

112TH CONGRESS
2D SESSION

S. _____

To establish scientific standards and protocols across forensic disciplines,
and for other purposes.

IN THE SENATE OF THE UNITED STATES

Mr. ROCKEFELLER introduced the following bill; which was read twice and
referred to the Committee on _____

A BILL

To establish scientific standards and protocols across forensic
disciplines, 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; TABLE OF CONTENTS.**

4 (a) **SHORT TITLE.**—This Act may be cited as the
5 “Forensic Science and Standards Act of 2012”.

6 (b) **TABLE OF CONTENTS.**—The table of contents of
7 this Act is as follows:

- Sec. 1. Short title; table of contents.
- Sec. 2. Findings.
- Sec. 3. Definitions.
- Sec. 4. National forensic science research program.
- Sec. 5. Forensic science research grants program.
- Sec. 6. Forensic science research challenges.
- Sec. 7. Forensic science standards.

Sec. 8. Forensic science advisory committee.

Sec. 9. Adoption, accreditation, and certification.

Sec. 10. National Institute of Standards and Technology functions.

1 **SEC. 2. FINDINGS.**

2 Congress finds that—

3 (1) at the direction of Congress, the National
4 Academy of Sciences led a comprehensive review of
5 the state of forensic science and issued its findings
6 in a 2009 report, “Strengthening Forensic Science
7 in the United States: A Path Forward”;

8 (2) the report’s findings indicate the need for
9 independent scientific research to support the foun-
10 dation of forensic disciplines;

11 (3) the report stresses the need for standards
12 in methods, data interpretation, and reporting, and
13 the importance of preventing cognitive bias and miti-
14 gating human factors; and

15 (4) according to the report, forensic science re-
16 search is not financially well supported, and there is
17 a need for a unified strategy for developing a foren-
18 sic science research plan across Federal agencies.

19 **SEC. 3. DEFINITIONS.**

20 In this Act:

21 (1) **ADVISORY COMMITTEE.**—The term “Advi-
22 sory Committee” means the Forensic Science Advi-
23 sory Committee established under section 8.

1 (2) COORDINATING OFFICE.—The term “Co-
2 ordinating Office” means the National Forensic
3 Science Coordinating Office established under sec-
4 tion 4.

5 (3) FORENSIC SCIENCE.—

6 (A) IN GENERAL.—The term “forensic
7 science” means the basic and applied scientific
8 research applicable to the collection, evaluation,
9 and analysis of physical evidence, including dig-
10 ital evidence, for use in investigations and legal
11 proceedings, including all tests, methods, meas-
12 urements, and procedures.

13 (B) APPLIED SCIENTIFIC RESEARCH.—In
14 subparagraph (A), the term “applied scientific
15 research” means a systematic study to gain
16 knowledge or understanding necessary to deter-
17 mine the means by which a recognized and spe-
18 cific need may be met.

19 (C) BASIC SCIENTIFIC RESEARCH.—In
20 subparagraph (A), the term “basic scientific re-
21 search” means a systematic study directed to-
22 ward fuller knowledge or understanding of the
23 fundamental aspects of phenomena and of ob-
24 servable facts without specific applications to-
25 wards processes or products.

1 (4) STANDARDS DEVELOPMENT ORGANIZA-
2 TION.—The term “standards development organiza-
3 tion” means a domestic or an international organiza-
4 tion that plans, develops, establishes, or coordinates
5 voluntary consensus standards using procedures that
6 incorporate openness, a balance of interests, con-
7 sensus, due process, and an appeals process.

8 **SEC. 4. NATIONAL FORENSIC SCIENCE RESEARCH PRO-**
9 **GRAM.**

10 (a) ESTABLISHMENT.—There shall be a national fo-
11 rensic science research program to improve, expand, and
12 coordinate Federal research in the forensic sciences.

