S. 1602 - Mathematical and Statistical Modeling Education Act

Section 1. Short title.
This section provides that the short title is "Mathematical and Statistical Modeling Education Act."

Section 2. Mathematical and Statistical Modeling Education.
This section provides findings of Congress related to the importance of mathematical and statistical modeling education and provides definitions for several terms. This section also outlines requirements for competitive grant applications submitted to the Director of the National Science Foundation, as well as parameters for how funds may be spent.

Findings.
Sec. 2(a) includes findings of Congress including that Congress finds that there is a STEM skills shortage and that the U.S. is not on track to produce the number of STEM professionals needed to keep up with public and private sector workforce needs. Rapidly emerging fields, such as artificial intelligence, machine learning, quantum computing and quantum information, all rely on mathematical and statistical concepts, which are critical to prove under what circumstances an algorithm or experiment will work and when it will fail. Building a strong STEM workforce that is skilled in mathematical and statistical modeling will help the U.S. compete globally.

Definitions.
Sec. 2(b) defines terms used within the bill.

Preparing Educators to Engage Students in Mathematical and Statistical Modeling.
Sec. 2(c) requires the Director of the National Science Foundation to make awards on a merit-reviewed, competitive basis to institutions of higher education and nonprofit organizations (or a consortium thereof) for research and development to advance innovative approaches to support and sustain high-quality mathematical modeling education in schools. The Director must encourage applicants to form partnerships to address critical transitions such as middle to high school, high school to postsecondary education, or school to internships or jobs.

Application.
Sec. 2(d) details the competitive grant application requirements including that an application must include a description of the target population to be served by the research activity, a description of the process for recruiting and selecting participating students, educators, or local educational agencies in the activity, a description of how the activity will inform efforts to promote mathematical and statistical modeling education, and a plan for establishing a sustained partnership, as applicable.

Partnerships.
Sec. 2(e) requires the Director of the National Science Foundation to encourage applications that include partners with extensive experience and expertise in increasing the participation of students in prekindergarten through grade 12 in mathematical modeling and statistical modeling. Partnerships must address critical transitions such as middle to high school, high school to postsecondary education, or school to internships or jobs; include input from education

researchers, cognitive scientists, and practitioners in research and industry; include a communications strategy for parents, school leaders, and other stakeholders; and include resources for those same stakeholders to build skills in modeling and analytics.

Use of Funds.
Sec. 2(f) details how competitively awarded grant funds may be used for research and development activities to advance high-quality mathematical modeling education in public schools, which can include professional development for educators, providing students with project-based learning opportunities, designing and developing pre-service and in-service training resources to assist educators in adopting transdisciplinary teaching practices, developing partnerships between educators and employers to help educators and students make connections between their mathematics and statistics projects and topics of relevance in today's world, and other activities.

Evaluations.
Sec. 2(g) states that all proposals must include an evaluation plan to assess the impact and efficacy of the award. Each grant recipient shall include evaluative results in annual and final project reports.

Accountability and Dissemination.
Sec. 2(h) requires the Director of the National Science Foundation to evaluate the portfolio of grants awarded. Not later than 180 days after the evaluation is completed, the Director must submit a report to Congress and the public detailing the results of the evaluation and recommendations for administrative and legislative action.

Funding.
Sec. 2(i) states that $10,000,000 for each of the fiscal years 2026 through 2030 is authorized to be used by the Directorate for STEM Education of the Foundation to carry out this section.

Section 3. NASEM Report on Mathematical and Statistical Modeling Education in Pre-Kindergarten through Grade 12.
This section provides directions to the National Academies of Sciences, Engineering, and Medicine (NASEM) or another appropriate entity to carry out a study and issue a report on the state of mathematical and statistical modeling education, as well as recommendations for future action.

Study.
Sec. 3(a) states that not later than 180 days after enactment of this Act, the Director shall seek to enter into an agreement with NASEM or another appropriate entity to conduct a study on: Factors that enhance – or barriers to – the implementation of mathematical and statistical modeling education in elementary and secondary education; Pathways in mathematical and statistical problem solving from kindergarten to the workplace, allowing students to incorporate their learning in the professional world; Characteristics of teacher education programs that successfully prepare teachers to implement mathematical and statistical modeling in their classrooms; and Mechanisms for communications with stakeholders to explain the value of mathematical and statistical modeling in education.

Public Stakeholder Meeting.
Sec. 3(b) While completing the study, NASEM or another appropriate entity shall hold at least one public meeting to obtain stakeholder input on the topics of the study.

Report.
Sec. 3(c) states that not later than 24 months after the effective date of the Director's agreement with NASEM or another appropriate entity to conduct the above study, NASEM or the appropriate entity shall submit to the Director, the Secretary of Education and Congress a report containing the results of the study; recommendations to modernize factors that enhance implementation of mathematical and statistical modeling in elementary and secondary education; and recommendations for legislative and administrative action.

Authorization of Appropriations.
Sec. 3(d) states that $1,000,000 for each of the fiscal years 2026 through 2030 is authorized to be used by the Directorate for STEM Education of the Foundation to carry out this section.

Section 4. Limitations.
This section sets funding limitations.

Limitation on funding.
Sec. 4 (a) states that amounts made available to carry out sections 2 and 3 shall be derived from amounts appropriated or otherwise made available to the Foundation.

Sunset.
Sec. 4(b) states that the authority to provide awards under this Act shall expire on September 30, 2029.