

IES Opportunities for Technology Research in Education

Institute of Education Sciences

Edward Metz, PhD
National Center for Education Research

Amy Sussman, PhD
National Center for Special Education Research



Background: What is IES?

- The Institute of Education Sciences (IES) is the **research, evaluation, and statistics** arm of the U.S. Department of Education.
- Independent, non-partisan by law
- IES is charged with providing rigorous and relevant evidence to inform education practice and policy.
- IES shares information broadly with a wide range of stakeholders by providing information in formats that are useful and accessible to educators, parents, policymakers, researchers, and the public.

<https://ies.ed.gov/>

How is IES organized?



What are the objectives of the research grants programs?

- Develop or identify education interventions (practices, programs, policies, and approaches) that enhance education outcomes and can be widely deployed
- Identify what does not work and thereby encourage innovation and further research
- Understand the processes that underlie the effectiveness of education interventions and the variation in their effectiveness
- Develop measures of academic achievement and progress
- Support research and national leadership on core issues



What research areas are the Centers interested in?

- NCER – PreK through postsecondary and adult education
- NCSER – Birth through postsecondary education, with or at risk for disabilities
- Research to improve outcomes that support success in school and afterwards, such as
 - Academic outcomes
 - Social and behavioral competencies
 - Progress through education system and transition to career
- May focus on students, educators, families, the education system, etc.



What project types do the Centers fund through their education/special education research grants program?

- **Measurement:** Develop/refine and/or validate a new or existing measure.
- **Exploration:** Identify relationships between learner-, educator-, school-, and policy-level characteristics and meaningful education outcomes.
- **Development and Innovation:** Develop/modify an intervention and test its feasibility and promise for improving learner outcomes.
- **Impact:** Evaluate whether an intervention that hasn't been tested prior shows efficacy, conduct longer-term follow-up of a rigorously-evaluated intervention, or systematically vary one or more aspect of a previous study in a replication to better understand what works, for whom, and under what conditions.

What research topics do the Centers fund through primary competitions?

NCER	NCSEER
<ul style="list-style-type: none"> • Career and Technical Education • Civics Education and Social Studies • Cognition and Student Learning • Early Learning Programs and Policies • Improving Education Systems • Literacy • Postsecondary and Adult Education • Science, Technology, Engineering and Mathematics (STEM) Education • Social, Emotional, and Behavioral Context for Teaching and Learning • Teaching, Teachers, and the Education Workforce 	<ul style="list-style-type: none"> • Cognition and Student Learning • Early Intervention and Early Learning • Educators and School-Based Service Providers • Families of Learners with Disabilities • Reading, Writing, and Language • Science, Technology, Engineering and Mathematics (STEM) • Social, Emotional, and Behavioral Competence • Systems, Policy, and Finance • Transition to Postsecondary Education, Career, and/or Independent Living

Examples of Funded Projects: NCER Education Research Grants Program

- Leveraging Technology to Improve Children's Understanding of Mathematical Equivalence – This project leverages an existing digital learning platform (ASSISTments) to scale up an evidence-based intervention that was originally developed as a paper/pencil supplemental curriculum.
- Optimizing AI-Based Tutoring Software for Middle-School Mathematics on Smartphones – This project is to develop and test a mobile data-optimized tutoring system to promote math practice for middle-school students, combined with a new system for parent-student motivational nudges to encourage parents to support their children in doing homework.
- Exploring the Affordances of Immersive Virtual Reality for Learning - This project is to systematically investigate how specific features of immersive virtual reality (IVR) can be used to improve student outcomes in science learning.

