

116TH CONGRESS
2D SESSION

S. 4568

To facilitate the development and distribution of forensic science standards by establishing in the National Institute of Standards and Technology the Organization of Scientific Area Committees for Forensic Science, and for other purposes.

IN THE SENATE OF THE UNITED STATES

SEPTEMBER 14, 2020

Mr. WICKER (for himself and Ms. CANTWELL) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

A BILL

To facilitate the development and distribution of forensic science standards by establishing in the National Institute of Standards and Technology the Organization of Scientific Area Committees for Forensic Science, 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 Re-
5 search and Standards Act of 2020”.

6 **SEC. 2. FINDINGS.**

7 Congress makes the following findings:

1 (1) In 2009, the National Research Council
2 published a report entitled “Strengthening Forensic
3 Science in the United States: A Path Forward”,
4 which provided a roadmap for the future of forensics
5 research.

6 (2) The Federal Government, forensic science
7 community, the research community, and the legal
8 community have taken steps to move the field of fo-
9 rensic science forward since the release of this re-
10 port.

11 (3) There are still scientific advances to be
12 made to bring further rigor to the forensic analyses
13 used in courts across the United States.

14 **SEC. 3. DEFINITIONS.**

15 In this Act:

16 (1) APPROPRIATE COMMITTEES OF CON-
17 GRESS.—The term “appropriate committees of Con-
18 gress” means—

19 (A) the Committee on Commerce, Science,
20 and Transportation of the Senate; and

21 (B) the Committee on Science, Space, and
22 Technology of the House of Representatives.

23 (2) BOARD.—The term “Board” means the Fo-
24 rensic Science Standards Board established under
25 section 5(b)(1).

1 (3) FORENSIC SCIENCE.—The term “forensic
2 science” refers to the application of scientific or
3 technical practices to the recognition, collection,
4 analysis, and interpretation of evidence to establish
5 opinions, facts, and findings that can be used for
6 criminal and civil law or regulatory purposes.

7 (4) FORENSIC SCIENCE COMMUNITY.—The
8 term “forensic science community” means forensic
9 science practitioners, agencies, and service providers,
10 forensic medicolegal death investigators, medical ex-
11 aminers or coroners, agencies, and service providers,
12 various scientists, and forensic organizational mem-
13 bers with applied scientific and technical knowledge
14 of and proximity to the area of forensic science.

15 (5) FORENSIC SCIENCE PRACTITIONER.—The
16 term “forensic science practitioner” means an indi-
17 vidual who—

18 (A) applies scientific or technical practices
19 to the recognition, collection, analysis, or inter-
20 pretation of evidence for criminal and civil law
21 or regulatory purposes; and

22 (B) issues test results, provides reports, or
23 provides interpretations, conclusions, or opin-
24 ions through testimony with respect to such evi-
25 dence.

1 (6) ORGANIZATION.—The term “Organization”
2 means the Organization of Scientific Area Commit-
3 tees for Forensic Science established under section
4 5(a)(1).

5 (7) NONGOVERNMENTAL STANDARDS DEVELOP-
6 MENT ORGANIZATIONS.—The term “nongovern-
7 mental standards development organization” means
8 a standards developing organization as defined in
9 section 2(e) of Office of Management and Budget
10 Circular A–119 (relating to Federal participation in
11 the development and use of voluntary consensus
12 standards in conformity assessment activities), or
13 any successor document.

14 **SEC. 4. NATIONAL FORENSIC SCIENCE RESEARCH COORDI-**
15 **NATION AND STRATEGY.**

16 (a) INTERAGENCY WORKING GROUP ON FORENSIC
17 SCIENCE.—

18 (1) ESTABLISHMENT.—The Director of the Of-
19 fice of Science and Technology Policy shall establish
20 an interagency working group (referred to in this
21 section as the “Working Group”) for the purpose of
22 developing a research strategy for forensic science.

23 (2) MEMBERSHIP.—

24 (A) COMPOSITION.—The Working Group
25 shall be composed of members as follows:

1 (i) One or more members selected by
2 the Director of the National Science Foun-
3 dation as the Director of the National
4 Science Foundation considers appropriate.

