



**TOMORROW
STEMS
FROM IOWA**

GOVERNOR'S STEM ADVISORY COUNCIL

Orientation Guide

Overview

Governor Terry Branstad signed Executive Order 74 in July 2011 to establish the Iowa Governor's STEM (Science, Technology, Engineering and Mathematics) Advisory Council. The STEM Council is a public-private partnership with the mission to increase student interest and achievement in STEM and advance economic development in Iowa. Annually-funded by a legislative appropriation (Appendix A), the STEM Council also receives significant support from business and industry, colleges and universities, program providers and other cost-sharing partners, as well as state and national grants.

Iowa Governor Kim Reynolds and Analytical Laboratory Owner and Director of Technical Services Diane Young serve as co-chairs of the STEM Council, consisting of 62 leaders that represent higher education, PreK-12 schools, business and industry, nonprofits, government and more. The STEM Council develops and promotes STEM-specific policies, education programs, STEM events and other STEM resources for Iowans that are provided by way of the STEM Council operations team and the six regional STEM managers and their regional STEM advisory boards.

Mission Statement

The Governor's STEM Advisory Council mission is increasing interest and achievement in STEM (science, technology, engineering and mathematics) studies and careers through partnerships engaging preK-12 students, parents, educators, employers, non-profits, policy leaders and others. The Council provides opportunities that inspire Iowa's young people to become innovative, enterprising contributors to our future workforce and the quality of life in our communities.

Iowa STEM Events

Family STEM Festivals.

Each region hosts one or more family STEM festivals every year. The regional STEM manager engages (or assigns to a planner or planning committee) a broad range of partners throughout the region in organizing, presenting and participating in the event. STEM festivals are free, engaging, hands-on educational experiences for PreK-12 youth and their families.

STEM Day at the Iowa State Fair.

For this family-friendly event, we fill the Iowa State Fair's Grand Concourse with opportunities to learn about how STEM touches our lives daily. Fairgoers are able to engage in hands-on activities from dozens of organizations across the state, experience dynamic STEM stage acts and receive a free STEM drawstring backpack. www.iowaSTEM.org/STEM-Day-Fair

STEM Day at the Capitol.

With the goal of updating Iowa lawmakers on Iowa STEM, the STEM Council, alongside partners in STEM from across Iowa, talk with legislators to showcase student-focused learning innovations in the State Capitol Rotunda.

Iowa STEM Opportunities

STEM Scale-Up Program.

More than 50 percent of the annual state appropriation (\$3.4M) is devoted to delivering exemplary STEM programs to almost 2,000 educators throughout Iowa who collectively engage about 100,000 students every year. Programs undergo a competitive selection process to be added to the STEM Scale-Up Program menu. Educators can then apply for these programs. Each region evenly awards programs to Iowa schools, out-of-school programs and other settings for grades PreK-12. These programs range from building robots and wind turbines to virtual reality and STEM career awareness, demonstrating an appeal to diverse youth, success in improving academic performance, evidence of integrating STEM concepts, development of school+business partnerships and sustainability beyond the STEM Council's financial support. Students who participate in the STEM Scale-Up Program perform better on statewide tests than students who did not receive STEM Scale-Up Programming. (see Appendix B) www.iowaSTEM.org/Scale-Up

STEM BEST® (Businesses Engaging Students and Teachers) Program.

Since 2014, the STEM Council has awarded 118 cost-sharing, innovative and replicable Iowa STEM BEST® Programs that immerse students in professional career environments without the need for new buildings or classrooms. Funding supports professional development that equips teams of educators and business partners to provide learning experiences driven by business and industry needs, a rigorous, relevant and dynamic STEM curriculum and authentic partnerships. www.iowaSTEM.org/STEMBEST

Iowa STEM Teacher Externship Program.

The Teacher Externship Program places STEM teachers in Iowa workplaces for six weeks in the summer to work side-by-side with knowledgeable and skilled industry professionals who help bring their classroom curriculum to life. Teacher Externships provide educators with the exposure to answer questions about real-world application, how to prepare students for future careers and improve overall educational experiences. Since the Teacher Externship Program began in the summer of 2009, nearly 700 teachers have been placed in more than 200 local workplaces across Iowa.

www.iowaSTEM.org/Externships

Iowa STEM Teacher Award.

