PreK-12 STEM Education Innovations

Board on Science Education - NASEM
December 07, 2023

Iowa STEM – *Funding – Structure – Programs – ROI*

Jeff Weld, Ph.D., executive director*

*(2011 thru 12-01-2023)

TOMORROW STEMS FROM IOWA

GOVERNOR'S STEM ADVISORY COUNCIL

dedicated to building a strong STEM education foundation for all Iowans

Funding

1.

Iowa STEM Education Roadmap

A Strategic Plan for Science, Technology, Engineering and Mathematics (STEM) Education

2011

2.

State of Iowa

Executive Department

IN THE NAME AND BY THE AUTHORITY OF THE STATE OF IOWA

EXECUTIVE ORDER NUMBER SEVENTY-FOUR

WHEREAS, strong science, technology, engineering and mathematics (STEM) education is essential to prepare the young people of Iowa for a competitive, global economy; and

WHEREAS, scientific literacy is also the foundation of being a good citizen; and

WHEREAS, the Iowa Constitution encourages a strong educational foundation by providing that "[t]he General Assembly shall encourage, by all suitable means, the promotion of intellectual, scientific, moral, and agricultural improvement" (Iowa Const. art. IX, 2d, § 3); and

WHEREAS, the General Assembly has encouraged math and science education, including engineering and technology education, through several Acts of the General Assembly; and

WHEREAS, raising achievement in STEM subjects from preschool through higher education opens doors to STEM careers and strengthens Iowa's workforce; and

WHEREAS, an emphasis on reaching out to minority, low-income and other underrepresented students to encourage interest in STEM is vital; and

WHEREAS, innovative STEM research at colleges and universities and by private business and industry is key to creating jobs for a more vibrant economy; and

WHEREAS, the people and State of Iowa will be well served by a statewide advisory council charged with establishing a collaborative vision to promote STEM education.

NOW, THEREFORE, I, Terry E. Branstad, Governor of the State of Iowa, declare that science, technology, engineering and mathematics education should be strengthened as part of providing a world-class education, encouraging innovation and enhancing economic development. I hereby order the creation of the Governor's Science Technology, Engineering and Mathematics ("STEM") Advisory Council.

1. **Purpose:** The Governor's STEM Advisory Council shall advise the Governor on ways to improve STEM education, STEM innovation and STEM careers in the public and private sectors.

2. **Organization:** 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. The Council shall be led by an Executive Committee. In addition to the Executive Committee, the Governor shall appoint to the Council:

   a. representatives with STEM qualifications from the following sectors, including but not limited to: advanced manufacturing, agribusiness, biotechnology, clean energy.

3.

Legislative Appropriation

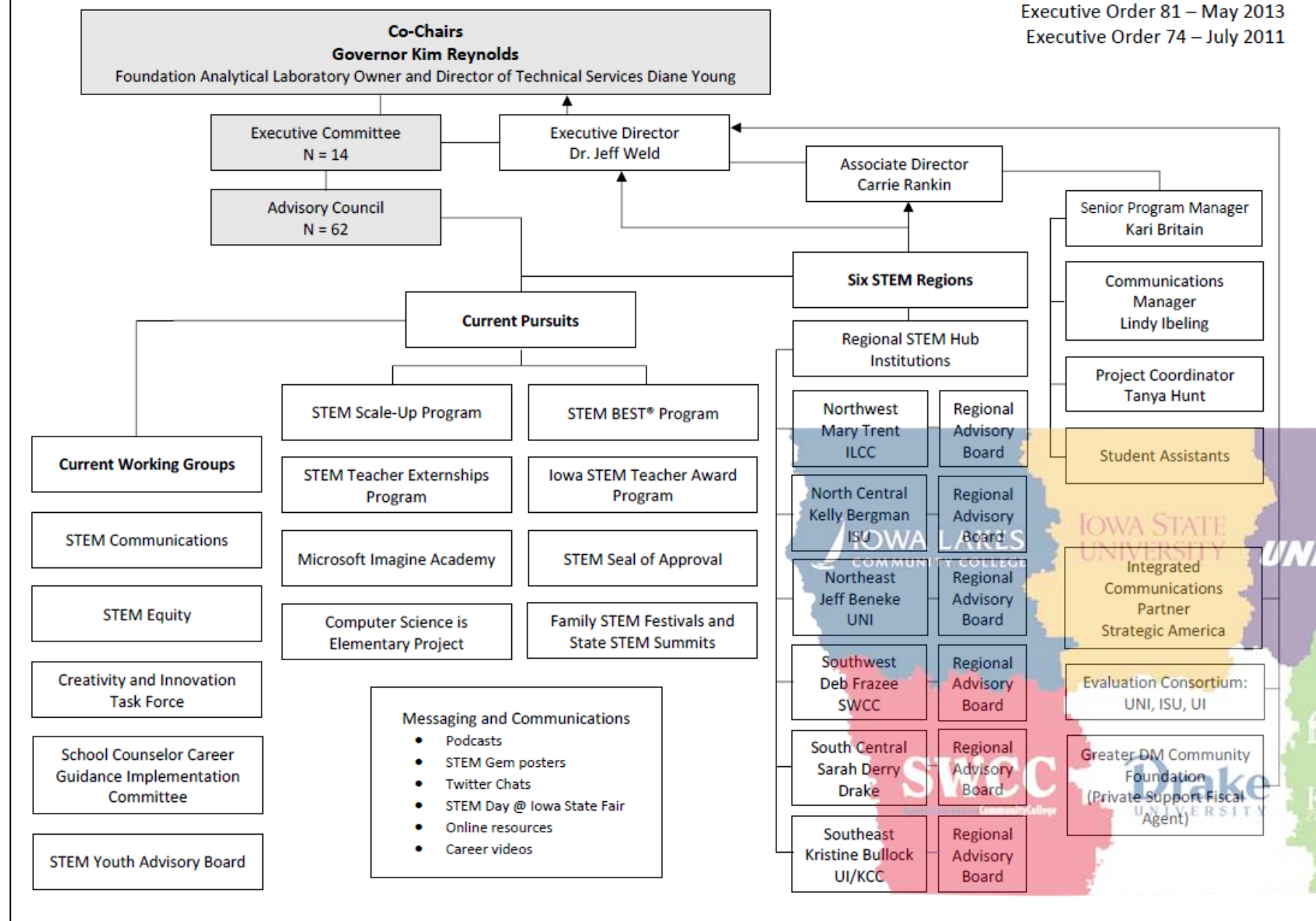Science, technology, engineering, and mathematics (STEM) collaborative initiative

