

112TH CONGRESS
1ST SESSION

H. R. 2749

To ensure the development and responsible stewardship of nanotechnology.

IN THE HOUSE OF REPRESENTATIVES

AUGUST 1, 2011

Mr. HONDA introduced the following bill; which was referred to the Committee on Science, Space, and Technology, and in addition to the Committees on Energy and Commerce, Ways and Means, and Homeland Security, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

A BILL

To ensure the development and responsible stewardship of nanotechnology.

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 “Nanotechnology Ad-
5 vancement and New Opportunities Act”.

1 **TITLE I—INVESTMENT IN**
2 **NANOTECHNOLOGY INDUSTRY**

3 **SEC. 101. NANOMANUFACTURING INVESTMENT PARTNER-**
4 **SHIP.**

5 (a) ESTABLISHMENT.—If \$100,000,000 is made
6 available for such purposes from the private sector within
7 2 years after the date of enactment of this Act, the Sec-
8 retary of Commerce shall establish the Nanomanufac-
9 turing Investment Partnership, in partnership with such
10 private sector investors.

11 (b) PURPOSE.—The Nanomanufacturing Investment
12 Partnership shall provide funding for precommercial nano-
13 manufacturing research and development projects, but not
14 for basic research projects, through funding mechanisms
15 described in subsection (c) in a manner so as to advance
16 the commercialization of nanomanufacturing technologies
17 to address critical scientific and engineering needs of na-
18 tional importance, especially with respect to projects that
19 would not be adequately funded or pursued by the private
20 sector or pursuant to the 21st Century Nanotechnology
21 Research and Development Act or other law, and to in-
22 crease the commercial application of federally supported
23 research results. To the extent that a sufficient number
24 of viable applications have been submitted, at least 85 per-
25 cent of the funding provided by the Nanomanufacturing

1 Investment Partnership under this section shall be pro-
2 vided to startup companies.

3 (c) FUNDING MECHANISMS.—The Nanomanufac-
4 turing Investment Partnership may provide funding
5 through direct investment in nanomanufacturing firms,
6 contracts, loans or loan guarantees, unsecured subordi-
7 nated debt, or any other mechanism designed to advance
8 nanomanufacturing technologies.

9 (d) RETURN ON INVESTMENT.—

10 (1) REQUIREMENT.—Each transaction through
11 which the Nanomanufacturing Investment Partner-
12 ship provides funding under subsection (c) shall pro-
13 vide for the return to the Nanomanufacturing In-
14 vestment Partnership of fair and reasonable
15 amounts resulting from the commercialization of
16 technologies developed with the funding provided by
17 the Nanomanufacturing Investment Partnership.

18 (2) DISTRIBUTION.—Amounts received by the
19 Nanomanufacturing Investment Partnership pursu-
20 ant to paragraph (1) shall be distributed as follows:

21 (A) Except as provided in subparagraph
22 (B), amounts shall be distributed to all inves-
23 tors in the Nanomanufacturing Investment
24 Partnership, including the Federal Government,
25 in proportion to their monetary contribution to

1 the Nanomanufacturing Investment Partner-
2 ship.

3 (B) After the total monetary investment of
4 the Federal Government has been recovered
5 under subparagraph (A), the Federal share of
6 distributions under this paragraph shall be re-
7 duced to 7 percent of the proportional distribu-
8 tion under subparagraph (A), and the remain-
9 ing amounts shall be distributed proportionately
10 to all non-Federal investors.

11 (e) COST SHARING.—Each applicant for funding as-
12 sistance from the Nanomanufacturing Investment Part-
13 nership for a project shall be required to provide a portion
14 of the cost of the project.

15 (f) ADMINISTRATION.—The Secretary of Commerce,
16 based on guidance from the Advisory Board established
17 under subsection (i), shall make awards of funding under
18 this section. The Advisory Board may obtain additional
19 peer review in preparing guidance for the Secretary under
20 this subsection.

21 (g) PROGRESS REPORTS.—The Nanomanufacturing
22 Investment Partnership shall require periodic project
23 progress reports from recipients of funding under this sec-
24 tion.

