

## Calendar No. 545

112TH CONGRESS  
2D SESSION**S. 692**

To improve hurricane preparedness by establishing the National Hurricane Research Initiative, and for other purposes.

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## IN THE SENATE OF THE UNITED STATES

MARCH 30, 2011

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

NOVEMBER 14, 2012

Reported by Mr. ROCKEFELLER, with an amendment

[Strike out all after the enacting clause and insert the part printed in *italic*]

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**A BILL**

To improve hurricane preparedness by establishing the National Hurricane Research Initiative, 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 “National Hurricane  
5 Research Initiative Act of 2011”.

1 **SEC. 2. DEFINITIONS.**

2 In this Act:

3 (1) **ELIGIBLE ENTITIES.**—The term “eligible  
4 entities” means Federal, State, regional, and local  
5 government agencies and departments, tribal govern-  
6 ments, universities, research institutes, for-profit en-  
7 tities, and nongovernmental organizations.

8 (2) **INDIAN TRIBE.**—The term “Indian tribe”  
9 has the meaning given the term in section 102 of the  
10 Federally Recognized Indian Tribe List Act of 1994  
11 (25 U.S.C. 479a).

12 (3) **INITIATIVE.**—The term “Initiative” means  
13 the National Hurricane Research Initiative estab-  
14 lished under section 3(a)(1).

15 (4) **STATE.**—The term “State” means any  
16 State of the United States, the District of Columbia,  
17 American Samoa, Guam, the Commonwealth of the  
18 Northern Mariana Islands, Puerto Rico, and the  
19 Virgin Islands.

20 (5) **TRIBAL GOVERNMENT.**—The term “tribal  
21 government” means the governing body of an Indian  
22 tribe.

23 (6) **UNDER SECRETARY.**—The term “Under  
24 Secretary” means the Under Secretary for Oceans  
25 and Atmosphere.

1 **SEC. 3. NATIONAL HURRICANE RESEARCH INITIATIVE.**

2 ~~(a) ESTABLISHMENT.—~~

3 ~~(1) IN GENERAL.—~~The Under Secretary shall  
 4 establish an initiative to be known as the “National  
 5 Hurricane Research Initiative” for the purposes de-  
 6 scribed in paragraph ~~(2)~~. The Initiative shall consist  
 7 of—

8 ~~(A) the activities carried out under this~~  
 9 ~~section; and~~

10 ~~(B) the research carried out under section~~  
 11 ~~4.~~

12 ~~(2) PURPOSES.—~~The purposes described in this  
 13 paragraph are as follows:

14 ~~(A) To conduct research, incorporating to~~  
 15 ~~the maximum extent practicable the needs of el-~~  
 16 ~~igible entities, to enable the following:~~

17 ~~(i) Improvement of the understanding~~  
 18 ~~and prediction of hurricanes and other~~  
 19 ~~tropical storms, including—~~

20 ~~(I) storm tracking and pre-~~  
 21 ~~diction;~~

22 ~~(II) forecasting of storm forma-~~  
 23 ~~tion, intensity, and wind and rain pat-~~  
 24 ~~terns, both within the tropics and as~~  
 25 ~~the storms move poleward;~~

- 1 (III) storm surge modeling, in-  
2 land flood modeling, and coastal ero-  
3 sion;
- 4 (IV) the interaction with and im-  
5 pacts of storms with the natural and  
6 built environment; and
- 7 (V) the impacts to and response  
8 of society to destructive storms, in-  
9 cluding the socioeconomic impacts re-  
10 quiring emergency management, re-  
11 sponse, and recovery.
- 12 (ii) Development of infrastructure  
13 that is resilient to the forces associated  
14 with hurricanes and other tropical storms.
- 15 (iii) Mitigation of the impacts of hur-  
16 ricanes on coastal populations, the coastal  
17 built environment, and natural resources,  
18 including—
- 19 (I) coral reefs;
- 20 (II) mangroves;
- 21 (III) wetlands; and
- 22 (IV) other natural systems that  
23 can reduce hurricane wind and flood  
24 forces.