Examples of Funded Projects: NCSEER Special Education Research Grants Program

- [A Multi-Site Randomized Controlled Trial to Assess the Efficacy of the NumberShire Level 1 Gaming Intervention for Improving Math Outcomes for Students With or At Risk for Math Learning Disabilities](#) – Examined the efficacy of this gaming intervention for improving math achievement for 1st grade students with/at risk for math learning disabilities.
- [Project DataWall: A Decision Support System for MTSS](#) – Developing and piloting a system to guide school teams in using data to implement an integrated multi-tiered system of supports to improve outcomes for students with/at risk for disability.
- [Virtual Reality Applications for the Study of Attention and Learning in Children with Autism and ADHD](#) – Applied VR technology to create visual/auditory settings simulating socially complex classrooms to study students with autism (VR as research measurement tool and as potential mechanism for improving learning through increasing social attention)

IES Research Competitions with Emphasis on Technology



ED/IES Small Business Innovation Research (SBIR) Program

- ED/IES SBIR provides up to \$1.25M for the **R&D**, **pilot testing**, and **evaluation** of new commercially viable education technology products for students, educators, or administrators in education and special education. Dozens of education technology products through the program are used by millions of students and educators each year.
- Three FY 2024 solicitations will be released in late 2023 or early 2024 with proposals due 60 days later:
 - (1) A Phase IA solicitation will request proposals for the R&D of novel prototypes of education technology products, and
 - (2) a Phase IB solicitation will request proposals for new components to be added to existing prototypes or products. (Phase I awards will be for \$250K for 8-months, with Phase I awardees eligible to apply for Phase II the following year for another \$1M for 2 years.)
 - (3) A Direct to Phase II solicitation will request proposals for the development of new education technology products to ready evidenced-based research innovations for use in practice. Direct to Phase II awards for up to \$1M for 2 years.
- For more information, visit <https://ies.ed.gov/sbir/solicitations.asp>

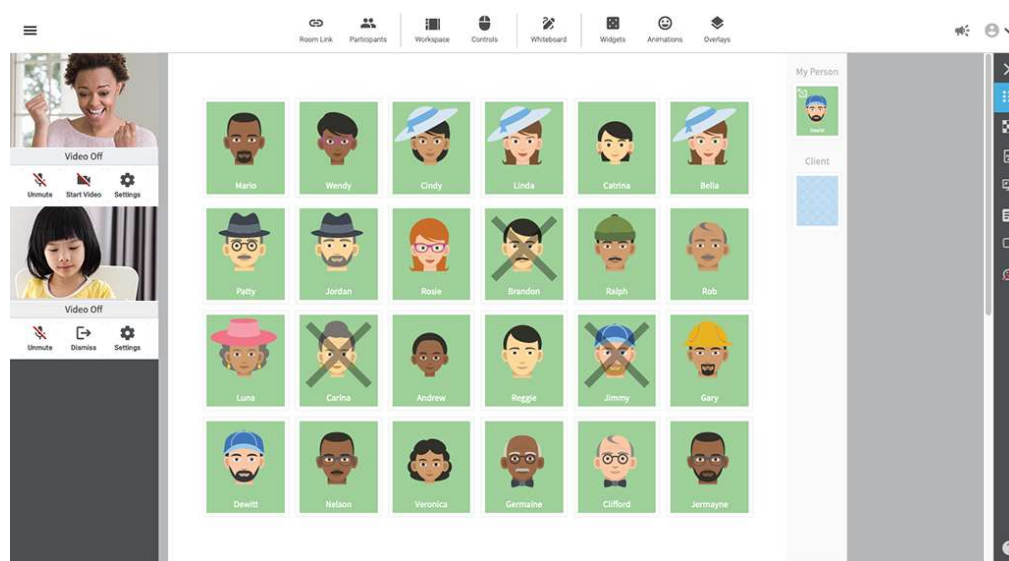
Examples of Impactful ED/IES SBIR Investments in Tech for Special Education