25 (h) ADVISORY BOARD.—

1 (1) ESTABLISHMENT.—The Secretary of Com-
2 merce shall establish an Advisory Board to assist the
3 Secretary in carrying out this section, including by
4 establishing requirements for progress reports under
5 subsection (g). The Advisory Board shall consist
6 of—

7 (A) representatives of each investor pro-
8 viding more than \$10,000,000 to the Nanomanu-
9 facturing Investment Partnership, whose votes
10 shall—

11 (i) be distributed proportional to the
12 size of their investment in the Nanomanu-
13 facturing Investment Partnership; and

14 (ii) collectively amount to 40 percent
15 of the votes on the Advisory Board; and

16 (B) independent experts on nanomanu-
17 facturing and finance appointed by the Presi-
18 dent from among representatives of govern-
19 ment, industry, and academia, whose votes shall
20 collectively amount to 60 percent of the votes
21 on the Advisory Board.

22 (2) TERMS.—Members of the Advisory Board
23 appointed under paragraph (1)(A) shall be ap-
24 pointed for 3-year terms, except that the President
25 shall make some initial appointments for terms of 1

1 year and some for terms of 2 years, in order to en-
2 sure continuity of membership on the Advisory
3 Board.

4 (i) AUTHORIZATION OF APPROPRIATIONS.—There
5 are authorized to be appropriated to the Secretary of Com-
6 merce for the Nanomanufacturing Investment Partnership
7 \$300,000,000, to remain available until expended.

8 **SEC. 102. TAX CREDIT FOR INVESTMENT IN NANOTECHNOL-**
9 **OGY FIRMS.**

10 (a) IN GENERAL.—Part IV of subchapter A of chap-
11 ter 1 of the Internal Revenue Code of 1986 (relating to
12 credits against tax) is amended by adding at the end the
13 following new subpart:

14 **“Subpart J—Nanotechnology Development Credit**
15 **“SEC. 54I. CREDIT FOR PURCHASE OF NANOTECHNOLOGY**
16 **DEVELOPER STOCK.**

17 “(a) ALLOWANCE OF CREDIT.—

18 “(1) IN GENERAL.—There shall be allowed as a
19 credit against the tax imposed by this chapter for
20 the taxable year an amount equal to the applicable
21 percentage of the aggregate amount paid by the tax-
22 payer for the purchase of qualified nanotechnology
23 developer stock.

24 “(2) APPLICABLE PERCENTAGE.—For purposes
25 of subsection (a), the applicable percentage is—

1 “(A) 5.25 percent for the taxable year in
2 which the qualified nanotechnology developer
3 stock is purchased,

4 “(B) 3.75 percent for the taxable year fol-
5 lowing the year in which such stock is pur-
6 chased,

7 “(C) 3 percent for the second taxable year
8 following the year in which such stock is pur-
9 chased,

10 “(D) 1.5 percent for the third taxable year
11 following the year in which such stock is pur-
12 chased,

13 “(E) 1.5 percent for fourth taxable year
14 following the year in which such stock is pur-
15 chased, and

16 “(F) 0 percent for any taxable year after
17 the fourth taxable year following the year in
18 which such stock is purchased.

19 “(b) LIMITATIONS.—

20 “(1) AMOUNT OF INVESTMENT ELIGIBLE.—No
21 credit shall be allowed under subsection (a) with re-
22 spect to amounts paid in any taxable year for the
23 purchase of qualified nanotechnology developer stock
24 which is in excess of \$10,000,000.

1 “(2) APPLICATION WITH OTHER CREDITS.—

2 The credit allowed under subsection (a) for any tax-
3 able year shall not exceed the excess of—

4 “(A) the regular tax for the taxable year
5 reduced by the sum of the credits allowable
6 under this part (other than subpart C thereof),
7 over

8 “(B) the tentative minimum tax for the
9 taxable year.

10 “(c) QUALIFIED NANOTECHNOLOGY DEVELOPER

11 STOCK.—For purposes of this section—

12 “(1) IN GENERAL.—The term ‘qualified nano-
13 technology developer stock’ means any common
14 stock in a C corporation or any membership unit in
15 a State-registered limited liability company if—

16 “(A) as of the date of issuance of such
17 stock or membership unit, such corporation or
18 company is a qualified nanotechnology devel-
19 oper,

20 “(B) such stock is acquired by the tax-
21 payer at its original issue (directly or through
22 an underwriter) in exchange for money or other
23 property (not including stock), and

24 “(C) the proceeds of such issue are used
25 by such issuer during the 5-year period begin-

1 ning on the date of issuance for the develop-
2 ment, production, or sale of products using
3 nanotechnology.