1                   (iv) Improvement of communication  
2                   with the public about hurricane forecasts  
3                   and risks associated with hurricanes to re-  
4                   duce the harmful impacts of hurricanes  
5                   and improve the response of society to de-  
6                   structive storms.

7                   (B) To provide training for the next gen-  
8                   eration of hurricane researchers and fore-  
9                   casters.

10           (b) IMPLEMENTATION PLAN.—

11                   (1) IN GENERAL.—Not later than 1 year after  
12                   the date of the enactment of this Act, the Under  
13                   Secretary shall, in coordination with the Director of  
14                   the National Science Foundation, develop a detailed,  
15                   5-year implementation plan for the Initiative that—

16                   (A) incorporates the priorities for Federal  
17                   science and technology investments set forth in  
18                   the June 2005 publication, “Grand Challenges  
19                   for Disaster Reduction”, and in related 2008  
20                   implementation plans for hurricane and coastal  
21                   inundation hazards of the Subcommittee on  
22                   Disaster Reduction of the Committee on Envi-  
23                   ronment and Natural Resources of the National  
24                   Science and Technology Council;

1           (B) to the extent practicable and as appro-  
2           priate, establishes strategic goals, benchmarks,  
3           milestones, and a set of systematic criteria and  
4           performance metrics by which the overall effec-  
5           tiveness of the Initiative may be evaluated on a  
6           periodic basis, including evaluation of mecha-  
7           nisms for the effective transition of research to  
8           operations and the application of research re-  
9           sults for reducing hurricane losses and related  
10          public benefits; and

11          (C) identifies opportunities to leverage the  
12          results of the research carried out under section  
13          4 with other Federal and non-Federal hurricane  
14          research, coordination, and loss-reduction initia-  
15          tives, such as—

16               (i) the National Windstorm Impact  
17               Reduction Program established by section  
18               204(a) of the National Windstorm Impact  
19               Reduction Act of 2004 (15 U.S.C. 15703);

20               (ii) the National Flood Insurance Pro-  
21               gram established under chapter 1 of the  
22               National Flood Insurance Act of 1968 (42  
23               U.S.C. 4011 et seq.);

1 (iii) the initiatives of the Robert T.  
2 Stafford Disaster Relief and Emergency  
3 Assistance Act (42 U.S.C. 5121 et seq.);

4 (iv) wind hazard mitigation initiatives  
5 carried out by a State;

6 (v) the Science Advisory Board, Social  
7 Science Working Group, and Hurricane  
8 Forecast Improvement Project of the Na-  
9 tional Oceanic and Atmospheric Adminis-  
10 tration; and

11 (vi) the Working Group for Tropical  
12 Cyclone Research of the Office of the Fed-  
13 eral Coordinator for Meteorological Serv-  
14 ices and Supporting Research.

15 (2) REVIEW.—Not later than 1 year after the  
16 date of the enactment of this Act, the Under Sec-  
17 retary shall make the implementation plan required  
18 by paragraph (1) available for review by the fol-  
19 lowing:

20 (A) The Director of the National Science  
21 Foundation.

22 (B) The Secretary of Homeland Security.

23 (C) The Director of the National Institute  
24 for Standards and Technology.

1           ~~(D)~~ The Commanding General of the U.S.  
2 Army Corps of Engineers.

3           ~~(E)~~ The Commander of the Naval Meteor-  
4 ology and Oceanography Command.

5           ~~(F)~~ The Associate Administrator for  
6 Science Mission Directorate of the National  
7 Aeronautics and Space Administration.

8           ~~(G)~~ The Director of the U.S. Geological  
9 Survey.

10          ~~(H)~~ The Director of the Office of Science  
11 and Technology Policy.

12          ~~(I)~~ The Director of the National Economic  
13 Council.

