science and Engineering Practices, and Crosscutting Concepts  | Peng He                 | Michigan State University                  |

| Award # | Project Title  | PI               | Institution                      |
|---------|--|------------------|----------------------------------|
| 2201305 | Developing Neural and Behavioral Measures to Predict Long-Term STEM Learning Outcomes from a High School Spatial Learning Course (Collaborative Research: Green)                         | Adam Green       | Georgetown University            |
| 2201051 | Developing Science Assessments for Language Diversity in Early Elementary Classrooms   | Daisy Rutstein   | SRI International                |
| 2200830 | Empowering Changemakers: Urban Biodiversity Initiative for Teachers and Youth  | Ashley Iveland   | WestEd                           |
| 2201313 | Empowering Educators to Create Customized, Culturally Responsive Instructional Materials from Scratch Encore Harmonized with the Interest of Students (Collaborative Research: Franklin) | Diana Franklin   | University of Chicago            |
| 2201312 | Empowering Educators to Create Customized, Culturally Responsive Instructional Materials from Scratch Encore Harmonized with the Interest of Students (Collaborative Research: Weintrop) | David Weintrop   | University of Maryland           |
| 2200928 | Empowering Students with Choice through Equitable and Interactive Mathematical Modeling (EIM2)   | Hyunyi Jung      | University of Florida            |
| 2201407 | Engineering for Students with Extensive Support Needs  | Bree Jimenez     | University of Texas at Arlington |
| 2200757 | Evaluating Effects of Automatic Feedback Aligned to a Learning Progression to Promote Knowledge-In-Use   | Kevin Haudek     | Michigan State University        |
| 2201087 | Examining an Online, International Exchange Professional Development Program for High School Teachers  | Amanda Brown     | University of Michigan           |
| 2200634 | Experiments in Teacher Professional Learning: Testing Design Features that Accelerate Instructional Improvement in Mathematics   | John Papay       | Brown University                 |
| 2201095 | Exploring K-2 Children Understandings of Visual Representations in Algebraic Reasoning   | Bárbara Brizuela | Tufts University                 |
| 2200815 | Exploring the Integration of Systems Thinking in Biology in Participatory Professional Development   | Michael Cassidy  | TERC                             |

| Award # | Project Title   | PI             | Institution                             |
|---------|---|----------------|---|
| 2201394 | Fostering Virtual Learning of Data Science Foundations with Mathematical Logic for Rural High School Students (Collaborative Research: Xing)          | Wanli Xing     | University of Florida                   |
| 2201393 | Fostering Virtual Learning of Data Science Foundations with Mathematical Logic for Rural High School Students (Collaborative Research: Zhang)         | Yuanlin Zhang  | Texas Tech University                   |
| 2200781 | How Multi-digit Number Names Guide Attention, Memory, and Place Value Learning in Early Elementary Mathematics  | Lei Yuan       | University of Colorado Boulder          |
| 2201121 | Integrating the Statistical Investigation Process, Data Visualization, and Simulation into High School Statistics                                     | Soma Roy       | California Polytechnic State University |
| 2201249 | Investigating How Combining Intensive Professional Development and Modest Support Affects Rural Elementary Teachers' Science and Engineering Practice | Ryan Summers   | University of North Dakota              |
| 2201253 | Learning in Places: PK-5+ Field-based Science Education Across Schools, Families, and Communities (Collaborative Research: Bang)                      | Megan Bang     | Northwestern University                 |
| 2201254 | Learning in Places: PK-5+ Field-based Science Education Across Schools, Families, and Communities (Collaborative Research: Tzou)                      | Carrie Tzou    | University of Washington                |
| 2201424 | Learning Probability Through AI Problem-Solving in a Game-based Environment (Collaborative Research: Greenwald)                                       | Eric Greenwald | University of California, Berkeley      |
| 2201423 | Learning Probability Through AI Problem-Solving in a Game-based Environment (Collaborative Research: Wang)  | Ning Wang      | University of Southern California       |
| 2222148 | Mentoring a Diverse Cohort of Postdoctoral Scholars in Data Science Education Research  | Rachel Levy    | North Carolina State University         |
| 2200778 | Middle School Students Graphing from the Ground Up (Collaborative Research: Lee)  | Hwa Young Lee  | Texas State University                  |
| 2200777 | Middle School Students Graphing from the Ground Up (Collaborative Research: Paoletti)   | Teo Paoletti   | University of Delaware                  |