13 (b) NATIONAL ACADEMY OF SCIENCES REPORT ON
14 FORENSIC SCIENCE.—The Director of the National
15 Science Foundation shall contract with the National Acad-
16 emy of Sciences to develop, not later than 180 days after
17 the date of enactment of this Act, a report that—

18 (1) identifies the most critical forensic science
19 disciplines, which may include forensic pathology
20 and digital forensics, that require further research to
21 strengthen the scientific foundation in those dis-
22 ciplines; and

23 (2) makes recommendations regarding research
24 that will help strengthen the scientific foundation in

1 the forensic science disciplines identified under para-
2 graph (1).

3 (c) NATIONAL FORENSIC SCIENCE COORDINATING
4 OFFICE.—

5 (1) ESTABLISHMENT.—There is established a
6 National Forensic Science Coordinating Office, with
7 a director and full time staff, to be located at the
8 National Science Foundation. The Director of the
9 Coordinating Office shall be responsible for carrying
10 out the provisions of this subsection.

11 (2) UNIFIED FEDERAL RESEARCH STRATEGY.—
12 The Coordinating Office established under para-
13 graph (1) shall coordinate among relevant Federal
14 departments, agencies, or offices—

15 (A) the development of a unified Federal
16 research strategy that—

17 (i) specifies and prioritizes the re-
18 search necessary to enhance the validity
19 and reliability of the forensic science dis-
20 ciplines; and

21 (ii) is consistent with the rec-
22 ommendations in the National Academy of
23 Sciences report on forensic science under
24 subsection (b);

1 (B) the development of a 5-year roadmap,
2 updated triennially thereafter, for the unified
3 Federal research strategy under subparagraph
4 (A) that includes a description of—

5 (i) which department, agency, or of-
6 fice will carry out each specific element of
7 the unified Federal research strategy;

8 (ii) short-term and long-term prior-
9 ities and objectives; and

10 (iii) common metrics and other eval-
11 uation criteria that will be used to assess
12 progress toward achieving the priorities
13 and objectives under clause (ii); and

14 (C) any necessary programs, policies, and
15 budgets to support the implementation of the
16 roadmap under subparagraph (B).

17 (3) ADDITIONAL DUTIES.—The Coordinating
18 Office shall—

19 (A) evaluate annually the national forensic
20 science research program to determine whether
21 it is achieving its objectives; and

22 (B) report annually to Congress the find-
23 ings under subparagraph (A).

24 (4) DEADLINES.—The Coordinating Office shall
25 submit to Congress—

1 (A) not later than 1 year after the date of
2 enactment of this Act, the unified Federal re-
3 search strategy under paragraph (2)(A);

4 (B) not later than 1 year after the date of
5 enactment of this Act, the initial 5-year road-
6 map under paragraph (2)(B); and

7 (C) not later than 1 month after the date
8 it is updated, each updated 5-year roadmap
9 under paragraph (2)(B).

10 **SEC. 5. FORENSIC SCIENCE RESEARCH GRANTS PROGRAM.**

11 (a) ESTABLISHMENT.—Not later than 1 year after
12 the date of enactment of this Act, the National Science
13 Foundation shall establish a forensic science research
14 grants program to improve the foundation and practice
15 of forensic science in the United States based on the rec-
16 ommendations in the unified Federal research strategy
17 under section 4.

18 (b) MERIT REVIEW.—Each grant under this section
19 shall be awarded on a merit-reviewed, competitive basis.

20 (c) PUBLICATION.—The National Science Founda-
21 tion shall support, as appropriate, the publication of re-
22 search results under this section in scholarly, peer-re-
23 viewed scientific journals.

24 (d) FORENSIC SCIENCE RESEARCH CENTERS.—

1 (1) IN GENERAL.—As part of the forensic
2 science research grants program under subsection
3 (a), the Director of the National Science Foundation
4 shall establish 2 forensic science research centers—

5 (A) to conduct research consistent with the
6 unified Federal research strategy under section
7 4;

8 (B) to build relationships between forensic
9 science practitioners and members of the re-
10 search community;

11 (C) to encourage and promote the edu-
12 cation and training of a diverse group of people
13 to be leaders in the interdisciplinary field of fo-
14 rensic science; and

15 (D) to broadly disseminate the results of
16 the research under subparagraph (A).