5 (ii) One or more members selected by
6 the Director of the National Institute of
7 Standards and Technology as the Director
8 of the National Institute of Standards and
9 Technology considers appropriate.

10 (iii) One or more members selected by
11 the Attorney General as the Attorney Gen-
12 eral considers appropriate, which shall in-
13 clude a representative with expertise in
14 conducting scientific research.

15 (iv) One or more members selected by
16 the Director of the Office of Science and
17 Technology Policy as the Director con-
18 siders appropriate.

19 (v) Such additional members from
20 such other Federal agencies responsible for
21 conducting forensic science research or
22 that have expertise in conducting and
23 funding scientific research as the Director
24 of the Office of Science and Technology
25 Policy considers appropriate.

1 (B) REQUIREMENT.—Each member of the
2 Working Group appointed under subparagraph
3 (A) shall be an employee of the Federal Govern-
4 ment.

5 (3) CHAIRPERSON AND VICE CHAIRPERSON.—

6 (A) IN GENERAL.—The Working Group
7 shall select a Chairperson and Vice Chairperson
8 from among the members of the Working
9 Group.

10 (B) TERM.—The terms of the Chairperson
11 and the Vice Chairperson of the Working Group
12 shall each be for periods of 2 years.

13 (C) ROTATING BASIS.—After the initial
14 terms of the Chairperson and Vice Chairperson
15 of the Working Group, such positions shall be
16 filled on a rotating basis from the members of
17 the Working group for successive 2-year terms.

18 (4) RESEARCH STRATEGY.—

19 (A) IN GENERAL.—Not later than 1 year
20 after the date of the enactment of this Act and
21 not less frequently than once every 2 years
22 thereafter until the termination of the Working
23 Group, the Working Group shall publish a re-
24 search strategy for the Federal Government on
25 forensic science.

1 (B) CONTENTS.—The strategy required by
2 subparagraph (A) shall include the following:

3 (i) Specification of priority areas, in-
4 cluding specific milestones and objectives
5 as appropriate, for the short-term and
6 long-term research necessary—

7 (I) to enhance the validity and
8 reliability of forensic science dis-
9 ciplines, including emerging dis-
10 ciplines; and

11 (II) to provide the scientific basis
12 for the development and updating of
13 forensic science standards pursuant to
14 section 5.

15 (ii) A description of the role of each
16 relevant Federal agency in supporting the
17 specific areas of research identified under
18 clause (i).

19 (iii) A description of common metrics
20 and other evaluation criteria that will be
21 used to assess progress toward achieving
22 the priorities, milestones, and objectives
23 identified under clause (i), consistent with
24 the mission of each Federal agency speci-
25 fied under clause (ii).

1 (iv) Recommendations, if any, for
2 policies to support the implementation of
3 the research strategy, including opportuni-
4 ties for new or expanded interagency col-
5 laborations.

6 (v) A description of the options, if
7 any, for a Federal Government role in
8 helping to ensure the viability of a non-
9 governmental standards development orga-
10 nization for the promulgation of forensic
11 science standards developed under section
12 5.

13 (vi) A description of changes or
14 progress since the publication of the pre-
15 vious research strategy.

16 (5) CONSULTATION REQUIRED.—In developing
17 the research strategy under paragraph (4), the
18 Working Group shall consult with stakeholders, in-
19 cluding forensic science practitioners, forensic
20 science working groups within the Office of Justice
21 Programs of the Department of Justice, the Organi-
22 zation of Scientific Area Committees (OSAC) for
23 Forensic Science of the National Institute of Stand-
24 ards and Technology, statisticians, criminal justice
25 stakeholders, and research scientists to ensure that

1 the strategy takes into account practical applications
2 and implementation of the research.

3 (6) TERMINATION.—The Working Group estab-
4 lished under paragraph (1) shall terminate on the
5 date that is 10 years after the date on which such
6 working group is established.