| Award # | Project Title   | PI                  | Institution                                 |
|---------|---|---------------------|---|
| 2200915 | Preparing Mentors to Support Novices in Eliciting Student Thinking during Mathematics Discussions: Developing and Testing a Simulation-based PD Program                     | Julie Cohen         | University of Virginia                      |
| 2200371 | Project AIM-NEXT: All Included in Mathematics New Extensions - Professional Development for K-2 Mathematics Teachers, Leaders, and Coaches (Collaborative Research: Heck)   | Daniel Heck         | Horizon Research, Inc.                      |
| 2200370 | Project AIM-NEXT: All Included in Mathematics New Extensions - Professional Development for K-2 Mathematics Teachers, Leaders, and Coaches (Collaborative Research: Sztajn) | Paola Sztajn        | North Carolina State University             |
| 2201165 | Quantifying Curricular Reasoning as a Critical Practice in Teaching Mathematics (Collaborative Research: Bostic)  | Jonathan Bostic     | Bowling Green State University              |
| 2201169 | Quantifying Curricular Reasoning as a Critical Practice in Teaching Mathematics (Collaborative Research: Dingman)   | Shannon Dingman     | University of Arkansas                      |
| 2201166 | Quantifying Curricular Reasoning as a Critical Practice in Teaching Mathematics (Collaborative Research: May-Sondergeld)  | Toni May-Sondergeld | Drexel University                           |
| 2201167 | Quantifying Curricular Reasoning as a Critical Practice in Teaching Mathematics (Collaborative Research: Roth-McDuffie)   | Amy Roth-McDuffie   | Washington State University                 |
| 2201164 | Quantifying Curricular Reasoning as a Critical Practice in Teaching Mathematics (Collaborative Research: Teuscher)  | Dawn Teuscher       | Brigham Young University                    |
| 2201192 | Restructuring Middle School Science around Grand Challenges   | Troy Sadler         | University of North Carolina at Chapel Hill |
| 2201015 | Scaffolding Middle and High School Students' Scientific Evaluations of Sources and Alternative Claims in Earth and Environmental Sciences (Collaborative Research: Bailey)  | Janelle Bailey      | Temple University                           |
| 2201016 | Scaffolding Middle and High School Students' Scientific Evaluations of Sources and Alternative Claims in Earth and Environmental Sciences (Collaborative Research: Buxner)  | Sanlyn Buxner       | Planetary Science Institute                 |

| Award # | Project Title   | PI                      | Institution                       |
|---------|---|-------------------------|-----------------------------------|
| 2201017 | Scaffolding Middle and High School Students' Scientific Evaluations of Sources and Alternative Claims in Earth and Environmental Sciences (Collaborative Research: Governor)  | Donna Governor          | University of North Georgia       |
| 2201012 | Scaffolding Middle and High School Students' Scientific Evaluations of Sources and Alternative Claims in Earth and Environmental Sciences (Collaborative Research: Lombardi)  | Doug Lombardi           | University of Maryland            |
| 2201013 | Scaffolding Middle and High School Students' Scientific Evaluations of Sources and Alternative Claims in Earth and Environmental Sciences (Collaborative Research: McAuliffe) | Carla McAuliffe         | TERC                              |
| 2201018 | Scaffolding Middle and High School Students' Scientific Evaluations of Sources and Alternative Claims in Earth and Environmental Sciences (Collaborative Research: Sinatra)   | Gale Sinatra            | University of Southern California |
| 2204901 | Science Teachers as Public Health Educators: How Has the COVID-19 Pandemic Reshaped the Roles and Experiences of K-12 Science Teachers?                                       | Peggy Trygstad          | Horizon Research, Inc.            |
| 2201083 | Supporting Consequential Learning in Middle School STEM through Rightful Familial Presence  | Angela Calabrese Barton | University of Michigan            |
| 2200753 | Supporting School Administrators in Leading Towards Racially Just and Ambitious Mathematics Instruction   | Jessica Rigby           | University of Washington          |
| 2201215 | Supporting Secondary Students' Earth Science Knowledge and Engineering Design Skills with Mobile Design Studios   | Corey Schimpf           | University at Buffalo - SUNY      |
| 2214168 | The Impact of COVID on Children's Well-being in 2022: Continued Evidence from the Understanding America Study   | Anna Saavedra           | University of Southern California |
| 2201196 | Using Integrated, Place-based Watershed Curriculum to Increase Teacher Self-Efficacy with Culturally Relevant STEM  | Julie Robinson          | University of North Dakota        |
| 2200763 | Using Problem-based Learning Analytics to Investigate Individual and Collaborative Mathematics Learning in a Digital Environment Over Time                                    | Elizabeth Phillips      | Michigan State University         |