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(Original Signature of Member)

118TH CONGRESS  
2D SESSION

**H. R.**

To require a plan to improve the cybersecurity and telecommunications of the U.S. Academic Research Fleet, and for other purposes.

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IN THE HOUSE OF REPRESENTATIVES

Mr. MIKE GARCIA of California introduced the following bill; which was referred to the Committee on \_\_\_\_\_

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**A BILL**

To require a plan to improve the cybersecurity and telecommunications of the U.S. Academic Research Fleet, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Accelerating Net-  
5 working, Cyberinfrastructure, and Hardware for Oceanic  
6 Research Act” or the “ANCHOR Act”.

7 **SEC. 2. DEFINITIONS.**

8 In this Act:

1           (1) DIRECTOR.—The term “Director” means  
2 the Director of the National Science Foundation.

3           (2) OCEANOGRAPHIC RESEARCH VESSEL.—The  
4 term “oceanographic research vessel” has the mean-  
5 ing given the term in section 2101 of title 46,  
6 United States Code.

7           (3) U.S. ACADEMIC RESEARCH FLEET.—The  
8 term “U.S. Academic Research Fleet” means the  
9 United States-flagged vessels that—

10           (A) have been accepted into, and are ac-  
11 tively participants administered within, the Uni-  
12 versity-National Oceanographic Laboratory Sys-  
13 tem;

14           (B) are operated as oceanographic research  
15 vessels by research universities and laboratories;

16           (C) receive funding from the National  
17 Science Foundation; and

18           (D) have achieved designation as a mem-  
19 ber vessel of the U.S. Academic Research Fleet  
20 through the standard U.S. Academic Research  
21 Fleet evaluation process.

1 **SEC. 3. PLAN TO IMPROVE CYBERSECURITY AND TELE-**  
2 **COMMUNICATIONS OF U.S. ACADEMIC RE-**  
3 **SEARCH FLEET.**

4 (a) IN GENERAL.—Not later than one year after the  
5 date of the enactment of this Act, the Director , in con-  
6 sultation with other Federal agency owners heads of other  
7 Federal agencies and the head of any university or labora-  
8 tory that owns or operates a vessel of the U.S. Academic  
9 Research Fleet, shall submit to the Committee on Com-  
10 merce, Science, and Transportation of the U.S. Senate  
11 and the Committee on Space, Science, and Technology of  
12 the U.S. House of Representatives a plan to improve the  
13 cybersecurity and telecommunications of the Academic Re-  
14 search Fleet.

15 (b) ELEMENTS.—The plan required by subsection (a)  
16 shall include—

17 (1) an assessment of the telecommunications  
18 and networking needs of the U.S. Academic Re-  
19 search Fleet, consistent with the typical scientific  
20 mission of each vessel;

21 (2) in accordance with guidance issued by the  
22 Cybersecurity and Infrastructure Security Agency  
23 and the National Institute for Standards and Tech-  
24 nology, an assessment of cybersecurity needs appro-  
25 priate for—

1 (A) the ownership of vessels within the  
2 U.S. Academic Research Fleet; and

3 (B) the typical research functions and top-  
4 ics of such vessels;

5 (3) an assessment of the costs necessary to  
6 meet the needs described in paragraphs (1) and (2),  
7 including—

8 (A) any necessary equipment, such as sat-  
9 ellite communications equipment, software,  
10 high-performance computing clusters shipboard  
11 and shoreside, or enterprise hardware; and

12 (B) estimated personnel costs in excess of  
13 current expenditures, including any necessary  
14 training, support, or logistics;

15 (4) an assessment of the time required to im-  
16 plement any upgrades required to meet the needs  
17 described in paragraphs (1) and (2) under varying  
18 budgets and funding scenarios;

19 (5) a proposal for the adoption of common solu-  
20 tions or consortial licensing agreements, or by cen-  
21 tralizing elements of fleet cybersecurity, tele-  
22 communications, or data management at a single fa-  
23 cility; and

24 (6) in consultation with any non-Federal owners  
25 of a vessel of the U.S. Academic Research Fleet, a

1 spending plan for the National Science Foundation,  
2 the Office of Naval Research, non-Federal owners of  
3 vessels of the U.S. Academic Research Fleet, users  
4 of the U.S. Academic Research Fleet, or any com-  
5 bination thereof, to provide funding to cover the  
6 costs described in paragraph (3).

