



SOUTHERN ILLINOIS UNIVERSITY
**STEM EDUCATION
RESEARCH CENTER**

Harvey Henson
Interim Director

Associate Professor
School of Education
School of Earth Systems and Sustainability

STEM Education Research Center (SERC) is a research and service unit at Southern Illinois University Carbondale.

Mission: Organize and sustain a diverse community of faculty and staff to collaboratively prepare the next generation of STEM educators, researchers and professionals and **to advance STEM literacy** at the local, state and national levels through multidisciplinary and integrative strategies in research, education and service.

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History

2008 to 2014 COS and COEHS faculty/staff collaboration

07/2014 SERC Established (IBHE Temporary Status)

07/2014 to 06/2015 Acting Director: Greg Budzban, Chair, Dept. of Mathematics

07/2016 to present Interim Director: Harvey Henson, Associate Prof.

05/2018 Self Study & Internal Review

09/2019 IBHE Permanent Status

Goals:

- 1. Develop STEM education and research programs and support existing programs by obtaining grant and contract funding.*
- 2. Provide professional development, curriculum development, workshops and support for educators and administrators.*
- 3. Research and facilitate strategies of teaching aligned to the NGSS and Common Core for improved student and public literacy.*
- 4. Build partnerships with local, state and national stakeholders to advance STEM teaching, learning and research.*
- 5. Build partnerships to improve and implement the Illinois Science Assessment and other state assessments.*
- 6. Collaborate with the SIU community to provide students excellent preparation for advanced programs and professions in STEM.*

Goals:

Develop STEM education and research programs and support existing programs by obtaining grant and contract funding.

- **SERC faculty/staff submitted 32 proposals requesting \$68,381,381 (FY17-FY22) and 5 pending proposals are requesting \$13,428,329**
- **SERC awarded \$16,811,609 (16 of 27) external grants/contracts (FY17-FY22)**
 - ✓ *Scholastic Olympiad Initiative – Scholastic Trust of Singapore (\$110K)*
 - ✓ *Illinois Science Assessment Partnership: Item Development – ISBE (\$12.8M)*
 - ✓ *Pathways to STEM Leadership Development Program – NSF (\$1M)*
 - ✓ *Illinois Science Assessment Partnership – ISBE (\$2.5M)*
 - ✓ *Illinois Junior Science & Humanities Symposium – NSTA (\$14K)*
 - ✓ *Making Science Connections – ROE #30 & ISBE (\$86K)*
 - ✓ *Making Math Connections – ROE #30 & ISBE (\$86K)*

Scholastic Olympiad Initiative
 Scholastic Trust of Singapore



20,000 Students Globally
1,100 Students USA (5.5%)

91 Gold
91 Silver
232 Bronze
144 Honorable Mention



1ST PLACE IN USA	
GRADE	GLOBAL RANK
11/12	GOLD 73
10	GOLD 54
09	GOLD 24
09	GOLD 24
08	GOLD 115
07	GOLD 118
06	GOLD 108
05	GOLD 151
04	GOLD 167
03	GOLD 172
02	GOLD 180

Illinois Science Assessment

Illinois State Board of Education (ISBE)

- Grades 5, 8, & 11
- 425,000 Students Annually

Hand Scoring (Avg \$5K Teacher/year)

Psychometrics Analysis

Print and Ship Assessment Reports

Prof. Development & Engagement (200 Teachers/year)

- | | |
|--------------------|------------------------|
| • Item Scoring | • Item Review |
| • Item Development | • Data Review |
| • Psychometrics | • Instructional Impact |

Development of Assessment Items

- 7 Universities
- 125 Teachers



Illinois
State Board of
Education

