

114TH CONGRESS
2D SESSION

S. 3259

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

IN THE SENATE OF THE UNITED STATES

JULY 14, 2016

Mr. BLUMENTHAL introduced the following bill; which was read twice and
referred to the Committee on Commerce, Science, and Transportation

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.**

4 This Act may be cited as the “Forensic Science and
5 Standards Act of 2016”.

6 **SEC. 2. FINDINGS.**

7 Congress finds that—

8 (1) at the direction of Congress, the National
9 Academy of Sciences led a comprehensive review of
10 the state of forensic science and issued its findings

1 in a 2009 report, “Strengthening Forensic Science
2 in the United States: A Path Forward”;

3 (2) the report’s findings indicate the need for
4 independent scientific research to support the foun-
5 dation of forensic disciplines;

6 (3) the report stresses the need for standards
7 in methods, data interpretation, and reporting, and
8 the importance of preventing cognitive bias and miti-
9 gating human factors; and

10 (4) according to the report, forensic science re-
11 search is not financially well-supported, and there is
12 need for a unified strategy for developing a forensic
13 science research plan across Federal agencies.

14 **SEC. 3. DEFINITIONS.**

15 In this Act:

16 (1) COMMISSION.—The term “Commission”
17 means the National Commission on Forensic
18 Science, a Federal advisory committee established
19 under section 9.

20 (2) COORDINATING OFFICE.—The term “Co-
21 ordinating Office” means the National Forensic
22 Science Coordinating Office established under sec-
23 tion 4(b).

24 (3) FORENSIC SCIENCE.—The term “forensic
25 science” means the scientific and technical practice,

1 including all tests, methods, measurements, and pro-
2 cedures, applied to the collection, evaluation, and
3 analysis of physical and digital evidence, for use in
4 investigations and legal proceedings.

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

12 **SEC. 4. NATIONAL FORENSIC SCIENCE RESEARCH INITIA-**
13 **TIVE.**

14 (a) ESTABLISHMENT.—

15 (1) IN GENERAL.—There is established a Na-
16 tional Forensic Science Research Initiative to im-
17 prove, expand, and coordinate Federal research in
18 the forensic sciences.

19 (2) DUTIES AND RESPONSIBILITIES.—The Di-
20 rector of the Office of Science and Technology Policy
21 shall carry out the duties and responsibilities of the
22 National Forensic Science Research Initiative.

23 (3) FEDERAL PARTICIPATION.—Federal partici-
24 pation shall include—

25 (A) the National Science Foundation;

1 (B) the National Institute of Standards
2 and Technology;

3 (C) the Department of Justice; and

4 (D) other Federal agencies contributing to
5 research in forensic science.

6 (b) NATIONAL FORENSIC SCIENCE COORDINATING
7 OFFICE.—

8 (1) ESTABLISHMENT.—There is established a
9 National Forensic Science Coordinating Office, with
10 a full-time director and additional staff, as needed,
11 to be located at the Office of Science and Tech-
12 nology Policy.

13 (2) DIRECTOR.—The Director of the Coordi-
14 nating Office shall be a senior Federal agency man-
15 ager with appropriate expertise detailed to the Office
16 of Science and Technology Policy for a period of 3
17 years. Responsibility for providing a director shall
18 rotate among the Federal agencies participating in
19 the National Forensic Science Research Initiative.

20 (3) DUTIES OF THE DIRECTOR.—The Director
21 shall be responsible for carrying out this section, in-
22 cluding coordinating the development of a unified
23 Federal research strategy under subsection (d),
24 working with Federal agencies to execute the re-

1 search strategy, and overseeing periodic reviews of
2 the National Forensic Science Research Initiative.

3 (4) FUNDING.—Responsibility to fund the Co-
4 ordinating Office shall be shared by the Federal
5 agencies participating in the National Forensic
6 Science Research Initiative. Such Federal agencies
7 may dedicate additional full-time or part-time staff
8 to the Coordinating Office, as appropriate, to sus-
9 tain ongoing activities, facilitate special studies, and
10 provide additional support.