KASI By Alchemie



Examples of Impactful ED/IES SBIR Investments in Tech for Special Education

Presence Learning



Transformative Research in the Education Sciences Grants Program

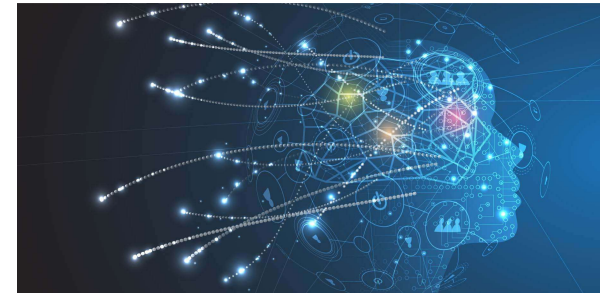
- Part of IES's push towards implementing the ARPA model within education.
- Supports innovative research that has the potential to make dramatic advances towards solving seemingly intractable problems and challenges in the education field and/or to accelerate the pace of conducting education research to facilitate major breakthroughs.
- In fiscal year (FY) 2024, this program will focus on accelerating learning and reducing persistent education inequities by leveraging evidence-based principles from the learning sciences coupled with advanced technology.
- For this fiscal year, applications were due in August 2023. Look for updates to this program here: <https://ies.ed.gov/funding/grantsearch/program.asp?ID=2115>

Digital Learning Platforms Research Network

- NCER funded this network in FY 2021 to increase the number of digital learning platforms that support research and to provide the infrastructure needed to enable education technology industry leaders and developers, education researchers, and education practitioners to work together to conduct relevant, rigorous, equity-focused research. In FY 2023, IES invited applications for research teams to join the network to conduct research using the network's DLPs.
- For this fiscal year, we are inviting applications for research teams once again. **Applications are due January 11, 2024.** Look for updates to this program – including the request for applications once it is posted – here: <https://ies.ed.gov/ncer/projects/program.asp?ProgID=2119>
- More details are available in the Federal Register Notice: <https://www.federalregister.gov/documents/2023/09/11/2023-19497/applications-for-new-awards-education-research-grant-programs>

Special Competition (Example Project): NCSEER-NSF AI Institute

- In FY 2023, NCSEER co-funded with the National Science Foundation:
 - National AI Research Institutes—Accelerating Research, Transforming Society, and Growing the American Workforce, Theme 6 Track B—*AI-Augmented Learning for Individuals with Disabilities*
 - NCSEER Program Officer: Britta Bresina
- Award: *AI Institute for Transforming Education for Children with Speech and Language Processing Challenges*
 - State University of New York (SUNY), Buffalo
 - PI Venugopal Govindaraju



Special Competition (Example Project): NCER-NSF AI Institute

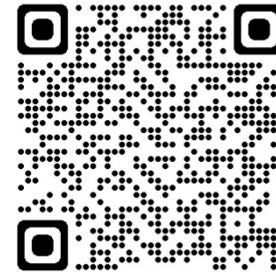
- In FY 2023, NCER co-funded an Artificial Intelligence (AI) Research Institute with the National Science Foundation
 - Theme 6 Track A—*AI-Driven Digital Platforms to Expand and Accelerate STEM Learning in PreK-12 Settings*
- *AI Institute for Inclusive Intelligent Technologies for Education* (INVITE Institute)
 - University of Illinois
 - PI: Chad Lane

Additional Programs of Interest

- **Education Research Training Programs (NCER)** – Since 2004, IES has invested in training programs to prepare individuals to conduct rigorous and relevant education research that advances knowledge within the field and addresses issues important to education policymakers and practitioners. Training programs could focus on education technology-related topics. **Applications for NCER’s training programs are due January 11, 2024.**
- **Special Education Training Programs (NCSEER)** – Research Training Programs in Special Education aim to prepare individuals to conduct rigorous and relevant special education and early intervention research that advances knowledge and addresses issues important to education policymakers and practitioners, including technology-related topics. **Early Career Development and Mentoring program’s applications are due September 21, 2023.**
- **Statistical and Research Methodology in Education (NCER)** – The goal of the Statistical and Research Methodology in Education (Stats/Methods) grant program is to provide a wide range of methodological and statistical tools that will better enable applied education scientists to conduct rigorous education research. **Applications due January 11, 2024.**

More Information on IES Competitions

Funding Opportunities <https://ies.ed.gov/funding/>



Program Officer Contacts

- NCER focus on technology: **Erin Higgins** (Erin.Higgins@ed.gov)
- IES SBIR: **Ed Metz** (Edward.Metz@ed.gov)
- NCSER focus on technology: **Sarah Brasiel** (Sarah.Bراسiel@ed.gov)
or Amy Sussman (Amy.Sussman@ed.gov)