

Exhibit Specifications
**STEMinists: Michigan Women in Science, Technology,
Engineering, and Mathematics**

Panels:

- 8 Circular panels, measuring 5.5" diameter
- 7 Circular panels, measuring 8.5" diameter
- 3 Circular panels, measuring 9" diameter
- 2 Circular panels, measuring 9.25" diameter
- 8 Circular panels, measuring 9.5" diameter
- 3 Circular panels, measuring 10" diameter
- 3 Circular panels, measuring 10.5" diameter
- 2 Circular panels, measuring 10.75" diameter
- 1 Circular panels, measuring 11" diameter
- 1 Circular panels, measuring 11.25" diameter
- 2 Circular panels, measuring 11.5" diameter
- 3 Circular panels, measuring 13" diameter
- 1 Circular panels, measuring 18" diameter
- 1 Circular panels, measuring 27.625" diameter
- 1 Opening panels, measuring 84.375" H x 32.313" W
- 1 Text panels, measuring 22" H x 22" W
- 1 Text panels, measuring 12" H x 48" W
- 1 Text panels, measuring 25" H x 28" W
- 1 Text panels, measuring 14.5" H x 17.7" W
- 1 Text panels, measuring 9.75" H x 18.75" W
- 1 Text panels, measuring 25.5" H x 8.25" W
- 1 Text panels, measuring 13.5" H x 33" W
- 1 Text panels, measuring 16.5" H x 33.5" W
- 1 Text panels, measuring 30.5" H x 24.5" W
- 1 Text panels, measuring 7" H x 65.5" W
- 1 Text panels, measuring 33.75" H x 25.75" W
- 1 Text panels, measuring 15" H x 19.5" W
- 1 Text panels, measuring 20.5" H x 22.125" W
- 1 Text panels, measuring 20.5" H x 19.5" W
- 1 Text panels, measuring 33.5" H x 12.5" W
- 1 Text panels, measuring 17.625" H x 19" W
- 1 Text panels, measuring 19" H x 24.5" W
- 1 Text panels, measuring 31.5" H x 14.5" W
- 1 Text panels, measuring 8.5" H x 15" W

- 1 Text panels, measuring 15.5" H x 30.5" W
- 1 Text panels, measuring 7" H x 68.25" W
- 1 Text panels, measuring 33.5" H x 16" W
- 1 Text panels, measuring 30" H x 29.5" W
- 1 Text panels, measuring 17.5" H x 16" W
- 1 Text panels, measuring 9.75" H x 17.75" W
- 2 Text panels, measuring 30.5" H x 15.5" W
- 1 Text panels, measuring 46.5" H x 17.75" W
- 1 Text panels, measuring 16.5" H x 34.5" W
- 1 Text panels, measuring 37.5" H x 20.75 W
- 1 Sponsor panel, measuring 18" H x 12.125" W

Optional:

- 2 General Motors Research Staff binary cards, measuring 7.5" H x 3.25" W

Interactive Elements:

- 1 Question and Answer flip board, measuring 5.5" H x 8.25" W

Panel Descriptions: *Panels are organized by sections of STEM: science, technology, engineering, mathematics.*

Michigan Women in STEM (84.375" H x 32.313" W)

Introductory panel to the exhibit. Included are percentages of STEM degrees earned by women.

Picture (13" diameter)

Two women looking at a test tube.

Picture (13" diameter)

Young woman with a microscope.

Picture (9.5" diameter)

Female racecar driver.

Career by Design (27.625" diameter)

Even though there are four categories in STEM, they often overlap in a single career. For example, a civil engineer uses math, science, and technology.

Title IX (22" H x 22" W)

Describes what the law is and how it has helped open many doors for women. Also, gives examples of the invisible barriers women still face today.

Circles - 8 (5.5" diameter)

Eight circles each having their own letter to spell the words S-T-E-M and S-T-A-Ts.

Text Panel (8.5" diameter)

Describes what the line graph below it is showing.

Line Graph (25" H x 28" W)

The graph is indicating the percentage of bachelor's degrees in STEM earned by women over the past 30 years.

Pie Charts (14.5" H x 17.5" W)

Two charts depicting the percentage of women in the U.S. workforce and what percentage of those women work in a STEM field.

Text Panel (9.75" H x 18.75" W)

General facts about women who earn a degree in a STEM field.

Bar Graph (25.5" H x 8.25" W)

Shows the comparison of job earnings between men and women in STEM jobs and non-STEM jobs.