11 (c) REPORT ON FORENSIC SCIENCE.—Not later than
12 180 days after the date of enactment of this Act—

13 (1) the Director of the National Science Foun-
14 dation, in consultation with the Director of the Na-
15 tional Institute of Standards and Technology, the
16 Attorney General, and the Director of the Coordi-
17 nating Office shall contract with the National Re-
18 search Council or a similar external, independent
19 scientific entity to conduct a study and develop a re-
20 port that—

21 (A) assesses progress made in addressing
22 issues identified in the National Research
23 Council’s report entitled “Strengthening Foren-
24 sic Science in the United States: A Path For-
25 ward”, issued in February, 2009;

1 (B) identifies the most critical challenges
2 in forensic science that require further research
3 to—

4 (i) strengthen the scientific foundation
5 of existing forensic science disciplines; and

6 (ii) support the development of emerg-
7 ing forensic science disciplines;

8 (C) makes recommendations regarding re-
9 search that will help address the challenges
10 identified under subparagraph (B), including
11 recommendations to identify mechanisms to ac-
12 complish that research;

13 (D) takes into account previous studies
14 and reports; and

15 (E) takes into account the expertise and
16 needs of Federal, State, local, and tribal foren-
17 sic science practitioners, law enforcement, the
18 legal community, victim advocate organizations,
19 and organizations that defend the wrongfully
20 convicted; and

21 (2) the entity contracted under paragraph (1)
22 shall submit the report under that paragraph to the
23 Director of the National Science Foundation, the Di-
24 rector of the National Institute of Standards and
25 Technology, the Attorney General, and Congress.

1 (d) UNIFIED FEDERAL RESEARCH STRATEGY.—The
2 Coordinating Office shall coordinate with relevant Federal
3 agencies for—

4 (1) the development of a unified Federal re-
5 search strategy that—

6 (A) specifies and prioritizes the short-term
7 and long-term research necessary to enhance
8 the establishment, validity, and reliability of the
9 forensic science disciplines, including specific
10 milestones and objectives as appropriate;

11 (B) is consistent with the recommendations
12 in the report required by subsection (c);

13 (C) describes the role of each Federal
14 agency in supporting the specific areas of re-
15 search identified in subparagraph (A); and

16 (D) describes common metrics and other
17 evaluation criteria that will be used to assess
18 progress toward achieving the priorities, mile-
19 stones, and objectives identified under subpara-
20 graph (A); and

21 (2) the development of any necessary programs,
22 policies, and budgets to support the implementation
23 of the research strategy developed under paragraph
24 (1), including mechanisms for joint-agency review of
25 research proposals, for interagency co-funding of re-

1 search activities, and for information sharing across
2 agencies.

3 (e) CONSULTATION.—In developing and imple-
4 menting the unified Federal research strategy, the Direc-
5 tor of the Coordinating Office shall consult with forensic
6 science practitioners, as appropriate, to ensure that the
7 unified Federal research strategy takes into account prac-
8 tical applications and implementations of the research
9 identified under subsection (d)(1)(A).

10 (f) ANNUAL REPORT.—The Coordinating Office shall
11 submit an annual report to Congress, not later than 90
12 days after the submission of the President’s annual budget
13 request, that includes—

14 (1) the budget for the National Forensic
15 Science Research Initiative for each agency that par-
16 ticipates in the program; and

17 (2) a description of progress made toward
18 achieving the priorities, milestones, and objectives
19 identified in the unified Federal research strategy
20 for the previous fiscal year.

21 **SEC. 5. IMPLEMENTATION OF FORENSIC SCIENCE RE-**
22 **SEARCH RECOMMENDATIONS.**

23 (a) ESTABLISHMENT.—Federal agencies partici-
24 pating in the National Forensic Science Research Initia-
25 tive, including the National Science Foundation, the Na-

1 tional Institute of Standards and Technology, and the De-
2 partment of Justice, in partnership with the Director of
3 the Coordinating Office, shall improve the foundation and
4 practice of forensic science in the United States by—

5 (1) conducting or supporting research con-
6 sistent with the unified Federal research strategy
7 developed under section 4(d);

8 (2) building relationships between forensic
9 science practitioners and members of the research
10 community;

11 (3) encouraging and promoting the education
12 and training of a diverse group of people to be lead-
13 ers in the interdisciplinary field of forensic science;
14 and

15 (4) broadly disseminating the results of the re-
16 search conducted or supported under paragraph (1).

17 (b) MERIT REVIEW.—Each external forensic science
18 research grant awarded by a Federal agency under this
19 section shall be subject to a competitive merit review pro-
20 cess that shall—

21 (1) be conducted by individuals qualified to
22 evaluate the scientific merit of the proposed research
23 activity; and

24 (2) evaluate the proposed research activity by
25 criteria that include—

1 (A) the ability of each proposed research
2 activity to advance knowledge and under-
3 standing relevant to the forensic sciences and to
4 benefit society or advance desired societal out-
5 comes;

6 (B) the potential for the research activity
7 to explore creative, original, or transformative
8 concepts;

9 (C) the qualifications of the individual,
10 team, or organization proposing the research
11 activity and the adequacy of the research plans;
12 and

13 (D) the adequacy of the resources available
14 to the individual, team, or organization pro-
15 posing the research activity.