14          ~~(3)~~ REVISIONS.—The Under Secretary shall re-  
15 vise the implementation plan required by paragraph  
16 ~~(1)~~ not less frequently than once every 5 years.

17          ~~(c)~~ RESEARCH.—

18           ~~(1)~~ ESTABLISHMENT OF RESEARCH OBJEC-  
19 TIVES.—The Under Secretary shall, in consultation  
20 with the Director of the National Science Founda-  
21 tion, establish objectives for research carried out  
22 pursuant to section 4 that are—

23           ~~(A)~~ consistent with the purposes described  
24 in subsection ~~(a)~~(2); and



1           (B) based on the findings of the expert as-  
2           sessments and strategies published in the fol-  
3           lowing:

4           (i) The June 2005 publication enti-  
5           tled, “Grand Challenges for Disaster Re-  
6           duction”; and the related 2008 implemen-  
7           tation plans for hurricane and coastal in-  
8           undation hazards of the Subcommittee on  
9           Disaster Reduction of the Committee on  
10          Environment and Natural Resources of the  
11          National Science and Technology Council.

12          (ii) The January 2007 report by the  
13          National Science Board entitled, “Hurri-  
14          cane Warning: The Critical Need for a Na-  
15          tional Hurricane Initiative”.

16          (iii) The February 2007 report by the  
17          Office of the Federal Coordinator for Me-  
18          teorological Services and Supporting Re-  
19          search entitled, “Interagency Strategic Re-  
20          search Plan for Tropical Cyclones: The  
21          Way Ahead”.

22          (iv) Reports from the Hurricane In-  
23          tensity Working Group of the National  
24          Science Advisory Board of the National  
25          Oceanic and Atmospheric Administration.

1           (2) AREAS OF CONCENTRATION.—The objec-  
2           tives required by paragraph (1) shall provide for 3  
3           areas of concentration as follows:

4                   (A) Fundamental hurricane research,  
5                   which may include research to support contin-  
6                   ued development and maintenance of commu-  
7                   nity weather research and forecast models, in-  
8                   cluding advanced methods of observing storm  
9                   structure and assimilating observations into the  
10                  models, in which the agency or institution  
11                  hosting the models ensures broad access and  
12                  use of the model by the civilian research com-  
13                  munity.

14                  (B) Technology assessment and develop-  
15                  ment.

16                  (C) Research on integration, transition,  
17                  and application of research results.

18           (d) NATIONAL WORKSHOPS AND CONFERENCES.—

19           The Under Secretary may, in coordination with the Direc-  
20           tor of the National Science Foundation, carry out a series  
21           of national workshops and conferences that assemble a  
22           broad collection of scientific disciplines—

23                   (1) to address hurricane-related research ques-  
24                   tions; and

1           (2) to encourage researchers to work collabo-  
 2           ratively to carry out the purposes described in sub-  
 3           section (a)(2).

4           (e) PUBLIC INTERNET WEB SITE.—The Under Sec-  
 5           retary shall facilitate the establishment of a public Inter-  
 6           net Web site for the Initiative—

7           (1) to foster collaboration and interactive dia-  
 8           logues among the Under Secretary, the Director of  
 9           the National Science Foundation, and the public;

10          (2) to enhance public access to Initiative docu-  
 11          ments and products, including—

12               (A) reports and publications of the Initia-  
 13               tive;

14               (B) the most recent 5-year implementation  
 15               plan developed under subsection (b); and

16               (C) each annual cross-cut budget and re-  
 17               port submitted to Congress under subsection  
 18               (f); and

19          (3) that includes a publicly accessible clearing-  
 20          house of Federal research and development centers  
 21          engaged in research and development efforts that  
 22          are complementary to the Initiative.