4 “(2) QUALIFIED NANOTECHNOLOGY DEVELOP-
5 OPER.—The term ‘qualified nanotechnology devel-
6 oper’ means any entity—

7 “(A) which is a C corporation or limited li-
8 ability company organized under the laws of
9 any State or of the United States,

10 “(B) which is a small business concern (as
11 defined in section 3(a) of the Small Business
12 Act), and

13 “(C) with respect to which a certification
14 under subsection (d) is in effect.

15 “(3) NANOTECHNOLOGY.—The term ‘nanotech-
16 nology’ means the science of understanding and ma-
17 nipulating matter on an atomic or molecular scale,
18 generally to create structures, and usually at a size
19 smaller than 100 nanometers.

20 “(d) CERTIFICATION.—

21 “(1) IN GENERAL.—The Secretary, in consulta-
22 tion with the National Nanotechnology Coordination
23 Office, shall certify an entity under this subsection
24 if such entity demonstrates by the submission of
25 such information as required by the Secretary that

1 not less than 51 percent of its activities relate to the
2 development, production, and sale of products using
3 nanotechnology.

4 “(2) REVOCATION.—The Secretary shall revoke
5 the certification of any entity which is certified
6 under paragraph (1) if the Secretary determines
7 that—

8 “(A) the proceeds from any qualified nano-
9 technology developer stock issued by such entity
10 are used during the 5-year period following
11 such issue for a purpose other than the develop-
12 ment, production, or sale of products using
13 nanotechnology, or

14 “(B) such entity no longer meets the re-
15 quirements of paragraph (1).

16 “(3) SUBMISSION OF INFORMATION.—The Sec-
17 retary may require any entity certified under para-
18 graph (1) to provide such information as the Sec-
19 retary may require in order ensure compliance with
20 the purposes of this section.

21 “(e) CARRYOVER OF UNUSED CREDIT.—

22 “(1) IN GENERAL.—If the credit amount allow-
23 able under subsection (a) for a taxable year exceeds
24 the amount of the limitation under subsection (h)
25 for such taxable year, such excess shall be allowed

1 as a credit carryforward for each of the 20 taxable
2 years following the unused credit year.

3 “(2) RULES.—Rules similar to the rules of sec-
4 tion 39 shall apply with respect to the credit
5 carryforward under paragraph (1).

6 “(f) RECAPTURE OF CREDIT.—If—

7 “(1) the taxpayer fails to hold qualified nano-
8 technology developer stock for the 7-year period be-
9 ginning on the date such stock was purchased by the
10 taxpayer, or

11 “(2) during such 7-year period, the issuer of
12 such stock ceases to be a qualified nanotechnology
13 developer,

14 then notwithstanding any other provision of this subtitle,
15 the tax imposed by this chapter on the taxpayer for the
16 taxable year beginning in the calendar year in which such
17 cessation occurred shall be increased by the aggregate
18 amount of credit allowed under subsection (a) to the tax-
19 payer with respect to such stock.

20 “(g) SPECIAL RULE.—For purposes of this section,
21 rules similar to the rules of section 1202(c)(3) shall apply.

22 “(h) BASIS ADJUSTMENTS.—For purposes of this
23 subtitle, if a credit is allowed under this section for the
24 purchase of any stock—

1 “(1) the increase in the basis of such stock
2 which would (but for this subsection) result from
3 such purchase shall be reduced by the amount of the
4 credit so allowed, and

5 “(2) the basis of such stock shall be increased
6 by the amount of any increase in tax by reason of
7 subsection (f).”.

8 (b) CONFORMING AMENDMENT.—Subsection (a) of
9 section 1016 of such Code is amended by striking “and”
10 at the end of paragraph (36), by striking the period at
11 the end of paragraph (37) and inserting “; and”, and by
12 adding at the end the following new paragraph:

13 “(38) to the extent provided in section 54I(h),
14 in the case of amounts with respect to which a credit
15 has been allowed under section 54I or a recapture
16 imposed under section 54I(f).”.

17 (c) CLERICAL AMENDMENT.—The table of subparts
18 for part IV is amended by adding at the end the following
19 new item:

 “SUBPART J—NANOTECHNOLOGY DEVELOPMENT CREDIT”.