17 (2) TERMS OF DESIGNATION.—

18 (A) IN GENERAL.—The Director shall des-
19 ignate each forensic science research center for
20 a 4-year term.

21 (B) REVOCATION.—The Director may re-
22 voke a designation under subparagraph (A) if
23 the Director determines that the forensic
24 science research center is not demonstrating
25 adequate performance.

1 (C) AMOUNT OF AWARD.—Subject to sub-
2 section (f), the Director shall award a grant up
3 to \$10,000,000 to each forensic science re-
4 search center. A grant awarded under this sub-
5 paragraph shall be for a period of 4 years.

6 (D) LIMITATION ON USE OF FUNDS.—No
7 funds authorized under this section may be
8 used to construct or renovate a building or
9 structure.

10 (3) REPORTS.—Each forensic science research
11 center shall submit an annual report to the Director,
12 at such time and in such manner as the Director
13 may require, that contains a description of the ac-
14 tivities the center carried out with the funds received
15 under this subsection, including a description of how
16 those activities satisfy the requirement under para-
17 graph (2)(D).

18 (e) EVALUATION.—

19 (1) IN GENERAL.—The Director of the National
20 Science Foundation shall conduct a comprehensive
21 evaluation of the forensic science research grants
22 program every 4 years—

23 (A) to determine whether the program is
24 achieving the objectives of improving the foun-

1 dation and practice of forensic science in the
2 United States; and

3 (B) to evaluate the extent to which the
4 program is contributing toward the priorities
5 and objectives described in the roadmap under
6 section 4(c)(2)(B).

7 (2) REPORT TO CONGRESS.—The Director of
8 the National Science Foundation shall report to
9 Congress the results of each comprehensive evalua-
10 tion under paragraph (1).

11 (f) AUTHORIZATION OF APPROPRIATIONS.—There
12 are authorized to be appropriated to the National Science
13 Foundation to carry out this section—

14 (1) \$34,000,000 for fiscal year 2013;

15 (2) \$37,000,000 for fiscal year 2014;

16 (3) \$40,000,000 for fiscal year 2015;

17 (4) \$43,000,000 for fiscal year 2016; and

18 (5) \$46,000,000 for fiscal year 2017.

19 **SEC. 6. FORENSIC SCIENCE RESEARCH CHALLENGES.**

20 (a) PRIZES AND CHALLENGES.—

21 (1) IN GENERAL.—A Federal department, agen-
22 cy, or office may assist in satisfying the research
23 needs and priorities identified in the unified Federal
24 research strategy under section 4 by using prizes
25 and challenges under the America COMPETES Re-

1 authorization Act (124 Stat. 3982) or under any
2 other provision of law, as appropriate.

3 (2) PURPOSES.—The purpose of a prize or
4 challenge under this section, among other possible
5 purposes, may be—

6 (A) to determine or develop the best data
7 collection practices or analytical methods to
8 evaluate a specific type of forensic data; or

9 (B) to determine the accuracy of an ana-
10 lytical method.

11 (b) FORENSIC EVIDENCE PRIZES AND CHAL-
12 LENGES.—

13 (1) IN GENERAL.—A Federal department, agen-
14 cy, or office, or multiple Federal departments, agen-
15 cies, or offices in cooperation, carrying out a prize
16 or challenge under this section—

17 (A) may establish a prize advisory board;
18 and

19 (B) shall select each member of the prize
20 advisory board with input from relevant Federal
21 departments, agencies, or offices.

22 (2) PRIZE ADVISORY BOARD.—The prize advi-
23 sory board shall—

24 (A) identify 1 or more types of forensic
25 evidence for purposes of a prize or challenge;

1 (B) using the samples under paragraph
2 (3), recommend how to structure a prize or
3 challenge that requires a competitor to develop
4 a forensic data collection practice, an analytical
5 method, or a relevant approach or technology to
6 be tested relative to a known outcome or other
7 proposed judging methodology; and

8 (C) through the Coordinating Office, ad-
9 vise relevant Federal departments, agencies, or
10 offices in designing prizes or challenges that
11 satisfy the research needs and priorities identi-
12 fied in the unified Federal research strategy
13 under section 4.