The STEM Council and Kemin Industries honors certified PreK-12 teachers in Iowa who teach a science, technology, engineering and/or mathematics subject and who are inspiring Iowa's students to develop a passion for STEM subjects and careers. The Iowa STEM Teacher Award is dedicated to honoring one teacher from each of the six Iowa STEM Regions for their contribution and dedication to STEM in Iowa. Each recipient receives a \$1,500 award and \$1,500 to be used in their classroom.

www.iowaSTEM.org/TeacherAward

Microsoft Imagine Academy.

The Microsoft Imagine Academy program is a software and systems certification program that bridges the world of education and work. The program is designed to help drive employability, digital literacy, technical, STEM-focused training and certification. The STEM Council and Microsoft Imagine Academy have partnered to provide 150 Iowa high schools and community colleges with the program. Since 2014, the program has helped certify more than 15,000 students in Microsoft Office programs.

www.iowaSTEM.org/MITA

STEM Seal of Approval.

The Seal is awarded to individual programs or periodic events in Iowa that significantly advance STEM principles and thinking in Iowa communities. www.iowaSTEM.org/Seal

Organizational Structure

Advisory Council and Executive Committee. The STEM Council members are appointed by and serve at the pleasure of the Governor, without compensation and in an advisory capacity. The STEM Council includes two elected officials from the Iowa House and two elected officials from the Iowa Senate, who are nonvoting, ex-officio members. The STEM Council is led by the co-chairs, Governor Kim Reynolds and Analytical Laboratory Owner and Director of Technical Services Diane Young, and an Executive Committee. www.iowaSTEM.org/Council.

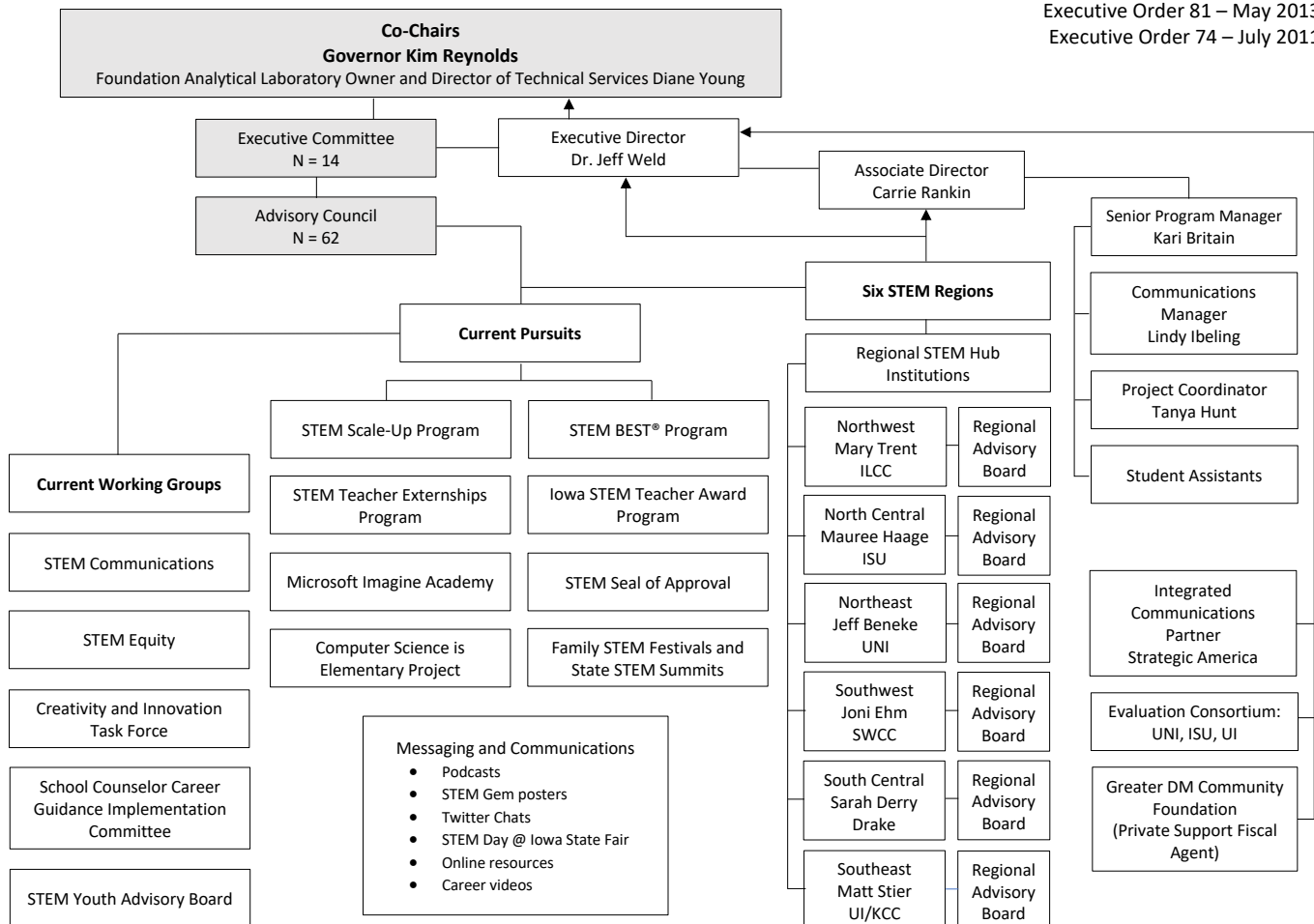
Regional STEM Managers. To deliver the promise of STEM to every corner of Iowa, the STEM Council partitioned the state into six regions, each operated by a regional STEM manager housed in a competitively bid, cost-sharing STEM Hub institution (page 8 and 9). Managers are the “boots on the ground” for the STEM Council in each region, delivering services, collaborating and creating community partnerships with business and industry, formal and informal educators and others.