STEM (13.5" H x 33" W)

Science, Technology, Engineering, Mathematics

Text Panel (16.5" H x 33.5" W)

Quote by Carol Dweck, Lewis and Virginia Eaton Professor of Psychology at Stanford University and a leading researcher in the field of student motivation.

Picture (11.25" diameter)

A woman in her lab wearing a white coat and safety glasses.

Why You'll Love a Career in STEM (30.5" H x 24.5" W)

Ten reasons why women (and men) would love to make their career in a stem field.

Picture (18" diameter)

A woman in her lab working with small samples for centrifuging.

Picture (9" diameter)

A woman pointing to a geographical location on a map.

Science (17.625" H x 19" W)

A very general description of science and also poses the question "What real world problems do scientists solve?"

Elizabeth H. Simmons (15.5" H x 30.5" W)

Dean of Lyman Briggs College and Professor of Physics in the Department of Physics and Astronomy in the College of Natural Sciences, Michigan State University, East Lansing, MI.

Science: Physics (10.5" diameter)

A brief description of the field of physics and the diversity of careers available such as working for NASA.

Science: Biochemists (9.5" diameter)

A brief description of the range of possibilities open to a biochemist.

Science: Neuroscientists (10.75" diameter)

A brief description of neuroscience as a collaborative field that seeks to treat and cure neurological disorders.

Elizabeth Crosby (19" H x 24.5" W)

(1888-1983) Petersburg, MI. She graduated with a PhD in 1916 and taught at the University of Michigan Medical School from 1920-1958. She molded the young minds of around 8,500 students.

Science: Immunologists (9.25" diameter)

A brief description of how immunologists investigate what causes sickness and how to treat / prevent it.

Science: Geologists (9" diameter)

A brief description of how geologists study the earth of the past and present to better shape the future.

Science: Dieticians (10.5" diameter)

A brief description of how dieticians study connections between nutrition and health to better analyze human conditions.

Icie Macy Hoobler (31.5" H x 14.5" W)

(1892-1984) Detroit, MI. An experience on a trip to the Ozarks of Arkansas as a child led her to study child nutrition and development. Her research on breast milk was the first of its kind and provided much new and needed information.

Text Panel (8.5" H x 15" W)

Asks the question, "Did you know that girls do as well as boys in science and math at school even though more boys go on to further study in science, technology, and engineering?"

Science: Chemistry (8.5" diameter)

A brief description of what chemistry is and how it can be applied.

Science: Zoologists (10" diameter)

A brief description of what zoologists do and how their job relates to the scientific world.

Technology (7" H x 65.5" W)

Provides a general description of the technology field and poses the question: "What real world problems does technology solve?"

Technology: Computer Programmers (8.5" diameter)

Provides brief description of what computer programmers do.

Eva Packard (33.75" H x 25.75" W)

She is a retired Systems Manager from General Motors, Warren, MI. In the late 1950's Eva made more money at GM than her female teacher friends but significantly less than her male coworkers. Also, provided is her "story" of how she became interested in such a field. Picture of Eva and her female colleagues.

Saluting Women in Science (15" H x 19.5" W)

Blowup of 1962 article from GM's internal magazine on the novelty of women working in professional STEM positions.

Technology: Software Developers (11.5" diameter)

Provides brief description of what it means to be a software developer.

Kathleen Kay (20.5" H x 22.125" W)

Senior Vice President, Application Delivery Services, Suntrust Bank, Atlanta, GA (originally from Detroit, MI).

Technology: Chief Information Officer (9" diameter)

A brief description of the vast and important responsibilities of a Chief Information Officer.

Mamatha Chamarthi (20.5" H x 19.5" W)

Vice President and CIO, Consumers Energy, Jackson, MI. She guides and shapes how her company thinks about and uses technology.

Technology: Website Developers (11" diameter)

A brief description of what being a website developer entails and how it can be a very creative job.

Technology: Computer Engineers (9.25" diameter)

A brief description of the innovative field of computer engineering.

Charlotte Decker (33.5" H x 12.5" W)

Vice President and Chief Technology Officer, The Auto Club Group, Dearborn, MI.

Technology: Computer Systems Administration (8.5" diameter)

A brief description of how a Computer Systems Administrator is responsible for a company running smoothly.

Engineering (17.5" H x 16" W)

Provides brief description of engineers as problem solvers of design, creation, and innovation. Poses the question, "What real world problems do engineers solve?"

Engineering: Environmental Engineers (8.5" diameter)

Brief description of environmental engineers who create equipment to promote a cleaner environment and develop plans to protect the environment.

