

[STAFF WORKING DRAFT]

JULY 11, 2012

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:

1 (1) ADVISORY COMMITTEE.—The term “Advi-
2 sory Committee” means the Forensic Science Advi-
3 sory Committee established under section 8.

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

8 (3) FORENSIC SCIENCE.—

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

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

22 (C) BASIC SCIENTIFIC RESEARCH.—In
23 subparagraph (A), the term “basic scientific re-
24 search” means a systematic study directed to-
25 ward fuller knowledge or understanding of the

1 fundamental aspects of phenomena and of ob-
2 servable facts without specific applications to-
3 wards processes or products.

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

11 **SEC. 4. NATIONAL FORENSIC SCIENCE RESEARCH PRO-**
12 **GRAM.**

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

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

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

1 (2) makes recommendations regarding research
2 that will help strengthen the scientific foundation in
3 the forensic science disciplines identified under para-
4 graph (1).

5 (c) NATIONAL FORENSIC SCIENCE COORDINATING
6 OFFICE.—

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

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

17 (A) the development of a unified Federal
18 research strategy that—

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

23 (ii) is consistent with the rec-
24 ommendations in the National Academy of

1 Sciences report on forensic science under
2 subsection (b);

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

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

10 (ii) short-term and long-term prior-
11 ities and objectives; and

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

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

19 (3) ADDITIONAL DUTIES.—The Coordinating
20 Office shall—

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

24 (B) report annually to Congress the find-
25 ings under subparagraph (A).

1 (4) DEADLINES.—The Coordinating Office shall
2 submit to Congress—

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

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

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

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

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

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

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

1 (d) FORENSIC SCIENCE RESEARCH CENTERS.—

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

6 (A) to conduct research consistent with the
7 unified Federal research strategy under section
8 4;

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

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

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

18 (2) TERMS OF DESIGNATION.—

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

22 (B) REVOCATION.—The Director may re-
23 voke a designation under subparagraph (A) if
24 the Director determines that the forensic

1 science research center is not demonstrating
2 adequate performance.

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

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

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

20 (e) EVALUATION.—

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

1 (A) to determine whether the program is
2 achieving the objectives of improving the foun-
3 dation and practice of forensic science in the
4 United States; and

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

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

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

16 (1) \$34,000,000 for fiscal year 2013;

17 (2) \$37,000,000 for fiscal year 2014;

18 (3) \$40,000,000 for fiscal year 2015;

19 (4) \$43,000,000 for fiscal year 2016; and

20 (5) \$46,000,000 for fiscal year 2017.

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

22 (a) PRIZES AND CHALLENGES.—

23 (1) IN GENERAL.—A Federal department, agen-
24 cy, or office may assist in satisfying the research
25 needs and priorities identified in the unified Federal

1 research strategy under section 4 by using prizes
2 and challenges under the America COMPETES Re-
3 authorization Act (124 Stat. 3982) or under any
4 other provision of law, as appropriate.

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

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

11 (B) to determine the accuracy of an ana-
12 lytical method.

13 (b) FORENSIC EVIDENCE PRIZES AND CHAL-
14 LENGES.—

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

19 (A) may establish a prize advisory board;
20 and

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

24 (2) PRIZE ADVISORY BOARD.—The prize advi-
25 sory board shall—

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

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

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

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

1 (4) FINGERPRINT DATA INTEROPERABILITY.—

2 At least 1 prize or challenge under this section shall
3 be focused on achieving nationwide fingerprint data
4 interoperability if the prize advisory board, the Co-
5 ordinating Office, or a Federal department, agency,
6 or office identifies an area where a prize or challenge
7 will assist in satisfying a strategy related to this
8 issue.