20 (d) EFFECTIVE DATE.—The amendments made by
21 this section shall apply to amounts paid after December
22 31, 2010.

23 **SEC. 103. NANOTECHNOLOGY ASSISTANCE.**

24 (a) DEFINITIONS.—In this section:

1 (1) COMMERCIALIZATION.—The term “commer-
2 cialization” means the process of converting nano-
3 technology research into products and processes that
4 are used in the marketplace.

5 (2) DEGREE-GRANTING INSTITUTION.—The
6 term “degree-granting institution” means an institu-
7 tion of higher education, as defined in section 101
8 of the Higher Education Act of 1965 (20 U.S.C.
9 1001), that awards an associate or baccalaureate de-
10 gree.

11 (3) INCUBATOR.—The term “incubator” means
12 an entity affiliated with or housed in a degree-grant-
13 ing institution that provides space and coordinated
14 and specialized services to entrepreneurial businesses
15 that work in the field of nanotechnology commer-
16 cialization and that meets selected criteria during
17 the businesses’ startup phase, including providing
18 services such as shared office space and services, ac-
19 cess to equipment, access to telecommunications and
20 technology services, flexible leases, specialized man-
21 agement assistance, access to financing, and other
22 coordinated business or technical support services.

23 (4) NANOTECHNOLOGY.—The term “nanotech-
24 nology” means the science of understanding and ma-
25 nipulating matter on an atomic or molecular scale,

1 generally to create structures, and usually at a size
2 smaller than 100 nanometers.

3 (5) SECRETARY.—The term “Secretary” means
4 the Secretary of Commerce.

5 (b) GRANTS AUTHORIZED.—

6 (1) IN GENERAL.—The Secretary is authorized
7 to establish within the Technology Administration of
8 the Department of Commerce a grant program to
9 support the establishment and development of incu-
10 bators.

11 (2) ALLOCATION OF FUNDS.—From the
12 amount appropriated pursuant to the authorization
13 of appropriations in subsection (e) for a fiscal year,
14 the Secretary—

15 (A) shall use 80 percent of such amount
16 to—

17 (i) make awards, on a competitive
18 basis, in amounts of up to \$2,500,000, to
19 help acquire or renovate space for incuba-
20 tors; and

21 (ii) make awards, on a competitive
22 basis, in amounts of \$50,000 to \$150,000,
23 for—

24 (I) developing curricula related to
25 nanotechnology;

1 (II) providing services for com-
2 mercialization, including preparing
3 providing services to appropriate busi-
4 nesses including corporate charters,
5 partnership agreements, and basic
6 contracts, assistance with patents,
7 trademarks, and copyrights, and tech-
8 nology acquisition services; or

9 (III) providing programming for
10 entrepreneurs working in nanotechno-
11 logy housed in an incubator;

12 (B) shall reserve 10 percent of the amount
13 to make awards, on a competitive basis, in
14 amounts of \$50,000 to \$150,000, for feasibility
15 studies for determining the need for or siting of
16 incubators; and

17 (C) shall reserve 10 percent for research
18 regarding best practices for incubator pro-
19 grams, including the development of a
20 benchmarking system based on uniform meas-
21 ures, and for dissemination of information re-
22 garding such practices.

23 (3) CONTRACTS.—The Secretary is authorized
24 to contract with organizations with expertise in incu-

1 bation practices for the purposes of carrying out
2 paragraph (2)(C).

3 (4) USES OF FUNDS.—Funds awarded under
4 paragraph (2)(A)(ii) may be used for—

5 (A) curriculum, training, or technical as-
6 sistance related to nanotechnology developed by
7 academic faculty with participation from entre-
8 preneurship experts;

9 (B) programming that contributes to a co-
10 ordinated set of business assistance tools, such
11 as developing management teams, providing
12 workforce development, forming strategic alli-
13 ances, developing capital formation networks,
14 and developing customized plans for commer-
15 cialization; and

16 (C) hiring staff to coordinate the activities
17 described in subparagraph (A) or (B) or for
18 curriculum development.