16 (c) PUBLICATION.—Research conducted from grants
17 awarded under this section by Federal agencies shall take
18 into consideration the requirements of peer-reviewed sci-
19 entific journals and encourage the communication and
20 open exchange of data and results to other agencies, pol-
21 icymakers, and the public.

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

23 (a) PRIZES AND CHALLENGES.—

24 (1) IN GENERAL.—A Federal agency may assist
25 in satisfying the research needs and priorities identi-

1 fied in the unified Federal research strategy devel-
2 oped under section 4(d) by using prizes and chal-
3 lenges under the America COMPETES Reauthoriza-
4 tion Act of 2010 (42 U.S.C. 6621 et seq.) or under
5 any other provision of law, as appropriate.

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

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

12 (B) to quantify or improve the efficiency,
13 reliability, or accuracy of an analytical method;

14 (C) to design new methodologies to inte-
15 grate evidence collection, documentation, and
16 analysis at crime scenes; or

17 (D) to address other topics as proposed by
18 the forensic science community.

19 (b) FORENSIC DATA SETS.—The Director of the Na-
20 tional Institute of Standards and Technology or the Attor-
21 ney General shall provide or contract with a non-Federal
22 party to prepare, if necessary for a prize carried out under
23 this section, a sufficient set of data or samples, including
24 associated digital data that could be shared without limita-

1 tion and physical specimens that could be shared with
2 qualified parties, for purposes of a prize or challenge.

3 **SEC. 7. FORENSIC SCIENCE RESEARCH AT THE NATIONAL**
4 **SCIENCE FOUNDATION.**

5 (a) GRANTS.—The Director of the National Science
6 Foundation shall award forensic science basic research
7 grants to improve the foundation and practice of forensic
8 science in the United States, consistent with the Founda-
9 tion’s mission and the recommendations in the unified
10 Federal research strategy developed under section 4(d).

11 (b) FORENSIC SCIENCE RESEARCH CENTERS.—

12 (1) IN GENERAL.—The Director of the National
13 Science Foundation shall award grants to support
14 one or more forensic science research centers—

15 (A) to conduct research consistent with the
16 unified Federal research strategy developed
17 under section 4(d) and with the Foundation’s
18 mission;

19 (B) to help build relationships between fo-
20 rensic science practitioners and members of the
21 research community;

22 (C) to encourage and promote the edu-
23 cation and training of a diverse group of people
24 to be leaders in the interdisciplinary field of fo-
25 rensic science; and

1 (D) to broadly disseminate the results of
2 the research conducted under subparagraph
3 (A).

4 (2) LIMITATION ON USE OF FUNDS.—No funds
5 authorized under this section may be used to con-
6 struct or renovate a building or structure.

7 (3) REPORTS.—Each forensic science research
8 center shall submit an annual report to the Director
9 of the National Science Foundation, at such time
10 and in such manner as the Director may require,
11 that contains a description of the activities the cen-
12 ter carried out with the funds received under this
13 section.

14 (c) EVALUATION.—

15 (1) IN GENERAL.—The Director of the National
16 Science Foundation shall conduct a comprehensive
17 evaluation of the Foundation's full portfolio of foren-
18 sic science research and education grants every 4
19 years—

20 (A) to determine whether the research sup-
21 ported under the grants is contributing to the
22 objectives of improving the foundation and
23 practice of forensic science in the United
24 States; and

1 (B) to evaluate the extent to which the re-
2 search is contributing toward the priorities and
3 objectives described in the unified Federal re-
4 search strategy developed under section 4(d).

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

9 **SEC. 8. FORENSIC SCIENCE AND STANDARDS AT NIST.**

10 (a) IN GENERAL.—The Director of the National In-
11 stitute of Standards and Technology shall—

12 (1) conduct research supporting the develop-
13 ment and dissemination of methods, standards, and
14 technical guidance for forensic science measure-
15 ments; and

16 (2) identify and coordinate the development of
17 voluntary consensus forensic science standards, in-
18 cluding—

19 (A) methods, standards, and technical
20 guidance, including protocols and best practices,
21 for analysis and interpretation;

22 (B) technical standards useful in the devel-
23 opment of products employed by forensic
24 science practitioners;

1 (C) standard content, terminology, and pa-
2 rameters to be used in reporting the results and
3 interpretation of forensic science measurements,
4 tests, and procedures; and

5 (D) standards for the interoperability of
6 forensic science-related technology and data-
7 bases.