23          (f) ANNUAL CROSS-CUT BUDGET AND REPORT.—

24               (1) REQUIREMENT FOR ANNUAL CROSS-CUT  
 25               BUDGET AND REPORT.—Beginning with the first fis-

1 eal year beginning after the date the Under Sec-  
2 retary completes the implementation plan required  
3 by subsection (b); the Director of the Office of  
4 Science and Technology Policy shall, in conjunction  
5 with the Under Secretary, the Director of the Na-  
6 tional Science Foundation, and the Director of the  
7 Office of Management and Budget, submit to Con-  
8 gress each year, together with documents submitted  
9 to Congress in support of the budget of the Presi-  
10 dent for the fiscal year beginning in such year (as  
11 submitted pursuant to section 1105 of title 31,  
12 United States Code)—

13 (A) a coordinated annual report for the  
14 Initiative for the last fiscal year ending before  
15 the date on which the report is submitted; and

16 (B) a cross-cut budget for the Initiative for  
17 the first fiscal year beginning after the date on  
18 which the report is submitted.

19 (2) CONTENTS.—The report required by para-  
20 graph (1)(A) shall—

21 (A) document the grants and contracts  
22 awarded to eligible entities under section 4;

23 (B) for each eligible entity that receives a  
24 grant or contract under section 4, identify what

1 major activities were undertaken with such  
2 funds, grants, and contracts; and

3 ~~(C)~~ for each research activity or group of  
4 activities in an area of concentration described  
5 in subsection (e)(2), as appropriate, identify  
6 any accomplishments, which may include full or  
7 partial achievement of any strategic goals,  
8 benchmarks, milestones, or systematic criteria  
9 and performance metrics established for the im-  
10 plementation plan under subsection (b)(1)(B).

11 **SEC. 4. NATIONAL HURRICANE RESEARCH.**

12 ~~(a) NATIONAL SCIENCE FOUNDATION COMPETITIVE~~  
13 ~~GRANT RESEARCH PROGRAM.—~~

14 ~~(1) IN GENERAL.—~~The Director of the National  
15 Science Foundation shall, in coordination with the  
16 Under Secretary, establish a program to award  
17 grants to eligible entities to carry out research that  
18 is consistent with the research objectives established  
19 under section 3(c)(1).

20 ~~(2) SELECTION.—~~The National Science Foun-  
21 dation shall select grant recipients under this section  
22 through its merit review process.

23 ~~(b) NATIONAL OCEANIC AND ATMOSPHERIC ADMIN-~~  
24 ~~ISTRATION RESEARCH PROGRAM.—~~

1           (1) IN GENERAL.—The Under Secretary shall,  
2           in coordination with the Director of the National  
3           Science Foundation, carry out a program of research  
4           that is consistent with the research objectives estab-  
5           lished under section 3(e)(1).

6           (2) RESEARCH ACTIVITIES.—Research carried  
7           out under paragraph (1) may be carried out  
8           through—

9                   (A) intramural research;

10                   (B) awarding grants to eligible entities to  
11           carry out research;

12                   (C) contracting with eligible entities to  
13           carry out research; or

14                   (D) entering into cooperative agreements  
15           to carry out research.

16           (3) DEMONSTRATION PROJECTS AUTHOR-  
17           IZED.—Research carried out under this subsection  
18           may include demonstration projects.

19           (e) COLLABORATION.—To the maximum extent prac-  
20           ticable, each entity carrying out research under this sec-  
21           tion shall collaborate with existing Federal and federally  
22           funded research centers operating in related fields, for-  
23           profit organizations, and international, regional, State,  
24           local, and tribal governments—

1           (1) to gather and share experiential informa-  
2           tion; and

3           (2) to advance scientific and engineering knowl-  
4           edge, technology transfer, and technology commer-  
5           cialization in the course of conduct of hurricane-re-  
6           lated research and its application to mitigating the  
7           impacts of hurricanes and other tropical storms on  
8           society.