14 (3) SAMPLES.—The National Institute of
15 Standards and Technology or the Department of
16 Justice shall provide or contract with a non-Federal
17 party to prepare, for each type of forensic evidence
18 under paragraph (2)(A), a sufficient set of samples,
19 including associated digital data that could be
20 shared without limitation and physical specimens
21 that could be shared with qualified parties, for pur-
22 poses of a prize or challenge.

23 (4) FINGERPRINT DATA INTEROPERABILITY.—
24 At least 1 prize or challenge under this section shall
25 be focused on achieving nationwide fingerprint data

1 interoperability if the prize advisory board, the Co-
2 ordinating Office, or a Federal department, agency,
3 or office identifies an area where a prize or challenge
4 will assist in satisfying a strategy related to this
5 issue.

6 **SEC. 7. FORENSIC SCIENCE STANDARDS.**

7 (a) ESTABLISHMENT.—

8 (1) IN GENERAL.—The National Institute of
9 Standards and Technology shall—

10 (A) identify or coordinate the development
11 of forensic science standards to enhance the va-
12 lidity and reliability of forensic science activi-
13 ties, including—

14 (i) authoritative methods, standards,
15 and technical guidance, including protocols
16 and best practices, for forensic measure-
17 ments, analysis, and interpretation;

18 (ii) technical standards for products
19 and services used by forensic science prac-
20 titioners;

21 (iii) standard content, terminology,
22 and parameters to be used in reporting
23 and testifying on the results and interpre-
24 tation of forensic science measurements,
25 tests, and procedures; and

1 (iv) standards to provide for the inter-
2 operability of forensic science-related tech-
3 nology and databases;

4 (B) test and validate existing forensics
5 standards, as appropriate; and

6 (C) provide independent validation of fo-
7 rensic science measurements and methods.

8 (2) CONSULTATION.—

9 (A) IN GENERAL.—In carrying out its re-
10 sponsibilities under paragraph (1), the National
11 Institute of Standards and Technology shall
12 consult with—

13 (i) standards development organiza-
14 tions and other stakeholders, including rel-
15 evant Federal departments, agencies, and
16 offices; and

17 (ii) testing laboratories and accredita-
18 tion bodies to ensure that products and
19 services meet necessary performance levels.

20 (3) PRIORITIZATION.—When prioritizing its re-
21 sponsibilities under paragraph (1), the National In-
22 stitute of Standards and Technology shall con-
23 sider—

24 (A) the unified Federal research strategy
25 under section 4; and

1 (B) the recommendations of any expert
2 working group under subsection (b).

3 (4) REPORT TO CONGRESS.—The Director of
4 the National Institute of Standards and Technology
5 shall report annually, with the President’s budget re-
6 quest, to Congress on the progress in carrying out
7 the National Institute of Standards and Tech-
8 nology’s responsibilities under paragraph (1).

9 (b) EXPERT WORKING GROUPS.—

10 (1) IN GENERAL.—The Director of the National
11 Institute of Standards and Technology may establish
12 1 or more discipline-specific expert working groups
13 to identify gaps, areas of need, and opportunities for
14 standards development with respect to forensic
15 science.

16 (2) MEMBERS.—A member of an expert work-
17 ing group shall—

18 (A) be appointed by the Director of the
19 National Institute of Standards and Tech-
20 nology;

21 (B) have significant academic, research, or
22 practical expertise in a discipline of forensic
23 science or in another area relevant to the pur-
24 pose of the expert working group; and

1 (C) balance scientific rigor with practical
2 and regulatory constraints.

3 (3) FEDERAL ADVISORY COMMITTEE ACT.—An
4 expert working group established under this sub-
5 section shall not be subject to the Federal Advisory
6 Committee Act (5 U.S.C. App.).