19 (5) RECIPIENTS.—The Secretary shall make an
20 award—

21 (A) described in paragraph (2)(A) to a
22 nonprofit entity that has a strong affiliation
23 with a degree-granting institution and manages
24 or provides technical assistance to the degree-
25 granting institution’s affiliated incubator, or if

1 no nonprofit entity manages or provides tech-
2 nical assistance to the incubator, to the degree-
3 granting institution managing the incubator;
4 and

5 (B) described in paragraph (2)(B) to a de-
6 gree-granting institution.

7 (6) APPLICATIONS.—Each entity desiring as-
8 sistance under this section shall submit an applica-
9 tion to the Secretary at such time, in such manner,
10 and accompanied by such information as the Sec-
11 retary may require.

12 (7) SELECTION.—

13 (A) PRIORITY.—The Secretary shall give
14 priority to funding applications under this sub-
15 section for activities that—

16 (i) will be carried out at a facility that
17 is included in the Centers and Networks of
18 Excellence of the research and development
19 program known as the National Nanotech-
20 nology Initiative;

21 (ii) provide strong educational oppor-
22 tunities to students in fields related to
23 nanotechnology and commercialization; and

24 (iii) require significant collaboration
25 between businesses and academia.

1 (B) CONSIDERATION.—The Secretary may
2 give consideration to funding applications under
3 this subsection that support—

4 (i) the building of new incubators;

5 (ii) incubators that work with faculty
6 entrepreneurs or university-based research;

7 (iii) incubators that are located in
8 areas with an established venture capital
9 industry and other industry support, in-
10 cluding leadership and legal support, for
11 commercialization; or

12 (iv) incubators that have secured ad-
13 ditional private funding.

14 (c) NANOTECHNOLOGY STARTUP ADVISORY COUN-
15 CIL.—

16 (1) ESTABLISHMENT.—The Secretary shall es-
17 tablish a Nanotechnology Startup Advisory Council
18 composed of industry leaders, business and mar-
19 keting professionals, venture capitalists, attorneys,
20 and nanotechnology researchers.

21 (2) PURPOSE.—The purpose of the Nanotech-
22 nology Startup Advisory Council is to ensure that
23 emerging nanotechnology companies create a sound
24 foundation for new business.

1 (d) REPORT.—Not later than September 30 of the
2 third fiscal year during which assistance is provided under
3 this section, the Secretary shall prepare and submit to
4 Congress a report that—

5 (1) describes the most effective or innovative
6 additions to curricula related to nanotechnology that
7 were developed with such assistance;

8 (2) contains a comparison of the success of
9 nanotechnology companies developed in incubators
10 that received such assistance with the success of
11 other nanotechnology companies;

12 (3) describes any factors leading to success of
13 companies that were developed in incubators;

14 (4) recommends the best role for degree-grant-
15 ing institutions in commercialization; and

16 (5) contains a comparison of academic-affiliated
17 incubators of specific missions and ages that re-
18 ceived assistance under this section with other incu-
19 bators with similar missions and ages.

20 (e) AUTHORIZATION OF APPROPRIATIONS.—There
21 are authorized to be appropriated to carry out this section
22 \$25,000,000 for each of the fiscal years 2012, 2013, and
23 2014.

1 **TITLE II—RESEARCH AND**
2 **DEVELOPMENT DIRECTIONS**

3 **SEC. 201. NANOSCALE SCIENCE AND ENGINEERING CEN-**
4 **TER.**

5 Section 9 of the 21st Century Nanotechnology Re-
6 search and Development Act (15 U.S.C. 7508) is amend-
7 ed—

8 (1) by redesignating subsection (c) as sub-
9 section (d); and

10 (2) by inserting after subsection (b) the fol-
11 lowing new subsection:

12 “(c) NANOSCALE SCIENCE AND ENGINEERING CEN-
13 TER.—

14 “(1) ESTABLISHMENT.—The National Science
15 Foundation shall provide for the establishment, on a
16 merit reviewed and competitive basis, of a center for
17 the development of computer aided design tools for
18 nanotechnology applications.

19 “(2) AUTHORIZATION OF APPROPRIATIONS.—
20 There are authorized to be appropriated to the Na-
21 tional Science Foundation for carrying out this sub-
22 section \$10,000,000.”.