7 (b) IMPLEMENTATION.—The Director of the National
8 Science Foundation, the Director of the National Institute
9 of Standards and Technology, and the Attorney General,
10 shall continue to advance the foundation and practice of
11 forensic science in the United States by—

12 (1) conducting or supporting research in foren-
13 sic science, consistent with the Federal research
14 strategy developed under subsection (a)(3);

15 (2) building relationships between members of
16 the forensic science community and researchers at
17 universities;

18 (3) encouraging and promoting the education
19 and training of a diverse group of people to be lead-
20 ers in the interdisciplinary field of forensic science;
21 and

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

1 **SEC. 5. FACILITATING DEVELOPMENT AND DISTRIBUTION**
2 **OF FORENSIC SCIENCE STANDARDS.**

3 (a) ORGANIZATION OF SCIENTIFIC AREA COMMIT-
4 TEES FOR FORENSIC SCIENCE.—

5 (1) ESTABLISHMENT.—The Secretary of Com-
6 merce, acting through the Director of the National
7 Institute of Standards and Technology, shall estab-
8 lish in the National Institute of Standards and
9 Technology an organization to facilitate the develop-
10 ment of forensic science standards.

11 (2) DESIGNATION.—The organization estab-
12 lished under paragraph (1) shall be known as the
13 “Organization of Scientific Area Committees for Fo-
14 rensic Science”.

15 (3) COMPOSITION.—The Organization shall be
16 composed of the following:

17 (A) The Forensic Science and Standards
18 Board established under subsection (b).

19 (B) Each scientific area committee estab-
20 lished under subsection (c).

21 (4) DUTIES OF THE ORGANIZATION.—The du-
22 ties of the Organization are as follows:

23 (A) Facilitating the development and dis-
24 tribution of scientifically sound, consensus-
25 based documentary standards and guidelines for
26 forensic science, including through formal col-

1 laboration with nongovernmental standards de-
2 velopment organizations.

3 (B) Establishing a registry of scientifically
4 sound forensic science standards and guidelines
5 approved and endorsed by the Organization.

6 (C) Establish a process for regularly re-
7 evaluating existing standards and guidelines
8 published for placement on the registry estab-
9 lished under subparagraph (B).

10 (D) Promoting the adoption of the stand-
11 ards and guidelines described in subparagraph
12 (A) by the forensic science community and as
13 included in the registry established under sub-
14 paragraph (B).

15 (b) FORENSIC SCIENCE STANDARDS BOARD.—

16 (1) ESTABLISHMENT.—The Secretary, acting
17 through the Director, shall establish in the Organi-
18 zation a board to oversee the operations of the Orga-
19 nization and its committees.

20 (2) DESIGNATION.—The board established
21 under paragraph (1) shall be known as the “Foren-
22 sic Science Standards Board”.

23 (3) COMPOSITION.—The Board shall be com-
24 posed of the following:

1 (A) Members selected by the Secretary to
2 serve on the Board from among—

3 (i) members of the forensic science
4 community;

5 (ii) scientists and engineers with rel-
6 evant expertise at institutions of higher
7 education and other nonprofit research or-
8 ganizations;

9 (iii) statisticians;

10 (iv) a representative of each of the
11 task groups established under subsection
12 (d), as the Secretary considers appropriate;
13 and

14 (v) such other communities or sectors
15 as the Secretary considers appropriate.

16 (B) The chairpersons of the scientific area
17 committees established under subsection (c).

18 (4) DUTIES.—The duties of the Board are as
19 follows:

20 (A) Overseeing all operations of the Orga-
21 nization, including the committees of the Orga-
22 nization.

23 (B) Establishing governance rules and
24 policies for the Organization.

1 (C) Facilitating communication within the
2 Organization and between the Organization, the
3 criminal justice community, and the forensic
4 science community.

5 (D) Overseeing the reviewing and approv-
6 ing process of standards to be added to the reg-
7 istry established under subsection (a)(4)(B).

8 (5) AUTHORITY TO APPROVE STANDARDS FOR
9 LISTING IN REGISTRY OF FORENSIC SCIENCE STAND-
10 ARDS AND GUIDELINES.—The Board may approve
11 standards for listing on the registry established
12 under subsection (a)(4)(B).

