

At a Glance

H.R. 4979, Rural STEM Education Act

As ordered reported by the House Committee on Science, Space, and Technology on November 14, 2019

By Fiscal Year, Millions of Dollars	2020	2020-2024	2020-2029
Direct Spending (Outlays)	0	0	0
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	0	0	0
Spending Subject to Appropriation (Outlays)	1	58	107
Statutory pay-as-you-go procedures apply?	No	Mandate Effects	
Increases on-budget deficits in any of the four consecutive 10-year periods beginning in 2030?	No	Contains intergovernmental mandate?	No
		Contains private-sector mandate?	No

The bill would

- Authorize the appropriation of \$120 million over the 2020-2025 period for the National Science Foundation to award grants for research to improve rural students' access to and participation in the fields of science, technology, engineering, and mathematics
- Direct the National Institute of Standards and Technology to carry out a prize competition for ideas to deploy affordable and reliable broadband connectivity to underserved rural communities

Estimated budgetary effects would primarily stem from

- Spending of the authorized appropriations

Detailed estimate begins on the next page.



Bill Summary

H.R. 4979 would authorize the appropriation of \$120 million over the 2020-2025 period for the National Science Foundation (NSF) to award grants for research to improve rural students’ access to and participation in the fields of science, technology, engineering, and mathematics (STEM).

The bill also would require the National Institute of Standards and Technology (NIST) to carry out a prize competition for ideas to deploy affordable and reliable broadband connectivity to underserved rural communities. Finally, H.R. 4979 would authorize the appropriation of \$1 million for the NSF to enter into an agreement with the National Academies to evaluate federal programs and research that focus on STEM education and workforce development in rural areas.

Estimated Federal Cost

The estimated budgetary effect of H.R. 4979 is shown in Table 1. The costs of the legislation fall primarily within budget functions 250 (science, space, and technology) and 370 (commerce and housing credit).

Table 1.
Estimated Increases in Spending Subject to Appropriation Under H.R. 4979

	By Fiscal Year, Millions of Dollars					2020-2024
	2020	2021	2022	2023	2024	
National Science Foundation Grants						
Estimated Authorization ^a	20	20	20	20	20	100
Estimated Outlays	0	4	11	16	20	51
Prize Competition						
Estimated Authorization	5	0	0	0	0	5
Estimated Outlays	0	3	2	0	0	5
Other Activities						
Estimated Authorization	2	0	0	0	0	2
Estimated Outlays	1	1	0	0	0	2
Total Changes						
Estimated Authorization	27	20	20	20	20	107
Estimated Outlays	1	8	13	16	20	58

a. Section 3 of H.R. 4979 would authorize the appropriation of \$20 million in 2020 for the National Science Foundation to award grants. CBO does not estimate any outlays for that authorization because appropriations have already been provided for 2020.



Basis of Estimate

For this estimate, CBO assumes that the legislation will be enacted in 2020 and that the authorized and necessary amounts will be provided in each year. Estimated outlays are based on historical spending patterns for similar programs.

CBO estimates that implementing H.R. 4979 would cost \$58 million over the 2020-2024 period.

National Science Foundation Grants

Section 3 would authorize the appropriation of \$8 million annually over the 2020-2025 period for the NSF to award grants for research on innovative approaches to STEM education in rural schools. The bill also would authorize the appropriation of \$12 million annually over the same period for grants to identify barriers that rural students face in accessing STEM education, and to improve the participation of rural students in STEM fields.

Using information from the NSF, CBO estimates that in 2019, the agency allocated more than \$20 million for those grants. Because appropriations for 2020 have already been provided, CBO does not estimate any outlays for the authorization of \$20 million in 2020. We estimate that the authorization of appropriations for grants from 2021 through 2025 would cost \$51 million over the 2020-2024 period and \$49 million after 2024.

Prize Competition

Section 8 would direct NIST to carry out a prize competition and award up to \$5 million in prizes for ideas that could improve the deployment of broadband connectivity to underserved rural communities. CBO estimates that implementing the provision would cost \$5 million over the 2020-2022 period.

Other Activities

Section 5 would authorize the appropriation of \$1 million in 2020 for the NSF to enter into an agreement with the National Academies to evaluate federal programs and research that focus on STEM education and workforce development in rural areas. CBO estimates that conducting the evaluation would cost \$1 million over the 2020-2021 period.

In addition, H.R. 4979 would direct the NSF to report to the Congress on grants awarded under the bill and on agency policies and activities that encourage the participation of rural students in STEM and computer science. The bill also would require the Government Accountability Office to study how federal STEM programs serve rural communities. Based on the costs of similar tasks, CBO estimates that conducting those activities would cost \$1 million over the 2020-2021 period.



Finally, section 4 would direct the NSF to award grants for research on online STEM education courses for rural communities, and section 8 would require the Office of Science and Technology Policy to establish a broadband research and development working group. Using information from those agencies, CBO estimates that implementing those provisions would have no significant effect on the federal budget because the agencies are already meeting those requirements.

Pay-As-You-Go Considerations: None.

Increase in Long-Term Deficits: None.

Mandates: None.

Estimate Prepared By

Federal Costs: Janani Shankaran (National Science Foundation)

David Hughes (National Institute of Standards and Technology)

Mandates: Brandon Lever

Estimate Reviewed By

Kim P. Cawley

Chief, Natural and Physical Resources Cost Estimates Unit

H. Samuel Papenfuss

Deputy Director of Budget Analysis