23 **SEC. 202. FEDERAL PROGRAMS.**

24 The 21st Century Nanotechnology Research and De-
25 velopment Act (15 U.S.C. 7501 et seq.) is amended—

1 (1) by redesignating sections 9 and 10 as sec-
2 tions 12 and 13, respectively;

3 (2) in section 8, by adding at the end the fol-
4 lowing new subsection:

5 “(c) RESEARCH PROGRAM.—

6 “(1) ESTABLISHMENT.—The Secretary of En-
7 ergy shall provide for the establishment, on a merit
8 reviewed and competitive basis, of a grant program
9 for nanotechnology research to address the need for
10 clean, cheap, renewable energy.

11 “(2) AUTHORIZATION OF APPROPRIATIONS.—

12 There are authorized to be appropriated to the Sec-
13 retary of Energy for carrying out this subsection
14 \$30,000,000 for each fiscal year.”; and

15 (3) by inserting after section 8 the following
16 new sections:

17 **“SEC. 9. ENVIRONMENTAL PROTECTION AGENCY PRO-**
18 **GRAMS.**

19 “(a) ESTABLISHMENT.—The Administrator of the
20 Environmental Protection Agency shall provide for the es-
21 tablishment, on a merit reviewed and competitive basis,
22 of a grant program for nanotechnology research to address
23 technologies for the remediation of pollution and other en-
24 vironmental protection technologies.

1 “(b) AUTHORIZATION OF APPROPRIATIONS.—There
2 are authorized to be appropriated to the Administrator of
3 the Environmental Protection Agency for carrying out this
4 section \$30,000,000 for each fiscal year.

5 **“SEC. 10. DEPARTMENT OF HOMELAND SECURITY PRO-**
6 **GRAMS.**

7 “(a) ESTABLISHMENT.—The Secretary of Homeland
8 Security shall provide for the establishment, on a merit
9 reviewed and competitive basis, of a grant program for
10 nanotechnology research to address the need for sensors
11 and other materials related to homeland security needs.

12 “(b) AUTHORIZATION OF APPROPRIATIONS.—There
13 are authorized to be appropriated to the Secretary of
14 Homeland Security for carrying out this section
15 \$30,000,000 for each fiscal year.

16 **“SEC. 11. DEPARTMENT OF HEALTH AND HUMAN SERVICES**
17 **PROGRAMS.**

18 “(a) ESTABLISHMENT.—The Secretary of Health
19 and Human Services shall provide for the establishment,
20 on a merit reviewed and competitive basis, of a grant pro-
21 gram for nanotechnology research to address the health
22 related applications of nanotechnology.

23 “(b) AUTHORIZATION OF APPROPRIATIONS.—There
24 are authorized to be appropriated to the Secretary of

1 Health and Human Services for carrying out this section
2 \$30,000,000 for each fiscal year.”.

3 **TITLE III—ENVIRONMENTAL**
4 **NANOTECHNOLOGY APPLICA-**
5 **TIONS**

6 **SEC. 301. NANOTECHNOLOGY RESEARCH STRATEGY.**

7 Not later than 1 year after the date of enactment
8 of this Act, the Director of the National Nanotechnology
9 Coordination Office shall, after consultation with appro-
10 priate Federal agencies and industry, transmit to the Con-
11 gress a report containing a nanotechnology research strat-
12 egy that establishes priorities for the Federal Government
13 and industry that will ensure the development and respon-
14 sible stewardship of nanotechnology. The report shall in-
15 clude recommendations regarding the funding levels the
16 Director anticipates the agencies charged with imple-
17 menting this research strategy will require.

18 **TITLE IV—EDUCATION**

19 **SEC. 401. CREDIT FOR NANOTECHNOLOGY EDUCATION AND**
20 **TRAINING PROGRAM EXPENSES.**

21 (a) IN GENERAL.—Subpart B of part IV of sub-
22 chapter A of chapter 1 of the Internal Revenue Code of
23 1986 is amended by adding at the end the following:

1 **“SEC. 30E. NANOTECHNOLOGY EDUCATION AND TRAINING**
2 **PROGRAM EXPENSES.**

3 “(a) ALLOWANCE OF CREDIT.—

4 “(1) IN GENERAL.—There shall be allowed as a
5 credit against the tax imposed by this chapter for
6 the taxable year an amount equal to 50 percent of
7 nanotechnology education and training program ex-
8 penses paid or incurred by the taxpayer for the ben-
9 efit of—

10 “(A) in the case of a taxpayer engaged in
11 a trade or business, an employee of the tax-
12 payer, or

13 “(B) in the case of a taxpayer who is an
14 individual not so engaged, such individual.