9 **SEC. 7. FORENSIC SCIENCE STANDARDS.**

10 (a) ESTABLISHMENT.—

11 (1) IN GENERAL.—The National Institute of
12 Standards and Technology shall—

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

17 (i) authoritative methods, standards,
18 and technical guidance, including protocols
19 and best practices, for forensic measure-
20 ments, analysis, and interpretation;

21 (ii) technical standards for products
22 and services used by forensic science prac-
23 titioners;

24 (iii) standard content, terminology,
25 and parameters to be used in reporting

1 and testifying on the results and interpre-
2 tation of forensic science measurements,
3 tests, and procedures; and

4 (iv) standards to provide for the inter-
5 operability of forensic science-related tech-
6 nology and databases;

7 (B) test and validate existing forensics
8 standards, as appropriate; and

9 (C) provide independent validation of fo-
10 rensic science measurements and methods.

11 (2) CONSULTATION.—

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

16 (i) standards development organiza-
17 tions and other stakeholders, including rel-
18 evant Federal departments, agencies, and
19 offices; and

20 (ii) testing laboratories and accredita-
21 tion bodies to ensure that products and
22 services meet necessary performance levels.

23 (3) PRIORITIZATION.—When prioritizing its re-
24 sponsibilities under paragraph (1), the National In-

1 stitute of Standards and Technology shall con-
2 sider—

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

5 (B) the recommendations of any expert
6 working group under subsection (b).

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

13 (b) EXPERT WORKING GROUPS.—

14 (1) IN GENERAL.—The Director of the National
15 Institute of Standards and Technology may establish
16 1 or more discipline-specific expert working groups
17 to identify gaps, areas of need, and opportunities for
18 standards development with respect to forensic
19 science.

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

22 (A) be appointed by the Director of the
23 National Institute of Standards and Tech-
24 nology;

1 (B) have significant academic, research, or
2 practical expertise in a discipline of forensic
3 science or in another area relevant to the pur-
4 pose of the expert working group; and

5 (C) balance scientific rigor with practical
6 and regulatory constraints.

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

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

14 (1) \$5,000,000 for fiscal year 2013;

15 (2) \$12,000,000 for fiscal year 2014;

16 (3) \$20,000,000 for fiscal year 2015;

17 (4) \$27,000,000 for fiscal year 2016; and

18 (5) \$35,000,000 for fiscal year 2017.

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

20 (a) ESTABLISHMENT.—The Director of the National
21 Institute of Standards and Technology and the Attorney
22 General, in collaboration with the Director of the National
23 Science Foundation, shall establish a Forensic Science Ad-
24 visory Committee.

1 (b) DUTIES.—The Advisory Committee shall provide
2 advice to—

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

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

10 (3) the Department of Justice, including rec-
11 ommendations regarding the Department of Jus-
12 tice's responsibilities under section 9.

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

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

21 (e) MEMBERSHIP.—The Director of the National In-
22 stitute of Standards and Technology and the Attorney
23 General, in consultation with the Director of the National
24 Science Foundation, shall appoint each member of the Ad-
25 visory Committee. The Advisory Committee shall include

1 balanced representation between forensic science dis-
2 ciplines (including academic scientists, statisticians, social
3 scientists, engineers, and representatives of other related
4 scientific disciplines) and relevant forensic science applica-
5 tions (including Federal, State, and local representatives
6 of the forensic science community, the legal community,
7 victim advocate organizations, and law enforcement).

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

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

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

15 The Attorney General—

16 (1) shall promote the adoption of forensic
17 science standards developed under section 7, includ-
18 ing—

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

21 (B) by encouraging each non-Federal fo-
22 rensic laboratory to adopt the forensic science
23 standards;

1 (C) by promoting accreditation and certifi-
2 cation requirements based on the forensic
3 science standards; and

4 (D) by promoting any recommendations
5 made by the Advisory Committee for adoption
6 and implementation of forensic science stand-
7 ards; and

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

11 **SEC. 10. NATIONAL INSTITUTE OF STANDARDS AND TECH-**
12 **NOLOGY FUNCTIONS.**

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

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

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

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

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