Regional STEM Advisory Boards. Strategic visioning for each STEM Region is provided by its Regional STEM Advisory Board. Members of the six regional advisory boards also are appointed by the Governor. Each of the 15 seats represents a key stakeholder group, including educators, business and industry, workforce development, extension, libraries, parents, area education agencies and elected officials. Regional board members serve up to three years in staggered terms. Members must be registered voters in Iowa and reside or work within the region. www.iowaSTEM.org/Regions.

Governor’s STEM Advisory Council

Executive Order 81 – May 2013

Executive Order 74 – July 2011



Working Groups

Career Guidance Committee

CHARGE: Recommend strategies to enhance student career exploration and guidance, especially early exposure.

Creativity and Innovation Task Force

CHARGE: Recommend actions to honor and recognize the importance of the Arts, Humanities and other disciplines to the fulfillment potential for STEM-rich lives and careers of young Iowans.

Diversity, Equity and Inclusion in STEM

CHARGE: Recommend strategies to promote equity, especially means by which the Council can increase the participation rate of underrepresented students in current STEM programs.

Rural STEM Education in Iowa

CHARGE: Advise on ways and means for enhancing existing efforts and supporting new initiatives toward ensuring that Iowa's rural youth enjoy every opportunity to thrive in STEM education and the high-demand and rewarding careers that follow.

STEM Communications

CHARGE: Inform the STEM Council's direction for communicating to various audiences, including developing new materials and targeting audiences important to spreading the Iowa STEM message.

STEM Youth Advisory Council

CHARGE: Inform the STEM Council's direction and expand the STEM Council's reach to Iowa youth.

Iowa STEM Resources

Guidelines for School+Business Partnerships in STEM.

This handbook lists programs that bridge the world of business and education through the STEM Council. Iowa businesses are invited to invest in a variety of ways, whether in the form of time, talents or, in some instances, treasures. Positive change in the quality of our workforce comes from STEM education. Partnerships with businesses, nonprofit organizations and industries are very important to a dynamic STEM education. www.iowaSTEM.org/Corporate-Partners.

Iowa STEM Evaluation Report.