9   **SECTION 1. SHORT TITLE.**

10        *This Act may be cited as the “National Hurricane Re-  
11   search Initiative Act of 2011”.*

12   **SEC. 2. DEFINITIONS.**

13        *In this Act:*

14           (1) *ELIGIBLE ENTITIES.*—*The term “eligible en-  
15   tities” means Federal, State, regional, and local gov-  
16   ernment agencies and departments, tribal govern-  
17   ments, universities, research institutes, for-profit enti-  
18   ties, and nongovernmental organizations.*

19           (2) *INDIAN TRIBE.*—*The term “Indian tribe” has  
20   the meaning given the term in section 102 of the Fed-  
21   erally Recognized Indian Tribe List Act of 1994 (25  
22   U.S.C. 479a).*

23           (3) *INITIATIVE.*—*The term “Initiative” means  
24   the National Hurricane Research Initiative estab-  
25   lished under section 3(a)(1).*

1           (4) *STATE*.—The term “State” means any State  
2 of the United States, the District of Columbia, Amer-  
3 ican Samoa, Guam, the Commonwealth of the North-  
4 ern Mariana Islands, Puerto Rico, and the Virgin Is-  
5 lands.

6           (5) *TRIBAL GOVERNMENT*.—The term “tribal  
7 government” means the governing body of an Indian  
8 tribe.

9           (6) *UNDER SECRETARY*.—The term “Under Sec-  
10 retary” means the Under Secretary for Oceans and  
11 Atmosphere.

12 **SEC. 3. NATIONAL HURRICANE RESEARCH INITIATIVE.**

13 (a) *ESTABLISHMENT*.—

14           (1) *IN GENERAL*.—The Under Secretary shall es-  
15 tablish an initiative to be known as the “National  
16 Hurricane Research Initiative” for the purposes de-  
17 scribed in paragraph (2). The Initiative shall consist  
18 of—

19                   (A) the activities carried out under this sec-  
20 tion; and

21                   (B) the research carried out under section 4.

22           (2) *PURPOSES*.—The purposes described in this  
23 paragraph are as follows:



1           (A) *To conduct research, incorporating to*  
2 *the maximum extent practicable the needs of eli-*  
3 *gible entities, to enable the following:*

4           (i) *Improvement of the understanding*  
5 *and prediction of hurricanes and other*  
6 *tropical storms, including—*

7           (I) *storm tracking and intensity*  
8 *predictive studies, including hurricane*  
9 *modeling programs at the mesoscale*  
10 *and convective scale conducted by eligi-*  
11 *ble entities, to improve hurricane track*  
12 *accuracy and intensity prediction;*

13           (II) *forecasting of storm forma-*  
14 *tion, intensity, and wind and rain*  
15 *patterns, both within the tropics and*  
16 *as the storms move poleward;*

17           (III) *storm surge modeling, in-*  
18 *land flood modeling, and coastal ero-*  
19 *sion;*

20           (IV) *the interaction with and im-*  
21 *pacts of storms with the natural and*  
22 *built environment; and*

23           (V) *the impacts to and response of*  
24 *society to destructive storms, including*  
25 *the socioeconomic impacts requiring*

1                    *emergency management, response, and*  
2                    *recovery.*

3                    *(ii) Development of infrastructure that*  
4                    *is resilient to the forces associated with hur-*  
5                    *ricanes and other tropical storms.*

6                    *(iii) Mitigation of the impacts of hur-*  
7                    *ricanes on coastal populations, the coastal*  
8                    *built environment, and natural resources,*  
9                    *including—*

10                    *(I) coral reefs;*

11                    *(II) mangroves;*

12                    *(III) wetlands; and*

13                    *(IV) other natural systems that*  
14                    *can reduce hurricane wind and flood*  
15                    *forces.*

16                    *(iv) Improvement of communication*  
17                    *with the public about hurricane forecasts*  
18                    *and risks associated with hurricanes to re-*  
19                    *duce the harmful impacts of hurricanes and*  
20                    *improve the response of society to destruc-*  
21                    *tive storms.*

22                    *(B) To provide training for the next genera-*  
23                    *tion of hurricane researchers and forecasters.*