For purposes of the science, technology, engineering, and mathematics (STEM) collaborative initiative established pursuant to section 268.7,................... $ 6,354,848

Structure

Governor's STEM Advisory Council

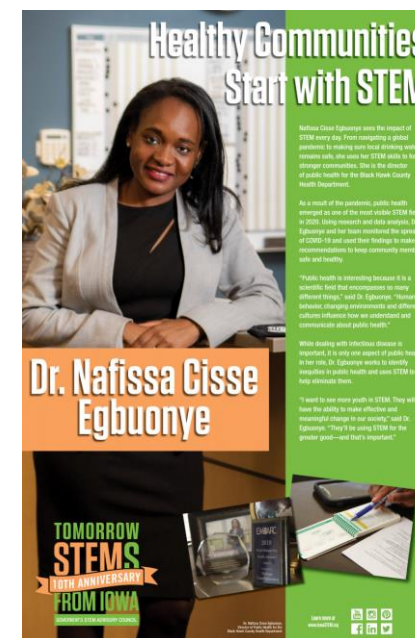Executive Order 81 – May 2013
Executive Order 74 – July 2011

Co-Chairs
Governor Kim Reynolds
Foundation Analytical Laboratory Owner and Director of Technical Services Diane Young

Executive Committee
N = 14

Executive Director
Dr. Jeff Weld

Associate Director
Carrie Rankin

Advisory Council
N = 62

Senior Program Manager
Kari Britain

Six STEM Regions

Communications Manager
Lindy Ibeling

Regional STEM Hub Institutions

Project Coordinator
Tanya Hunt

Current Pursuits

| STEM Scale-Up Program | STEM BEST® Program |

| Northwest Mary Trent ILCC | Regional Advisory Board |

Student Assistants

Current Working Groups

| STEM Teacher Externships Program | Iowa STEM Teacher Award Program |

| North Central Kelly Bergman ISU | Regional Advisory Board |

Integrated Communications Partner Strategic America

STEM Communications

| Microsoft Imagine Academy | STEM Seal of Approval |

| Northeast Jeff Beneke UNI | Regional Advisory Board |

STEM Equity

| Computer Science is Elementary Project | Family STEM Festivals and State STEM Summits |

| Southwest Deb Frazee SWCC | Regional Advisory Board |

Evaluation Consortium: UNI, ISU, UI

Creativity and Innovation Task Force

Messaging and Communications
- Podcasts
- STEM Gem posters
- Twitter Chats
- STEM Day @ Iowa State Fair
- Online resources
- Career videos

| South Central Sarah Derry Drake | Regional Advisory Board |

Greater DM Community Foundation (Private Support Fiscal Agent)