8 (b) VALIDATION PROGRAM.—The Director of the Na-
9 tional Institute of Standards and Technology shall—

10 (1) develop forensic science measurement stand-
11 ards, standard reference materials, standard ref-
12 erence data, and other reference materials to sup-
13 port forensic science disciplines and associated meas-
14 urements;

15 (2) test and validate existing forensic science
16 standards, as appropriate; and

17 (3) provide independent validation of forensic
18 science measurements and methods, as appropriate.

19 (c) CONSULTATION.—In carrying out its responsibil-
20 ities under subsection (a), the Director of the National
21 Institute of Standards and Technology, as appropriate,
22 shall consult with, and in carrying out its responsibilities
23 under subsection (a)(1) may partner or contract with—

1 (1) standards development organizations and
2 other stakeholders, including the Department of
3 Justice and other relevant Federal agencies; and

4 (2) testing laboratories, State and local forensic
5 science practitioners, and certification and accredita-
6 tion bodies.

7 (d) PRIORITIZATION.—When prioritizing its respon-
8 sibilities under subsection (a), the Director of the National
9 Institute of Standards and Technology shall consider—

10 (1) the unified Federal research strategy devel-
11 oped under section 4(d); and

12 (2) the recommendations of the scientific area
13 committees established under subsection (f).

14 (e) PUBLIC REVIEW AND COMMENT.—The Director
15 of the National Institute of Standards and Technology
16 shall ensure that any proposed voluntary consensus stand-
17 ards, guidelines, or methods developed by the National In-
18 stitute of Standards and Technology under this section are
19 publically available, and that the forensic community has
20 an opportunity for public review and comment on vol-
21 untary consensus standards.

22 (f) CENTER OF EXCELLENCE.—

23 (1) IN GENERAL.—The Director of the National
24 Institute of Standards and Technology shall estab-
25 lish and operate a competitively selected Center of

1 Excellence focusing on measurement sciences, tech-
2 nology, and standards in forensic science with the
3 following objectives:

4 (A) To improve the standards of practice
5 in the forensic sciences in the United States.

6 (B) To produce research collaborations
7 among the National Institute of Standards and
8 Technology, academia, forensic science practi-
9 tioners, and industry focused on accelerating in-
10 novations and new technology development in
11 the forensic sciences.

12 (C) To fund the development of new
13 forensics techniques, including automated test-
14 ing methodologies, and to help transition these
15 techniques to industry and practitioners.

16 (D) To evaluate new and existing forensic
17 techniques in terms of reliability, cost effective-
18 ness, and other metrics, as appropriate, and to
19 help transition these techniques to industry and
20 practitioners.

21 (E) To provide training opportunities for
22 undergraduate, graduate, and postdoctoral stu-
23 dents in measurement science, as is relevant to
24 the forensic disciplines.

1 (F) To encourage interdisciplinary re-
2 search in the forensic sciences by leveraging ac-
3 cess to unique National Institute of Standards
4 and Technology facilities and expertise, as ap-
5 propriate.

6 (G) To broadly disseminate the results of
7 the National Institute of Standards and Tech-
8 nology forensic science research.

9 (2) EVALUATION.—The Director of the Na-
10 tional Institute of Standards and Technology shall
11 conduct a comprehensive evaluation of the Center of
12 Excellence every 4 years—

13 (A) to determine whether the Center of
14 Excellence is achieving the objectives outlined in
15 paragraph (1); and

16 (B) to evaluate the extent to which the
17 Center of Excellence is contributing toward the
18 priorities and objectives described in the unified
19 Federal research strategy developed under sec-
20 tion 4(d).

21 (3) REPORT REQUIREMENT.—The Director of
22 the National Institute of Standards and Technology
23 shall report to the Committee on Commerce,
24 Science, and Transportation and the Committee on
25 the Judiciary of the Senate, the Committee on

1 Science, Space, and Technology and the Committee
2 on the Judiciary of the House of Representatives,
3 and the Director of the Coordinating Office the re-
4 sults of each comprehensive evaluation under para-
5 graph (2).

6 (g) SCIENTIFIC AREA COMMITTEES.—

7 (1) IN GENERAL.—The Director of the National
8 Institute of Standards and Technology shall estab-
9 lish scientific area committees to identify gaps in
10 and opportunities for standards development in the
11 forensic sciences. The scientific area committees
12 shall be administered by the Director of the National
13 Institute of Standards and Technology.

