(Original Signature of Member)

117TH CONGRESS
2D SESSION

H. R. _____

To amend the National Quantum Initiative Act to make certain additions relating to quantum modeling and simulation, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

Mr. FEENSTRA introduced the following bill; which was referred to the Committee on _____

A BILL

To amend the National Quantum Initiative Act to make certain additions relating to quantum modeling and simulation, 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 "Quantum in Practice

5   Act".

6   **SEC. 2. FINDINGS.**

7   Congress finds the following:

1   (1) Quantum computing has the potential to

2 spur advancements in molecular modeling and sim-

3 ulation that will benefit Americans.

4   (2) Quantum molecular simulations and mod-

5 eling will enable scientists to study chemical ele-

6 ments and reactions with accuracy and speed that is

7 far beyond the abilities of existing supercomputers.

8   (3) Advances in molecular simulations and

9 modeling would give researchers tools that could

10 lead to breakthroughs across industries and sectors,

11 including—

12   (A) modeling the nitrogen fixation process

13   utilized by bacteria, which could be used to de-

14   velop synthetic fertilizers without the high en-

15   ergy and material costs of current methods, cre-

16   ating the next generation of fertilizers;

17   (B) creating more effective medications

18   and reducing harmful interactions or side ef-

19   fects;

20   (C) developing new materials to increase

21   energy storage capacity and create more power-

22   ful battery technologies;

23   (D) developing lighter, stronger metals;

1   (E) creating materials for more durable

2   protective gear for law enforcement and mili-

3   tary; and

4   (F) developing new types of super-

5   conductors.

6 **SEC. 3. QUANTUM MODELING AND SIMULATION.**

7   (a) DEFINITION OF QUANTUM INFORMATION

8 SCIENCE.—Section 2(6) of the National Quantum Initia-

9 tive Act (15 U.S.C. 8801(6)) is amended by inserting

10 "modeling, simulation," after "computing".

11   (b) QUANTUM INFORMATION SCIENCE RESEARCH

12 PROGRAM.—Section 401(b)(3) of such Act (15 U.S.C.

13 8851(b)(3)) is amended—

14   (1) in subparagraph (F), by striking "and";

15   (2) in subparagraph (G), by inserting "and" at

16   the end; and

17   (3) by adding at the end the following:

18   "(H) quantum molecular modeling or sim-

19   ulation;".