24                    *(b) IMPLEMENTATION PLAN.—*

1           (1) *IN GENERAL.*—Not later than 540 days after  
2           the date of the enactment of this Act, the Under Sec-  
3           retary shall, in consultation with the Director of the  
4           National Science Foundation, develop a detailed, 5-  
5           year implementation plan for the Initiative that—

6                   (A) incorporates the priorities for Federal  
7                   science and technology investments set forth in  
8                   the June 2005 publication, “Grand Challenges  
9                   for Disaster Reduction”, and in related 2008 im-  
10                  plementation plans for hurricane and coastal in-  
11                  undation hazards of the Subcommittee on Dis-  
12                  aster Reduction of the Committee on Environ-  
13                  ment and Natural Resources of the National  
14                  Science and Technology Council;

15                  (B) to the extent practicable and as appro-  
16                  priate, establishes strategic goals, benchmarks,  
17                  milestones, and a set of systematic criteria and  
18                  performance metrics by which the overall effec-  
19                  tiveness of the Initiative may be evaluated on a  
20                  periodic basis, including evaluation of mecha-  
21                  nisms for the effective transition of research to  
22                  operations and the application of research results  
23                  for reducing hurricane losses and related public  
24                  benefits; and

1           (C) identifies opportunities to leverage the  
2 results of the research carried out under section  
3 4 with other Federal and non-Federal hurricane  
4 research, coordination, and loss-reduction initia-  
5 tives, such as—

6           (i) the National Windstorm Impact  
7 Reduction Program established by section  
8 204(a) of the National Windstorm Impact  
9 Reduction Act of 2004 (15 U.S.C. 15703);

10          (ii) the National Flood Insurance Pro-  
11 gram established under chapter 1 of the Na-  
12 tional Flood Insurance Act of 1968 (42  
13 U.S.C. 4011 et seq.);

14          (iii) the initiatives of the Robert T.  
15 Stafford Disaster Relief and Emergency As-  
16 sistance Act (42 U.S.C. 5121 et seq.);

17          (iv) wind hazard mitigation initiatives  
18 carried out by a State;

19          (v) the Science Advisory Board, Social  
20 Science Working Group, and Hurricane  
21 Forecast Improvement Project of the Na-  
22 tional Oceanic and Atmospheric Adminis-  
23 tration; and

24          (vi) the Working Group for Tropical  
25 Cyclone Research of the Office of the Federal

1                    *Coordinator for Meteorological Services and*  
2                    *Supporting Research.*

3                    (2) *REVIEW.*—*Not later than 540 days after the*  
4                    *date of the enactment of this Act, the Under Secretary*  
5                    *shall make the implementation plan required by*  
6                    *paragraph (1) available for review by the following:*

7                    (A) *The Director of the National Science*  
8                    *Foundation.*

9                    (B) *The Secretary of Homeland Security.*

10                    (C) *The Director of the National Institute of*  
11                    *Standards and Technology.*

12                    (D) *The Commanding General of the U.S.*  
13                    *Army Corps of Engineers.*

14                    (E) *The Commander of the Naval Meteor-*  
15                    *ology and Oceanography Command.*

16                    (F) *The Associate Administrator for Science*  
17                    *Mission Directorate of the National Aeronautics*  
18                    *and Space Administration.*

19                    (G) *The Director of the U.S. Geological*  
20                    *Survey.*

21                    (H) *The Director of the Office of Science*  
22                    *and Technology Policy.*

23                    (I) *The Director of the National Economic*  
24                    *Council.*

1           (3) *REVISIONS.*—*The Under Secretary shall re-*  
2 *vis the implementation plan required by paragraph*  
3 *(1) not less frequently than once every 5 years.*

4 *(c) RESEARCH.*—

5           (1) *ESTABLISHMENT OF RESEARCH OBJEC-*  
6 *TIVES.*—*The Under Secretary shall, in consultation*  
7 *with the Director of the National Science Foundation,*  
8 *establish objectives for research carried out pursuant*  
9 *to section 4 that are—*