14 (2) DUTIES.—

15 (A) IN GENERAL.—The scientific area
16 committees shall be the primary mechanism for
17 identifying and coordinating the development of
18 voluntary consensus forensic science standards
19 as described in subsection (a). The scientific
20 area committees shall submit, for consideration
21 by forensic science stakeholders and by the
22 Commission established in section 9, rec-
23 ommendations on these forensic science stand-
24 ards. In accomplishing this objective, the sci-
25 entific area committees shall—

1 (i) encourage information exchange
2 within the forensic science community, to
3 include researchers, practitioners, law en-
4 forcement, and legal professionals;

5 (ii) ensure that standards develop-
6 ment is appropriate to the needs of the fo-
7 rensic science community and relevant to
8 practical applications;

9 (iii) take into account existing studies
10 and reports; and

11 (iv) support public participation in the
12 standards development process and the
13 broad adoption of forensic science stand-
14 ards by holding public meetings and dis-
15 seminating work products for public review
16 and comment to the extent practicable.

17 (B) VALIDATION OF RECOMMENDA-
18 TIONS.—A recommendation on a forensic
19 science standard under subparagraph (A) may
20 not be published in the Federal Register until
21 it has been subject to the validation program
22 described in subsection (b).

23 (3) MEMBERS.—The scientific area committees
24 shall have significant representation from forensic
25 science practitioners, academic researchers, and stat-

1 isticians to balance scientific rigor with practical and
2 regulatory constraints, and, to the extent prac-
3 ticable, the majority of the scientific area commit-
4 tees shall have a minimum representation of 50 per-
5 cent from forensic science practitioners. Each mem-
6 ber of a scientific area committee shall have signifi-
7 cant academic, research, or practical expertise in a
8 discipline of forensic science or in another area rel-
9 evant to the purpose of the scientific area com-
10 mittee.

11 (4) FEDERAL ADVISORY COMMITTEE ACT.—A
12 scientific area committee established under this sub-
13 section shall not be subject to the Federal Advisory
14 Committee Act (5 U.S.C. App.).

15 **SEC. 9. NATIONAL COMMISSION ON FORENSIC SCIENCE.**

16 (a) ESTABLISHMENT.—The Director of the National
17 Institute of Standards and Technology and the Attorney
18 General, in consultation with the Director of the National
19 Science Foundation, shall establish a National Commis-
20 sion on Forensic Science.

21 (b) DUTIES.—The Commission shall—

22 (1) provide advice to Federal agencies imple-
23 menting the unified Federal research strategy devel-
24 oped under section 4(d);

1 (2) provide advice to the National Institute of
2 Standards and Technology, including recommenda-
3 tions regarding the National Institute of Standards
4 and Technology's responsibilities under section 8;

5 (3) receive and review recommendations on
6 standards development from the scientific area com-
7 mittees established under section 8(g) and, based on
8 its review, advise the Department of Justice on the
9 promotion of forensic science standards; and

10 (4) provide advice to the Department of Jus-
11 tice, including recommendations regarding the devel-
12 opment of a forensic science uniform code of profes-
13 sional responsibility and the Department of Justice's
14 responsibilities under section 10.

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

20 (d) CHAIRS.—The Director of the National Institute
21 of Standards and Technology and the Attorney General,
22 or their designees, shall co-chair the Commission.

23 (e) MEMBERSHIP.—The Director of the National In-
24 stitute of Standards and Technology and the Attorney
25 General, in consultation with the Director of the National

1 Science Foundation, shall appoint each member of the
2 Commission. The Commission shall include balanced rep-
3 resentation among—

4 (1) independent scientists with expertise in fo-
5 rensic science disciplines and other related dis-
6 ciplines, including statistics, social sciences, and en-
7 gineering;

8 (2) forensic science practitioners, including fo-
9 rensic science experts at Federal, State, local, and
10 tribal forensic laboratories; and

11 (3) users and parties subject to the use of fo-
12 rensic evidence in the legal system, including the
13 legal community, victim advocate organizations, and
14 law enforcement.

15 (f) ADMINISTRATION.—The Attorney General shall
16 provide administrative support to the Commission.

17 **SEC. 10. ADOPTION, ACCREDITATION, AND CERTIFICATION.**

18 The Attorney General shall promote the adoption of
19 forensic science standards developed under section 8, in-
20 cluding—

21 (1) by requiring, as appropriate, each labora-
22 tory under the Department of Justice to adopt the
23 forensic science standards;

24 (2) by encouraging other Federal forensic lab-
25 oratories to adopt the forensic science standards;

1 (3) by promoting accreditation and certification
2 requirements based on the forensic science stand-
3 ards; and

4 (4) by promoting any recommendations made
5 by the Commission for adoption and implementation
6 of forensic science standards.

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