15 “(2) COORDINATION OF CREDITS.—Credit shall
16 be allowable to the employer with respect to an em-
17 ployee only to the extent that the employee assigns
18 some or all of the limitation applicable to such em-
19 ployee under subsection (b) to such employer.

20 “(b) LIMITATIONS.—

21 “(1) IN GENERAL.—The amount of expenses
22 with respect to any individual which may be taken
23 into account under subsection (a) for the taxable
24 year shall not exceed \$4,000.

25 “(2) INCREASE IN CREDIT AMOUNT FOR PAR-
26 TICIPATION IN CERTAIN PROGRAMS AND FOR CER-

1 TAIN INDIVIDUALS.—Paragraph (1) shall be applied
2 by substituting ‘\$5,000’ for ‘\$4,000’ in the case of
3 expenses—

4 “(A) with respect to a program operated—

5 “(i) in an empowerment zone or en-
6 terprise community designated under part
7 I of subchapter U or a renewal community
8 designated under part I of subchapter X,

9 “(ii) in a school district in which at
10 least 50 percent of the students attending
11 schools in such district are eligible for free
12 or reduced-cost lunches under the school
13 lunch program established under the Rich-
14 ard B. Russell National School Lunch Act,

15 “(iii) in an area designated as a dis-
16 aster area by the Secretary of Agriculture
17 under section 321 of the Consolidated
18 Farm and Rural Development Act or by
19 the President under the Robert T. Stafford
20 Disaster Relief and Emergency Assistance
21 Act in the taxable year or the 4 preceding
22 taxable years,

23 “(iv) in a rural enterprise community
24 designated under section 766 of the Agri-
25 culture, Rural Development, Food and

1 Drug Administration, and Related Agen-
2 cies Appropriations Act, 1999 (112 Stat.
3 2681–37),

4 “(v) in an area designated by the Sec-
5 retary of Agriculture as a Rural Economic
6 Area Partnership Zone,

7 “(vi) in an area over which an Indian
8 tribal government (as defined in section
9 7701(a)(40)) has jurisdiction, or

10 “(vii) by an employer who has 200 or
11 fewer employees for each business day in
12 each of 20 or more calendar weeks in the
13 current or preceding calendar year, or

14 “(B) in the case of an individual with a
15 disability.

16 “(c) NANOTECHNOLOGY EDUCATION AND TRAINING
17 PROGRAM EXPENSES.—For purposes of this section—

18 “(1) IN GENERAL.—The term ‘nanotechnology
19 education and training program expenses’ means ex-
20 penses paid or incurred by reason of the partici-
21 pation of the taxpayer (or any employee of the tax-
22 payer) in any nanotechnology education and training
23 program. Such expenses shall include expenses paid
24 in connection with—

25 “(A) course work,

1 “(B) certification testing,

2 “(C) programs carried out under the Act
3 of August 16, 1937 (50 Stat. 664, chapter 663;
4 29 U.S.C. 50 et seq.) which are registered by
5 the Department of Labor, and

6 “(D) other expenses that are essential to
7 assessing skill acquisition.

8 “(2) NANOTECHNOLOGY EDUCATION AND
9 TRAINING PROGRAM.—The term ‘nanotechnology
10 education and training program’ means a training
11 program in nanotechnology workplace disciplines or
12 other skill sets which is provided in the United
13 States by an accredited college, university, private
14 career school, postsecondary educational institution,
15 a commercial nanotechnology provider, or an em-
16 ployer-owned nanotechnology training organization.

17 “(3) COMMERCIAL NANOTECHNOLOGY TRAIN-
18 ING PROVIDER.—The term ‘commercial nanotechnol-
19 ogy training provider’ means a private sector organi-
20 zation providing an nanotechnology education and
21 training program.

22 “(4) EMPLOYER-OWNED NANOTECHNOLOGY
23 TRAINING ORGANIZATION.—The term ‘employer-
24 owned nanotechnology training organization’ means
25 a private sector organization that provides nanotech-

1 nology training to its employees using internal train-
2 ing development and delivery personnel. The training
3 programs must use industry-recognized training dis-
4 ciplines and evaluation methods, comparable to insti-
5 tutional and commercial training providers.