This yearly independent evaluation conducted by an inter-university consortium of evaluation centers at the University of Northern Iowa, the University of Iowa and Iowa State University shows the progress of STEM in Iowa, as well as highlights STEM Council program successes. www.iowaSTEM.org/Iowa-STEM-Evaluation

STEM Public Awareness Campaign. In 2013, year two of the STEM Council's existence, the need for public awareness of the STEM Council's mission had become apparent. Through competitive bidding, a cost-sharing public relations partner, Strategic America of West Des Moines, was identified to help with branding and messaging through web platforms, social media, cable and network television, billboards, events, fairs, news stories and more. Random surveys of adult Iowans revealed that the percentage aware of STEM and its importance grew from 26% in fall of 2013 to more than half of Iowans six years later.

STEM Council Operations Team



Jeffery Weld, Ph.D.

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Jeffrey D. Weld, Ph.D., is the executive director for the Governor's STEM Advisory Council and associate professor of biology at the University of Northern Iowa (UNI) in Cedar Falls, Iowa. Jeff served a one-year appointment to the White House Office of Science and Technology Policy in 2018 to develop the Federal five-year strategic plan for STEM education. Jeff has directed the Iowa Governor's STEM Advisory Council since fall 2011, and the Iowa Mathematics & Science Education Partnership, the Council's operations arm, since 2008. He has been a member of the UNI biology faculty since 2000. In 2007, Jeff was named the College Biology Teacher of the Year—four-year institutions—by the National Association of Biology Teachers. He has authored more than 50 research articles, essays, book chapters and the textbook, "The Game of Science Education," published in 2004, focusing on research into the barriers to innovative science teaching at the secondary and collegiate levels and how to overcome them. He is past president of the Iowa Science Teachers association and of UNI's chapter of Sigma Xi—the scientific research society.

Prior to joining UNI, Jeff served on the faculty at Oklahoma State University after earning a doctorate in science education with an emphasis in ecology and endocrinology from the University of Iowa in 1998. Formerly a high school biology and chemistry teacher in Mission, Texas; Kirkwood, Missouri; and Pella, Iowa, Jeff was named the Ciba-Geigy 1993 Life Science Teacher of the Year in Iowa; a 1994 recipient of the Pella Corporation Focus on Teaching Excellence award; and in 1995, one of 50 national Access Excellence Fellows of the Genentech corporation. Jeff serves on several state and national boards including the Board of Directors of the National Alliance for Partnerships in Equity Education Foundation and the Triangle Coalition for Science and Technology.



Carrie Rankin, B.A.

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Carrie Rankin is the associate director for the Governor's STEM Advisory Council. Carrie's primary responsibility is operational management of the STEM Council. She also develops corporate, private sector and grant partnerships on behalf of the STEM Council to further the investment in Iowa STEM Council initiatives.

Carrie brings more than 17 years of development experience to this position, previously serving as executive director with the Waterloo Schools Foundation, and as development director with both the Allen Hospital Foundation and University of Northern Iowa (UNI) Foundation.

A 1989 UNI graduate, Carrie earned her bachelor of arts in chemistry and marketing.



Kari Britain, MPA

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Kari Britain is the senior program manager of the Governor's STEM Advisory Council operations center. As program manager, she is responsible for the office operations, budget oversight and coordination of communication and efforts among all stakeholders involved with this partnership. Kari brings with her over 20 years of executive assistant experience in both the public and private sector. She also has an academic background in secondary education, office administration and public administration.



Lindy Ibeling, B.A.

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Lindy Ibeling is the communications manager for the Governor's STEM Advisory Council. As communications manager, she is responsible for strategic communications and marketing plans, implementation of regional and statewide communications, and conferences and events. Lindy brings more than 11 years of experience in public relations, event management, and marketing to this position. Most recently, she served as vice president of a public affairs and public relations firm, where she played a critical role in developing and implementing effective strategies for clients in a wide array of industries. Lindy is a graduate of Wartburg College where she earned her bachelor of arts in communications with a public relations emphasis and a business minor.



Tanya Hunt, B.S.

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Tanya Hunt is the project coordinator for the Governor's STEM Advisory Council. As a Project Coordinator she facilitates communication and promotion of our STEM Best programs throughout the state. Tanya has over 10 years of experience in working with the educational sector. Her specialty and background have been in facilitating and working within partnerships throughout the private and public sectors particularly in project development with school districts. Tanya obtained a Bachelor of Science Degree at the University of Wisconsin-Milwaukee in Occupational Therapy with a focus in Child Development and Family Services.

