

DATE: April 26, 2012

SUBJECT: STEM Professional Development

ACTION RECOMMENDED: Approval

BACKGROUND INFORMATION: Tennessee was one of just two states selected on March 29, 2010 in the first round of the federal Race to the Top competition, receiving over \$500 million. The funds will allow Tennessee to implement a comprehensive set of school reform plans over the next four years. The \$4.35 billion Race to the Top national fund is an unprecedented federal investment designed to reward states leading the way in comprehensive, coherent, statewide education reform across four key areas:

- Adopting standards and assessments that prepare students to succeed in college and the workplace
- Building data systems that measure student growth and success, and inform teachers and principals how to improve instruction
- Recruiting, developing, rewarding, and retaining effective teachers and principals, especially where they are needed most
- Turning around their lowest-performing schools
- Expanding STEM (Science, Technology, Engineering, and Math) education opportunities through the STEM Innovation Network

As part of the effort to expand STEM educational opportunities, the Tennessee Higher Education Commission released a second Request for Proposals focusing on professional development for K-12 STEM teachers in February 2012. The purpose of this particular program is to promote innovative practice in K-12 schools within STEM disciplines to further develop K-12 STEM teachers' pedagogical content knowledge, while building a repertoire of highly effective STEM professional development programs to be housed and used through Tennessee's STEM Innovation Network. Tennessee's higher education institutions have the expertise to develop and implement such programs. This close collaboration between the institutions and LEAs will only further strengthen the goal of increasing student achievement.

In March 2012, 38 proposals were received in response to the Request for Proposals. A committee of individuals with expertise in STEM fields was convened to evaluate and select proposals for funding. The 18 proposals selected for funding will serve Tennessee's high-need districts. A total of \$3.4 million was awarded in this final competitive round of selection. A total of \$5.2 million has now been directed towards STEM Professional Development programs from THEC's Race to the Top funds.

SUPPORTING DOCUMENTATION INCLUDED: A list of recommended institutions and funding levels is provided in Attachment B. The STEM

Professional Development projects will be funded for the period May 15, 2012 to December 31, 2013. The grant review process is described on Attachment C to this agenda item.

OTHER SUPPORTING DOCUMENTS AVAILABLE: All grant proposals are available for review at the Commission office.

ATTACHMENT B
STEM Professional Development
Recommendation for Funded Proposals

<p>East Tennessee State University <i>Project SEE (Science in Early Education)</i> Project Directors: Rosemary Geiken and Gary Henson</p>	<p>\$197,615.00</p>
<p>East Tennessee State University <i>Integrating Hands-On STEM Activities with Math and Reading Common Core Standards</i> Project Directors: Karin Keith and Jamie Price</p>	<p>\$199,437.00</p>
<p>East Tennessee State University <i>Incorporating Active Learning into Life Sciences Teaching</i> Project Directors: Tim McDowell and Aimee Govett</p>	<p>\$195,533.00</p>
<p>East Tennessee State University <i>PCMI: Professional Community of Modeling Instruction</i> Project Directors: Jack Rhoton and Peter Zhao</p>	<p>\$199,914.00</p>
<p>Lipscomb University <i>Functions of Algebra</i> Project Directors: Amy Nelson and Carrie Thornwaite</p>	<p>\$122,023.00</p>
<p>Lipscomb University <i>Integrating STEM: The Power of Science</i> Project Directors: Ben Hutchinson and Junior High</p>	<p>\$189,985.00</p>
<p>Lipscomb University <i>Making Mathematics Matter-Grades 4-7</i> Project Directors: Carroll Wells and Nina Morel</p>	<p>\$116,408.00</p>
<p>Middle Tennessee State University <i>StaRT: Statistical Reasoning and Thinking</i> Project Directors: Jeremy Strayer and Tammie Brown</p>	<p>\$199,988.00</p>
<p>Middle Tennessee State University <i>Project U C STEM: Understanding and Connecting STEM</i> Project Directors: Dovie Kimmins and Jeremy Winters</p>	<p>\$199,864.00</p>
<p>Tennessee Technological University <i>Designing the Future: Curriculum Development through Project-based Inquiry Using Design and Modeling Tools</i> Project Directors: Ismail Fidan and Julie Baker</p>	<p>\$189,578.00</p>
<p>Tennessee Technological University <i>From Earth to Space with STEM</i> Project Directors: Leslie Suters and Arthur Lee</p>	<p>\$199,731.00</p>

<p>Tennessee Technological University <i>Shaping Early STEM Learning</i> Project Directors: Jane Baker and Kara Fromke</p>	\$199,435.00
<p>Tennessee Technological University <i>STEM Around Us</i> Project Directors: Sally Pardue and Martha Howard</p>	\$198,706.00
<p>University of Memphis <i>Professional Development for Grades 5-8 STEM Teachers in Three Tennessee Counties</i> Project Directors: Donald Franceschetti and Mark Conley</p>	\$199,764.00
<p>University of Memphis <i>MOBILES, MATH, INQUIRY AND DATA (mMIND)</i> Project Directors: Michael Grant and Alistair Windsor</p>	\$199,553.00
<p>University of Memphis <i>Water, Water, Water, Everywhere: Environmental Engineering in Mid-South Waters</i> Project Directors: Angiline Powell and Daniel Larsen</p>	\$199,964.00
<p>University of Tennessee, Chattanooga <i>Learning Science through Writing</i> Project Directors: Lauren Ingraham and Jennifer Ellis</p>	\$197,109.00
<p>University of Tennessee, Martin <i>STEM-Integration for Middle School Teacher Academy (SIMS-TA)</i> Project Directors: Becky Cox and Ray Witmer</p>	\$200,000.00

Attachment C

Proposal Review Process

On February 1, 2012, a memo from Dr. Rhoda and the Request for Proposals (RFP) for STEM Professional Development proposals was distributed to college and university chancellors, presidents, deans, and faculty. The RFP included the background of the STEM competitive priority section of the Race to the Top application, the STEM Professional Development program goals and objectives, program guidelines, and submission requirements.

THEC First to the Top staff distributed the grant proposals to advisory committee members. The advisory committee met on May 27, 2012 to make recommendations for awards. The committee was divided into six groups, meeting separately to discuss the grants assigned to the respective teams. Each team chose their top proposals for funding and brought them before the entire committee.

The committee was given an overview of the proposals chosen for funding. The committee was given an opportunity to pose questions about the grant proposal, make recommendations or amendments, and discuss the level of funding the proposal should receive. Once each team presented the proposals recommended for funding, the committee voted on funding levels for each of the proposals and stated any required conditions for funding.