10           (A) *consistent with the purposes described*  
11 *in subsection (a)(2); and*

12           (B) *based on the findings of the expert as-*  
13 *sessments and strategies published in the fol-*  
14 *lowing:*

15           (i) *The June 2005 publication entitled,*  
16 *“Grand Challenges for Disaster Reduction”,*  
17 *and the related 2008 implementation plans*  
18 *for hurricane and coastal inundation haz-*  
19 *ards of the Subcommittee on Disaster Re-*  
20 *duction of the Committee on Environment*  
21 *and Natural Resources of the National*  
22 *Science and Technology Council.*

23           (ii) *The January 2007 report by the*  
24 *National Science Board entitled, “Hurri-*

1                   *cane Warning: The Critical Need for a Na-*  
2                   *tional Hurricane Initiative”.*

3                   *(iii) The February 2007 report by the*  
4                   *Office of the Federal Coordinator for Mete-*  
5                   *orological Services and Supporting Re-*  
6                   *search entitled, “Interagency Strategic Re-*  
7                   *search Plan for Tropical Cyclones: The Way*  
8                   *Ahead”.*

9                   *(iv) Reports from the Hurricane Inten-*  
10                  *sity Working Group of the National Science*  
11                  *Advisory Board of the National Oceanic*  
12                  *and Atmospheric Administration.*

13                  (2) *AREAS OF CONCENTRATION.*—*The objectives*  
14                  *required by paragraph (1) shall provide for 3 areas*  
15                  *of concentration as follows:*

16                  (A) *Fundamental hurricane research, which*  
17                  *may include research to support continued devel-*  
18                  *opment and maintenance of community weather*  
19                  *research and forecast models, including advanced*  
20                  *methods of observing storm structure and assimi-*  
21                  *lating observations into the models, in which the*  
22                  *agency or institution hosting the models ensures*  
23                  *broad access and use of the model by the civilian*  
24                  *research community.*

1                   (B) *Technology assessment and develop-*  
2                   *ment.*

3                   (C) *Research on integration, transition, and*  
4                   *application of research results.*

5           (d) *NATIONAL WORKSHOPS AND CONFERENCES.—The*  
6 *Under Secretary may, in coordination with the Director*  
7 *of the National Science Foundation, carry out a series of*  
8 *national workshops and conferences that assemble a broad*  
9 *collection of scientific disciplines—*

10           (1) *to address hurricane-related research ques-*  
11           *tions; and*

12           (2) *to encourage researchers to work collabo-*  
13           *ratively to carry out the purposes described in sub-*  
14           *section (a)(2).*

15           (e) *PUBLIC INTERNET WEB SITE.—The Under Sec-*  
16 *retary shall facilitate the establishment of a public Internet*  
17 *Web site for the Initiative—*

18           (1) *to foster collaboration and interactive dia-*  
19           *logues among the Under Secretary, the Director of the*  
20           *National Science Foundation, and the public;*

21           (2) *to enhance public access to Initiative docu-*  
22           *ments and products, including—*

23                   (A) *reports and publications of the Initia-*  
24                   *tive;*



1           (B) the most recent 5-year implementation  
2           plan developed under subsection (b); and

3           (C) each annual cross-cut budget and report  
4           submitted to Congress under subsection (f); and

5           (3) that includes a publicly accessible clearing-  
6           house of Federal research and development centers en-  
7           gaged in research and development efforts that are  
8           complementary to the Initiative.