13 (c) SCIENTIFIC AREA COMMITTEES.—

14 (1) ESTABLISHMENT.—The Secretary, acting
15 through the Director, shall establish one or more sci-
16 entific area committees to carry out the work of the
17 Organization.

18 (2) MEMBERSHIP.—

19 (A) COMPOSITION.—Each scientific area
20 committee established under paragraph (1)
21 shall be composed of the following:

22 (i) The chairperson of the scientific
23 area committee.

24 (ii) The vice chairperson of the sci-
25 entific area committee.

1 (iii) Each chairperson of a sub-
2 committee established in the scientific area
3 committee under paragraph (3).

4 (B) CHAIRPERSON AND VICE CHAIR-
5 PERSON.—

6 (i) IN GENERAL.—For each scientific
7 area committee established under para-
8 graph (1), the Secretary shall appoint a
9 chairperson and a vice chairperson for the
10 scientific area committee from among indi-
11 viduals with expertise in the subject area
12 of the scientific area committee.

13 (ii) SERVICE.—Each chairperson and
14 vice chairperson appointed under clause (i)
15 shall serve as a chairperson or vice chair-
16 person at the pleasure of the Secretary.

17 (3) SUBCOMMITTEES.—

18 (A) ESTABLISHMENT.—The Secretary may
19 establish such subcommittees in a scientific
20 area committee established under paragraph (1)
21 as the Secretary considers appropriate to assist
22 in the work of the scientific area committee.

23 (B) MEMBERSHIP.—Each subcommittee
24 established under subparagraph (A) shall be

1 composed of such members selected by the Sec-
2 retary from among the following:

3 (i) Forensic science practitioners.

4 (ii) Scientists and engineers at institu-
5 tions of higher education and other non-
6 profit research organizations.

7 (iii) Statisticians.

8 (iv) Representatives of the legal com-
9 munity.

10 (v) Such others as the Secretary con-
11 siders appropriate for purposes of this sec-
12 tion.

13 (4) DUTIES.—The duties of a scientific area
14 committee established under paragraph (1) shall be
15 as follows:

16 (A) Coordinating the operation and activi-
17 ties of specific forensic science discipline sub-
18 committees in order to encourage communica-
19 tion across all subject and discipline specific
20 subcommittees.

21 (B) Providing opportunity to the public to
22 engage the forensic science community in mat-
23 ters relating to priorities, standards, and guide-
24 lines.

1 (C) Covering topics of high importance to
2 the forensic community, such as matters relat-
3 ing to the following:

4 (i) Biology.

5 (ii) Chemistry, including—

6 (I) matters relating to seized
7 drugs and toxicology; and

8 (II) matters relating to trace evi-
9 dence.

10 (iii) Scene examination.

11 (iv) Medicine.

12 (v) Digital and multimedia.

13 (vi) Physics and pattern interpreta-
14 tion.

15 (vii) Computational forensic algo-
16 rithms.

17 (D) Furthering the development of stand-
18 ards under subsection (e)(1) and other guide-
19 lines.

20 (d) RESOURCE TASK GROUPS.—

21 (1) ESTABLISHMENT.—The Secretary, acting
22 through the Board, shall establish legal, human fac-
23 tors, quality, and statistics task groups to support
24 and assist the Organization with matters relating to
25 questions of law, human factors, ethical and social

1 implications of technology, workflow processes, qual-
2 ity assurance, and statistics.

3 (2) MEMBERSHIP.—The Secretary, acting
4 through the Board, shall ensure that each task
5 group established under paragraph (1) is composed
6 of voting members of the subcommittees established
7 under subsection (c)(3) who have relevant expertise.

8 (3) CHAIRPERSONS.—The Secretary, acting
9 through the Board, shall appoint a chairperson of
10 each task group established under paragraph (1).

11 (e) FORENSIC SCIENCE STANDARDS DEVELOPMENT
12 PROCESS.—

13 (1) STANDARDS DEVELOPMENT PROCESS.—The
14 Secretary, acting through the Organization, shall im-
15 plement a process to facilitate the development of
16 scientifically sound, consensus-based forensic stand-
17 ards and guidelines, consistent with the duties de-
18 scribed for each entity established under this section.