IOWA GOVERNOR'S STEM ADVISORY COUNCIL

Operations Center

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www.IowaSTEM.org

Regional STEM Managers



Mary Trent, M.A.

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Mary Trent is the Northwest Regional STEM Manager for the Governor's STEM Advisory Council and located at Iowa Lakes Community College. After graduating from Iowa State University with a Bachelor of Science in Elementary Education and a minor in Educational Computing, Mary spent 22 years at Kuemper Catholic School in Carroll as a first grade teacher and technology integration specialist. During that time, she also taught many courses through Heartland AEA and AEA PD Online. Mary later graduated from Morningside College with Master's Degree in Professional Education.



Mauree Haage, M.A.

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Mauree Haage has been a science and computer science teacher for the past 10 years; most currently teaching at North Mahaska Jr/Sr High in New Sharon, Iowa. She received her Bachelor of Science in Secondary Science Education from the University of Nebraska - Lincoln and her Master of Arts in Science Education from the University of Northern Iowa. She is passionate about introducing students and teachers to the world of STEM and firmly believes all students should have access to quality science education and opportunities. In addition to her teaching background, Mauree has also been a member of the South Central Iowa STEM advisory board for six years (three of those as co-chair), as well as helping on several state workgroups advocating and providing recommendations for STEM, computer science education, and computer science standards for the youth of Iowa.



Jeff Beneke, B.S.

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Jeff Beneke serves as the Northeast Regional STEM Manager for the Governor's STEM Advisory Council and located at the University of Northern Iowa. He spearheads work across Northeast Iowa to ensure the Governor's STEM Advisory Council's mission and programs are implemented to their broadest audience, including STEM Scale-Up Program application recruitment, communications planning, STEM family festival work and collaboration with organizations across the region. Jeff brings nearly 20 years of experience in the energy and environmental fields, ranging from laboratory bench work at Test America to business and industry consulting at the Iowa Waste Reduction Center to organizational management for the Iowa Association for Energy Efficiency.





Joni Ehm, M.A.

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Joni Ehm is the Southwest Regional STEM Manager for the Governor’s STEM Advisory Council and located at Southwestern Community College. Joni earned a Bachelor of Science in Spanish & Public Administration from Iowa State University and a Master’s Degree in Education from Kaplan University. In her educational career, she worked for twelve years as a secondary Spanish teacher and instructional coach at a rural school district. She then worked as an educational consultant for the AEA system, with a focus on instructional best practices in technology integration and authentic learning and STEM learning opportunities.



Sarah Derry, Ph.D.

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Dr. Sarah Derry is the South Central Regional STEM Manager for the Governor’s STEM Advisory Council and located at Drake University. Sarah earned a B.S. in genetics from Iowa State University and a Ph.D. in developmental biology from the University of Iowa. She has conducted research in commercial and academic laboratories. Sarah started her career as a science teacher in a low-income, urban high school.



Matt Stier, M.A.

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Matt Stier is the Southeast Regional STEM Manager for the Governor’s STEM Advisory Council and is located at the Kirkwood Regional Center at the University of Iowa. He brings 20 years of experience in education. Throughout his career, he has served as a high school science educator, professional development leader, educational researcher, and college instructor. Matt is passionate about supporting the work of educators and promoting educational equity for students. He received a bachelor’s degree in Biology from Saint Mary’s University of Minnesota and a master’s in Science Education from the University of Northern Iowa, and is in the process of completing his doctorate in Educational Leadership from the University of Iowa.



Office of the Governor of Iowa

TERRY BRANSTAD

Gov. Branstad signs Executive Order 74; creates Governor's STEM Advisory Council

Date: July 26, 2011

Gov. Terry Branstad today signed [Executive Order 74](#), creating the Governor's Science Technology, Engineering and Mathematics ("STEM") Advisory Council.

"I am pleased today to sign Executive Order 74, establishing the Governor's STEM Advisory Council," said Branstad. "An increased focus in science, technology, engineering and math will lead to higher achievement and better career opportunities."