7 (c) CONSIDERATIONS.—The Director in preparing  
8 the plan required by subsection (a), shall consider the fol-  
9 lowing—

10 (1) the network capabilities, including speed  
11 and bandwidth targets, necessary to meet the sci-  
12 entific mission needs of each class of vessel within  
13 the U.S. Academic Research Fleet for such purposes  
14 as—

15 (A) executing the critical functions and  
16 communications of each vessel;

17 (B) providing network access for the  
18 health and well-being of deployed personnel, in-  
19 cluding communications to conduct telemedicine  
20 (including mental health care), counseling,  
21 interviews with crisis response providers, and  
22 other remote individual care and services;

23 (C) as necessary to meet operations,  
24 uploading any scientific data to a shoreside  
25 server, including the copying of data off ship

1 for disaster recovery or risk mitigation pur-  
2 poses;

3 (D) as appropriate, conducting real-time  
4 streaming to enable shore-based observers to  
5 participate in ship-based maintenance or re-  
6 search activities;

7 (E) real-time coordinated viewing of—

8 (i) scientific instrumentation so that it  
9 is possible to conduct scientific surveys and  
10 seafloor mapping with fully remote subject  
11 matter experts; and

12 (ii) critical operational technology by  
13 manufacturers and vendors so that it is  
14 possible to carry out maintenance and re-  
15 pairs to systems with limited expertise on  
16 each vessel, with fully remote subject-mat-  
17 ter experts advising; and

18 (F) as appropriate, enabling video commu-  
19 nications to allow improved outreach to, and  
20 other educational services for, K–12 students,  
21 including occasional remote classroom teaching  
22 for instructors at sea to improve oceanographic  
23 access for students; and

24 (2) In consultation with the Director of the Cy-  
25 bersecurity and Infrastructure Security Agency, the

1 Director of the National Institute for Standards and  
2 Technology, and the heads of other Federal agen-  
3 cies, as appropriate—

4 (A) the cybersecurity recommendations in  
5 the report of the private scientific advisory  
6 group known as JASON entitled “Cybersecurity  
7 at NSF Major Facilities” (JSR-21-10E) and  
8 dated October 2021 as applied to the U.S. Aca-  
9 demic Research Fleet;

10 (B) aligning with international standards  
11 and guidance for information security, including  
12 the use of encryption for sensitive information,  
13 the detection and handling of security incidents,  
14 and other areas determined relevant by the Di-  
15 rector;

16 (C) facilitating access to cybersecurity per-  
17 sonnel and training of research and support  
18 personnel; and

19 (D) the requirements for controlled unclas-  
20 sified or classified information.

21 **SEC. 4. IMPLEMENTATION OF AND REPORT ON PLAN.**

22 (a) IN GENERAL.—The Director, in coordination with  
23 the Office of Naval Research, non-Federal owners of ves-  
24 sels of the Academic Research Fleet, users of the U.S.  
25 Academic Research Fleet, or any combination thereof,

1 may support upgrades to the cyberinfrastructure and cy-  
2 bersecurity of the U.S. Academic Research Fleet con-  
3 sistent with the plan required by section 3.

4 (b) REPORT REQUIRED.—Not later than 2 years  
5 after the submission of the plan required by section 3, the  
6 Director shall submit to the Committee on Commerce,  
7 Science, and Transportation of the Senate and the Com-  
8 mittee on Space, Science, and Technology of the House  
9 of Representatives a report describing the progress made  
10 in implementing the plan.