School Counselor Career Guidance Implementation Committee

| Southeast Kristine Bullock UI/KCC | Regional Advisory Board |

STEM Youth Advisory Board

Programs

STEM SCALE-UP PROGRAM

STEM BEST PROGRAM

IOWA STEM TEACHER EXTERNSHIPS PROGRAM

IOWA STEM TEACHER AWARD
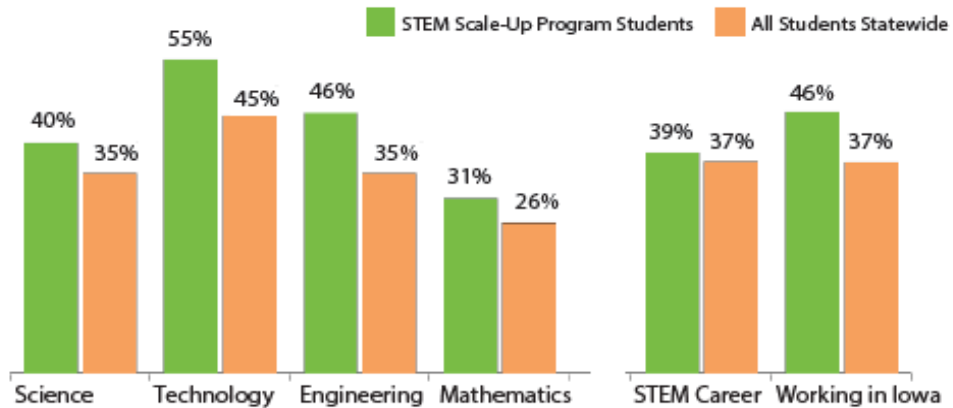Proudly Sponsored by: KEMIN

Summits, Festivals, Teacher Scholarships
Comp Sci Elementaries, WBL District Plans,
Newsletters, Blogs, Podcasts
Career Videos, Seal of Approval
Parent Resources, STEM Gem Posters
Business Resources, Working Groups – DEI,
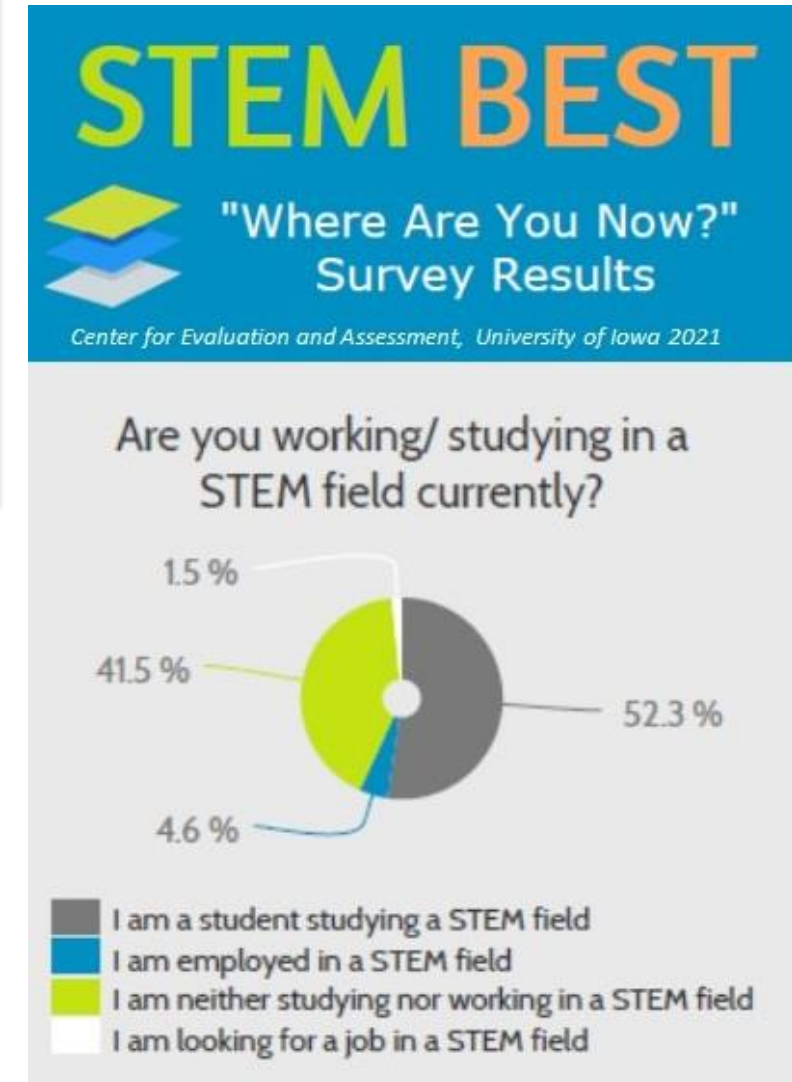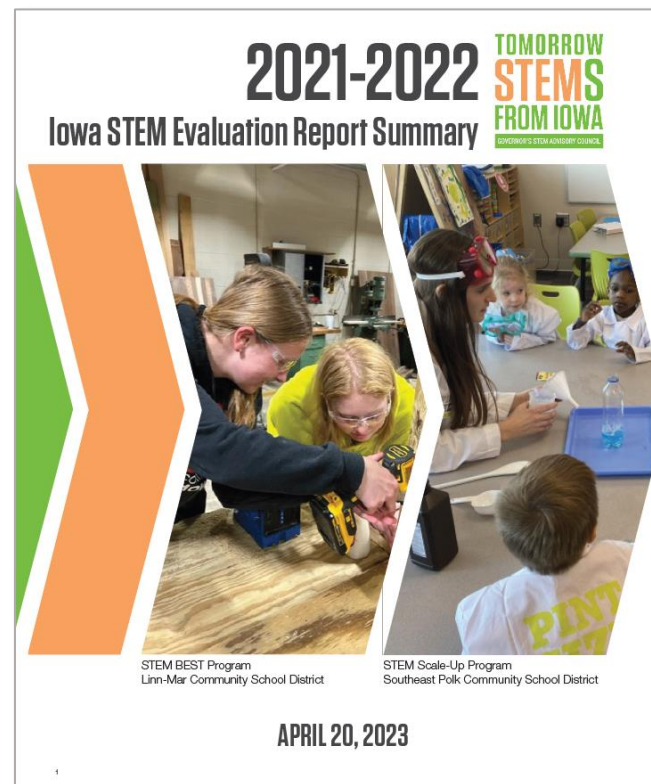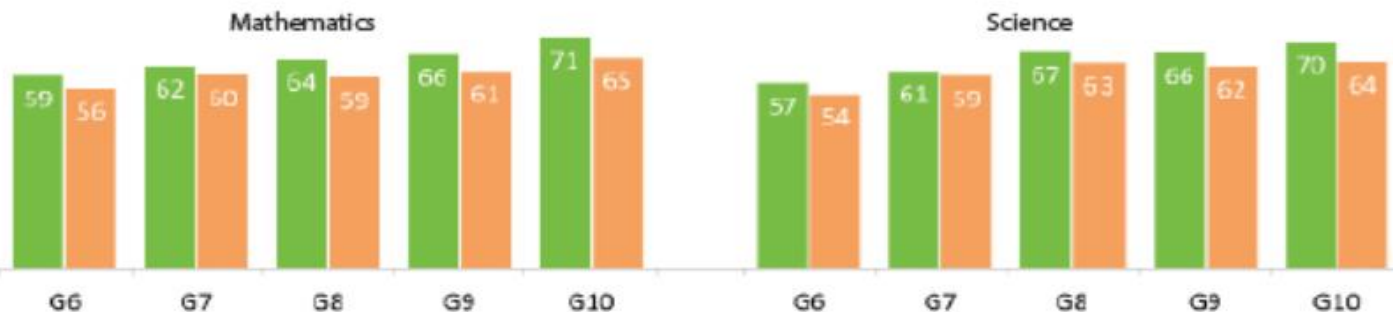*Rural, Arts, CS, YAB, TV and radio spots*