Paula Hammond(16.5" H x 34.5" W)

David H. Koch Chair of Engineering in the Department of Chemical Engineering at MIT and member of the Koch Institute of Integrative Cancer Research, Cambridge, MA (originally from Detroit, MI).

Engineering: Chemical Engineers (9.5" diameter)

Brief description of chemical engineering and how it can be used in various fields from chemical manufacturing to food processing.

Engineering: Software Engineers (13" diameter)

This type of engineering is closely related to computer engineering but is more specialized.

Engineering: Nuclear Engineers (9.5" diameter)

A brief description of the important yet dangerous field of nuclear engineering.

Engineering: Materials Engineers (8.5" diameter)

These engineers develop and enhance various types of materials such as metals, plastics, ceramics, etc.

Engineering: Biomedical Engineers (8.5" diameter)

These engineers work in various aspects of medicine using technology to study and treat biological/medical problems.

Engineering: Mechanical Engineers (10" diameter)

Mechanical engineers are the creators of tools, engines, machines, and other devices.

Lisa Drake (30.5" H x 15.5" W)

Chief Engineer, Lincoln Motor Company, A Division of the Ford Motor Company, Dearborn, MI.

Engineering: Aerospace Engineers (10" diameter)

These engineers develop and enhance various types of materials such as metals, plastics, ceramics, etc.

Jenni Glauser (37.5" H x 20.75" W)

Former Propulsion Systems Analysis and Validation Engineer, Pratt and Whitney, East Hartford, Connecticut (lives in Canton, MI).

Engineering: Industrial Engineers (9.5" diameter)

Brief description of what industrial engineers do to earn the nicknames "productivity people" and "efficiency experts."

Engineering:Electrical Engineers (9.5" diameter)

This field of engineering works with electricity in many forms such as space communications or industrial robotics.

Engineering: Civil Engineers (9.5" diameter)

Civil engineers bring to life everything from buildings to dams to airports and much more.

Julie Neph and Kim Nowack (46.5" H x 17.75" W)

Julie Neph: Transportation Engineer, Mackinac Bridge, Michigan Department of Transportation, St. Ignace, MI.
Kim Nowack: Chief Engineer, Mackinac Bridge, Michigan Department of Transportation, St. Ignace, MI. These two women are responsible for the maintenance of the Mackinac Bridge.

Mathematics (7" H x 68.25" W)

Provides a brief overview of mathematics; it is more than just numbers. The question is posed, "What real world problems do mathematicians solve?"

Mathematics: Statistics (9.5" diameter)

A brief description of statistics and how it can apply to medicine, manufacturing, market research, etc.

Mathematics: Actuaries (10.75" diameter)

A brief description of how actuaries manage risk and traditionally worked for insurance companies but have branched into the government and businesses such as banks.

Elizabeth Harr (33.5" H x 16" W)

President and CEO, Accident Fund Holdings, Inc. Lansing, MI.

Patti Lamm (30.5" H x 15.5" W)

Professor of Mathematics at Michigan State University East Lansing, MI.

Mathematics: Mathematicians (11.5" diameter)

A brief description of how mathematicians problem solve in both practical and abstract situations.

Text Panel (9.75" H x 17.75" W)

Quote by Shelley Correll, Associate Professor of Sociology at Stanford University: "Boys do not pursue mathematical activities at a higher rate than girls do because they are better at mathematics. They do so, at least partially, because they *think* they are better."

Elizabeth Phillips and Glenda Lappan (30" H x 329.5" W)

Elizabeth Phillips: Senior Academic Specialist in the Mathematics Department of Michigan State University, East Lansing, MI. Glenda Lappan: University Distinguished Professor in the Department of Mathematics at Michigan State University, East Lansing, MI. Together they developed the Connected Mathematics method to teach future K-12 teachers how to teach math.

Mathematics: Teaching (10.5" diameter)

A brief description of how important it is to have well trained teachers of math to introduce this interesting process of thinking and logic to students.

Exhibit Sponsors (18" H x 12.125" W)

Acknowledgement of the sponsors that supported the creation of this exhibit at the Gold, Silver, Bronze, and Copper levels.

Notes:

1. The exhibit, which occupies 90 linear feet of space, may be rented for a fee of \$125 per week for a minimum of four weeks.
2. All text and photo panels can be hung by Velcro on a fabric surface or by hook on plastered walls (plastic tab hooks can be placed on the back of panels).
3. The exhibit must be picked up from and delivered back to the Michigan Women's Historical Center's warehouse (1231 Roth Dr, Lansing, MI 48911) by minivan, station wagon, or covered pick-up truck at the renter's cost.