The signing of Executive Order 74 followed Lt. Gov. Kim Reynolds speech at the Iowa Education Summit where she said, "It's not enough for Iowa to become the top-performing education state again. Our schools must be competitive with the top-performing school systems around the world. As the Advisory Council collaborates with the public and private sectors to promote STEM, the possibilities are promising."

The purpose of the Advisory Council will be advising the governor on ways to improve STEM education, STEM innovation and STEM careers in the public and private sectors. The Council shall be composed of no more than 40 members appointed by the governor. Each member will serve at the pleasure of the governor without compensation and in an advisory capacity.

Gov. Branstad has asked Lt. Gov. Kim Reynolds to co-chair the committee with University of Northern Iowa President, Ben Allen.

For more information, please visit www.governor.iowa.gov.

Preferred Logos

**TOMORROW
STEMS
FROM IOWA**

GOVERNOR'S STEM ADVISORY COUNCIL

dedicated to building a strong STEM education foundation for all Iowans

**TOMORROW
STEMS
FROM IOWA**

**IOWA STATE
UNIVERSITY**
NORTH CENTRAL IOWA REGION
GOVERNOR'S STEM ADVISORY COUNCIL

**TOMORROW
STEMS
FROM IOWA**

UNI / University of
Northern Iowa
NORTHEAST IOWA REGION
GOVERNOR'S STEM ADVISORY COUNCIL

**TOMORROW
STEMS
FROM IOWA**

**IOWA LAKES
COMMUNITY COLLEGE**
NORTHWEST IOWA REGION
GOVERNOR'S STEM ADVISORY COUNCIL

**TOMORROW
STEMS
FROM IOWA**

**Drake
UNIVERSITY**
SOUTH CENTRAL IOWA REGION
GOVERNOR'S STEM ADVISORY COUNCIL

**TOMORROW
STEMS
FROM IOWA**

**THE UNIVERSITY
OF IOWA** **Kirkwood
COMMUNITY COLLEGE**
SOUTHEAST IOWA REGION
GOVERNOR'S STEM ADVISORY COUNCIL

**TOMORROW
STEMS
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SWiCC
Southwestern Community College
SOUTHWEST IOWA REGION
GOVERNOR'S STEM ADVISORY COUNCIL

Social Media



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Iowa Governor's STEM
Advisory Council



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APPENDIX A
Legislation
(2014)

FY 2014 STEM

c. Science, technology, engineering and mathematics (STEM) collaborative initiative

For purposes of the science, technology, engineering, and mathematics (STEM) collaborative initiative established pursuant to section 268.7, and for not more than the following full-time equivalent positions:
\$ 5,200,000 FTEs 6.20

- (1) Except as otherwise provided in this lettered paragraph, the moneys appropriated in this lettered paragraph shall be expended for salaries, staffing, institutional support, activities directly related to recruitment of kindergarten through grade 12 mathematics and science teachers, and for ongoing mathematics and science programming for students enrolled in kindergarten through grade 12.
- (2) The University of Northern Iowa shall work with the community colleges to develop STEM professional development programs for community college instructors and STEM curriculum development.
- (3) From the moneys appropriated in this lettered paragraph, not less than \$500,000 nor more than \$1,000,000 shall be used to provide technology education opportunities to high school, career academy and community college students through a public-private partnership, as well as opportunities for students and faculties at these institutions to secure broad-based information technology certification. The Iowa governor's STEM advisory council shall utilize a request for proposals process for contracts to make available, through the regional STEM network hubs, at high schools, career academies and community colleges, instruction on skills and competencies that are essential for the

workplace and which are requested by Iowa's employers. Such a contract shall include the following components:

- (a) A research-based curriculum.
- (b) Online access to the curriculum.
- (c) Instructional software for classroom and student use.
- (d) Certification of skills and competencies in a broad base of information technology-related skill areas.
- (e) Professional development for teachers.
- (f) Deployment and program support, including but not limited to integration with current curriculum standards.

HIGHER STUDENT ACHIEVEMENT IN STEM

Students who participated in the STEM Scale-Up Program performed better on statewide tests than students who did not receive STEM Scale-Up Programming. This is consistent among students of all gender and race subgroups. In 2020-2021, STEM Scale-Up Program participants in grades 3 through 11 scored an average of 3 points higher in mathematics and 1 point higher in science.