Healthy Communities Start with STEM
Dr. Nafissa Cisse Egbuonye
TOMORROW STEMS FROM IOWA

ROI

STUDENT INTEREST IN STEM

Legend: STEM Scale-Up Program Students (green) / All Students Statewide (orange)

Category	STEM Scale-Up Program Students	All Students Statewide
Science	40%	35%
Technology	55%	45%
Engineering	46%	35%
Mathematics	31%	26%
STEM Career	39%	37%
Working in Iowa	46%	37%

ACADEMIC PERFORMANCE

Mathematics

Grade	STEM	Statewide
G6	59	56
G7	62	60
G8	64	59
G9	66	61
G10	71	65

Science

Grade	STEM	Statewide
G6	57	54
G7	61	59
G8	67	63
G9	66	62
G10	70	64

2021-2022
Iowa STEM Evaluation Report Summary

TOMORROW **STEMS** FROM IOWA
GOVERNOR'S STEM ADVISORY COUNCIL

STEM BEST Program
Linn-Mar Community School District

STEM Scale-Up Program
Southeast Polk Community School District

APRIL 20, 2023

STEM BEST

"Where Are You Now?"
Survey Results

Center for Evaluation and Assessment, University of Iowa 2021

Are you working/ studying in a STEM field currently?

- 1.5 %
- 41.5 %
- 52.3 %
- 4.6 %

Legend:
- I am a student studying a STEM field
- I am employed in a STEM field
- I am neither studying nor working in a STEM field
- I am looking for a job in a STEM field

Barriers. Hurdles. Impediments. Constraints