7 (c) AUTHORIZATION OF APPROPRIATIONS.—There
8 are authorized to be appropriated to the National Institute
9 of Standards and Technology to carry out this section—

10 (1) \$5,000,000 for fiscal year 2013;

11 (2) \$12,000,000 for fiscal year 2014;

12 (3) \$20,000,000 for fiscal year 2015;

13 (4) \$27,000,000 for fiscal year 2016; and

14 (5) \$35,000,000 for fiscal year 2017.

15 **SEC. 8. FORENSIC SCIENCE ADVISORY COMMITTEE.**

16 (a) ESTABLISHMENT.—The Director of the National
17 Institute of Standards and Technology and the Attorney
18 General, in collaboration with the Director of the National
19 Science Foundation, shall establish a Forensic Science Ad-
20 visory Committee.

21 (b) DUTIES.—The Advisory Committee shall provide
22 advice to—

23 (1) the Federal departments, agencies, and of-
24 fices implementing the unified Federal research
25 strategy under section 4;

1 (2) the National Institute of Standards and
2 Technology, including recommendations regarding
3 the National Institute of Standards and Tech-
4 nology's responsibilities under section 7; and

5 (3) the Department of Justice, including rec-
6 ommendations regarding the Department of Jus-
7 tice's responsibilities under section 9.

8 (c) SUBCOMMITTEES.—The Advisory Committee may
9 form subcommittees related to specific disciplines in foren-
10 sic science or as necessary to further its duties under sub-
11 section (b). A subcommittee may include an individual who
12 is not a member of the Advisory Committee.

13 (d) CHAIRS.—The Director of the National Institute
14 of Standards and Technology and the Attorney General,
15 or their designees, shall co-chair the Advisory Committee.

16 (e) MEMBERSHIP.—The Director of the National In-
17 stitute of Standards and Technology and the Attorney
18 General, in consultation with the Director of the National
19 Science Foundation, shall appoint each member of the Ad-
20 visory Committee. The Advisory Committee shall include
21 balanced representation between forensic science dis-
22 ciplines (including academic scientists, statisticians, social
23 scientists, engineers, and representatives of other related
24 scientific disciplines) and relevant forensic science applica-
25 tions (including Federal, State, and local representatives

1 of the forensic science community, the legal community,
2 victim advocate organizations, and law enforcement).

3 (f) ADMINISTRATION.—The Attorney General shall
4 provide administrative support to the Advisory Committee.

5 (g) FEDERAL ADVISORY COMMITTEE ACT.—The Ad-
6 visory Committee established under this section shall not
7 be subject to section 14 of the Federal Advisory Com-
8 mittee Act (5 U.S.C. App.).

9 **SEC. 9. ADOPTION, ACCREDITATION, AND CERTIFICATION.**

10 The Attorney General—

11 (1) shall promote the adoption of forensic
12 science standards developed under section 7, includ-
13 ing—

14 (A) by requiring each Federal forensic lab-
15 oratory to adopt the forensic science standards;

16 (B) by encouraging each non-Federal fo-
17 rensic laboratory to adopt the forensic science
18 standards;

19 (C) by promoting accreditation and certifi-
20 cation requirements based on the forensic
21 science standards; and

22 (D) by promoting any recommendations
23 made by the Advisory Committee for adoption
24 and implementation of forensic science stand-
25 ards; and

1 (2) may promote the adoption of the forensic
2 science standards as a condition of Federal funding
3 or for inclusion in national data sets.

4 **SEC. 10. NATIONAL INSTITUTE OF STANDARDS AND TECH-**
5 **NOLOGY FUNCTIONS.**

6 Section 2(b) of the National Institute of Standards
7 and Technology Act (15 U.S.C. 272(b)) is amended—

8 (1) in paragraph (12), by striking “and” after
9 the semicolon;

10 (2) in paragraph (13), by striking the period at
11 the end and inserting “; and”; and

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

13 “(14) to identify and coordinate the develop-
14 ment of forensic science standards to enhance the
15 validity and reliability of forensic science activities.”.