19 (2) TECHNICAL REVIEW.—

20 (A) PROCESS REQUIRED.—The Secretary
21 shall establish a process for technical peer re-
22 view to provide feedback on a draft of a stand-
23 ard or guideline to a relevant subcommittee of
24 a scientific area committee before such stand-
25 ard or guideline is submitted to a nongovern-

1 mental standards development organization or
2 submitted for inclusion in a registry of forensic
3 standards or guidelines.

4 (B) PARTICIPANTS.—The process estab-
5 lished under subparagraph (A)—

6 (i) may include members of the Orga-
7 nization; and

8 (ii) shall include additional volunteer
9 experts from the forensic science commu-
10 nity and the academic research community.

11 (3) PUBLIC COMMENT.—

12 (A) IN GENERAL.—The Secretary shall
13 provide for public comment on draft standards
14 prior to inclusion in the registry of forensic
15 science standards and guidelines established
16 under subsection (a)(4)(B).

17 (B) COMMENTS FROM RESEARCH TASK
18 GROUPS.—The Secretary shall ensure that—

19 (i) each resource task group estab-
20 lished under subsection (d) may submit, as
21 a group, comments on draft standards de-
22 scribed in subparagraph (A); and

23 (ii) any comments submitted under
24 clause (i), and any adjudication of such

1 comments by the Organization, are made
2 available to the public.

3 (4) SUBMISSION TO STANDARDS DEVELOPING
4 ORGANIZATION.—The Secretary shall ensure that
5 standards proposed by the Organization and ap-
6 proved for the registry of forensic science standards
7 and guidelines established under subsection
8 (a)(4)(B) are submitted to a nongovernmental
9 standards development organization for review and
10 formal adoption as standard.

11 (5) GRANTS.—The Secretary, acting through
12 the Director, shall award grants through a competi-
13 tive process—

14 (A) to support activities under paragraph
15 (3); and

16 (B) to ensure that the standards approved
17 for inclusion in the registry of forensic science
18 standards and guidelines required by subsection
19 (a)(4)(B) are submitted to a nongovernmental
20 standards development organization.

21 (f) FORENSIC STANDARDS FOR AUTHENTICATING
22 DIGITAL EVIDENCE.—

23 (1) FURTHERING DEVELOPMENT OF STAND-
24 ARDS.—

1 (A) IN GENERAL.—The Digital or Multi-
2 media Subcommittee, or any successor thereto,
3 shall develop standards for validating or assess-
4 ing the authenticity of digital content, including
5 content created by technologies that synthesize
6 or manipulate digital content such as deepfakes.

7 (B) COLLABORATION.—In carrying out
8 subparagraph (A), the subcommittee described
9 in such subparagraph shall collaborate with the
10 forensic science community and experts who
11 study advanced techniques for digital content
12 manipulation, including those in academia and
13 government entities such as the Defense Ad-
14 vanced Research Projects Agency (DARPA).

15 (2) RESOURCE DEVELOPMENT.—The Organiza-
16 tion shall develop and compile resources and mate-
17 rials for use by the forensic science community in
18 developing standards to authenticate digital mate-
19 rials.

20 (3) CONGRESSIONAL BRIEFING.—Not later than
21 1 year after the date of the enactment of this Act,
22 the Secretary, acting through the Director, shall
23 provide the appropriate committees of Congress a
24 briefing on the status of efforts undertaken pursuant
25 to this subsection.

1 (g) AUTHORIZATION OF APPROPRIATIONS.—There is
2 authorized to be appropriated to carry out this section
3 \$6,000,000 for each of fiscal years 2021 through 2026,
4 of which \$1,000,000 shall be available in each of fiscal
5 years 2021 through 2026 to carry out subsection (e)(4).

6 **SEC. 6. FOUNDATIONAL RESEARCH.**

7 The Director shall conduct foundational studies to—

8 (1) identify and document the technical merit
9 and validity of select forensic science methods, prac-
10 tices, and disciplines, including their capabilities,
11 limitations, and knowledge gaps; and

12 (2) identify opportunities for advancements in
13 forensic methods, practices, and disciplines through
14 additional research and improvements to practice.

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