9           (f) *BIENNIAL CROSS-CUT BUDGET AND REPORT.*—

10           (1) *REQUIREMENT FOR BIENNIAL CROSS-CUT*  
11           *BUDGET AND REPORT.*—Beginning with the first fis-  
12           cal year beginning after the date the Under Secretary  
13           completes the implementation plan required by sub-  
14           section (b), the Director of the Office of Science and  
15           Technology Policy shall, in conjunction with the  
16           Under Secretary, the Director of the National Science  
17           Foundation, and the Director of the Office of Manage-  
18           ment and Budget, submit to Congress once every 2  
19           years, together with documents submitted to Congress  
20           in support of the budget of the President for the fiscal  
21           year beginning in such year (as submitted pursuant  
22           to section 1105 of title 31, United States Code)—

23           (A) a coordinated biennial report for the  
24           Initiative for the last 2 fiscal years ending before  
25           the date on which the report is submitted; and

1           (B) a cross-cut budget for the Initiative for  
2           the first fiscal year beginning after the date on  
3           which the report is submitted.

4           (2) CONTENTS.—The report required by para-  
5           graph (1)(A) shall—

6           (A) document the grants and contracts  
7           awarded to eligible entities under section 4;

8           (B) for each eligible entity that receives a  
9           grant or contract under section 4, identify what  
10          major activities were undertaken with such  
11          funds, grants, and contracts; and

12          (C) for each research activity or group of  
13          activities in an area of concentration described  
14          in subsection (c)(2), as appropriate, identify any  
15          accomplishments, which may include full or par-  
16          tial achievement of any strategic goals, bench-  
17          marks, milestones, or systematic criteria and  
18          performance metrics established for the imple-  
19          mentation plan under subsection (b)(1)(B).

20 **SEC. 4. NATIONAL HURRICANE RESEARCH.**

21          (a) NATIONAL SCIENCE FOUNDATION COMPETITIVE  
22          GRANT RESEARCH PROGRAM.—

23                 (1) IN GENERAL.—The Director of the National  
24                 Science Foundation shall, in coordination with the  
25                 Under Secretary, establish a program to award

1        *grants to eligible entities to carry out research that is*  
2        *consistent with the research objectives established*  
3        *under section 3(c)(1).*

4                (2) *SELECTION.—The National Science Founda-*  
5        *tion shall select grant recipients under this section*  
6        *through its merit review process.*

7        (b) *NATIONAL OCEANIC AND ATMOSPHERIC ADMINIS-*  
8        *TRATION RESEARCH PROGRAM.—*

9                (1) *IN GENERAL.—The Under Secretary shall, in*  
10        *coordination with the Director of the National*  
11        *Science Foundation, carry out a program of research*  
12        *that is consistent with the research objectives estab-*  
13        *lished under section 3(c)(1).*

14                (2) *RESEARCH ACTIVITIES.—Research carried*  
15        *out under paragraph (1) may be carried out*  
16        *through—*

17                        (A) *intramural research;*

18                        (B) *awarding grants to eligible entities to*  
19        *carry out research;*

20                        (C) *contracting with eligible entities to*  
21        *carry out research; or*

22                        (D) *entering into cooperative agreements to*  
23        *carry out research.*

1           (3) *DEMONSTRATION PROJECTS AUTHORIZED.*—  
2           *Research carried out under this subsection may in-*  
3           *clude demonstration projects.*

4           (c) *COLLABORATION.*—*To the maximum extent prac-*  
5           *ticable, each entity carrying out research under this section*  
6           *shall collaborate with existing Federal and federally funded*  
7           *research centers operating in related fields, for-profit orga-*  
8           *nizations, and international, regional, State, local, and*  
9           *tribal governments—*

10           (1) *to gather and share experiential information;*  
11           *and*

12           (2) *to advance scientific and engineering knowl-*  
13           *edge, technology transfer, and technology commer-*  
14           *cialization in the course of conduct of hurricane-re-*  
15           *lated research and its application to mitigating the*  
16           *impacts of hurricanes and other tropical storms on*  
17           *society.*



Calendar No. 545

112<sup>TH</sup> CONGRESS  
2<sup>D</sup> SESSION

**S. 692**

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**A BILL**

To improve hurricane preparedness by establishing the National Hurricane Research Initiative, and for other purposes.

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NOVEMBER 14, 2012

Reported with an amendment