6 “(d) DENIAL OF DOUBLE BENEFIT.—

7 “(1) DISALLOWANCE OF OTHER CREDITS AND
8 DEDUCTIONS.—No deduction or credit shall be al-
9 lowed under any other provision of this chapter for
10 expenses taken into account in determining the cred-
11 it under this section.

12 “(2) REDUCTION FOR HOPE AND LIFETIME
13 LEARNING CREDITS.—The amount taken into ac-
14 count under subsection (a) shall be reduced by the
15 nanotechnology education and training program ex-
16 penses taken into account in determining the credits
17 under section 25A.

18 “(e) CERTAIN RULES MADE APPLICABLE.—For pur-
19 poses of this section, rules similar to the rules of section
20 45A(e)(2) and subsections (c), (d), and (e) of section 52
21 shall apply.

22 “(f) APPLICATION WITH OTHER CREDITS.—The
23 credit allowed by subsection (a) for any taxable year shall
24 not exceed the excess (if any) of—

1 “(1) the regular tax for the taxable year re-
2 duced by the sum of the credits allowable under the
3 subpart A and the previous sections of this subpart,
4 over

5 “(2) the tentative minimum tax for the taxable
6 year.”.

7 (b) CLERICAL AMENDMENT.—The table of sections
8 for subpart B of part IV of subchapter A of chapter 1
9 of the Internal Revenue Code of 1986 is amended by add-
10 ing at the end the following:

 “Sec. 30E. Nanotechnology education and training program expenses.”.

11 (c) EFFECTIVE DATE.—The amendments made by
12 this section shall apply to amounts paid or incurred in tax-
13 able years beginning after December 31, 2010.

14 **SEC. 402. ELIGIBLE EDUCATIONAL INSTITUTION.**

15 (a) IN GENERAL.—Section 25A(f)(2) of the Internal
16 Revenue Code of 1986 (relating to eligible educational in-
17 stitution) is amended to read as follows:

18 “(2) ELIGIBLE EDUCATIONAL INSTITUTION.—

19 The term ‘eligible educational institution’ means—

20 “(A) an institution—

21 “(i) which is described in section
22 101(b) or 102(a) of the Higher Education
23 Act of 1965, and

24 “(ii) which is eligible to participate in
25 a program under title IV of such Act, or

1 “(B) a commercial nanotechnology training
2 provider (as defined in section 30E(c)(3)).”.

3 (b) CONFORMING AMENDMENT.—The second sen-
4 tence of section 221(d)(2) of the Internal Revenue Code
5 of 1986 is amended by striking “section 25A(f)(2)” and
6 inserting “section 25A(f)(2)(A)”.

7 (c) EFFECTIVE DATE.—The amendments made by
8 this section shall apply to taxable years beginning after
9 December 31, 2010.

10 **SEC. 403. CURRICULUM DEVELOPMENT PROGRAM.**

11 (a) ESTABLISHMENT.—The National Science Foun-
12 dation shall provide for the establishment, on a merit re-
13 viewed and competitive basis, of a grant program for the
14 development of curriculum materials for interdisciplinary
15 nanotechnology courses at institutions of higher education.

16 (b) AUTHORIZATION OF APPROPRIATIONS.—There
17 are authorized to be appropriated to the National Science
18 Foundation for carrying out this section \$15,000,000 for
19 each of the fiscal years 2012 through 2015.

20 **SEC. 404. TRAINING PARTNERSHIPS.**

21 The National Science Foundation, through its Ad-
22 vanced Technological Education program, shall establish
23 a program to encourage manufacturing companies to enter
24 into partnerships with occupational training centers for

1 the development of training to support nanotechnology
2 manufacturing.

3 **TITLE V—PUBLIC OUTREACH**

4 **SEC. 501. INTERACTION BETWEEN SCIENTISTS AND ENGI-**
5 **NEERS.**

6 Not later than 6 months after the date of enactment
7 of this Act, the Secretary of Energy shall transmit to the
8 Congress a report containing a strategy for increasing
9 interaction on nanotechnology issues between scientists
10 and engineers at the Department of Energy's National
11 Laboratories and in the informal science education com-
12 munity, to enable researchers to use their expertise to as-
13 sist in the development of appropriate nanotechnology ex-
14 hibitions for school age children and the general public.

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