

## **Proposed Social Spending Innovation Research (SSIR) Initiative: Harnessing American Entrepreneurial Talent to Solve Major U.S. Social Problems**

**The SSIR proposal seeks to replicate, in social spending, the great success of the Small Business Innovation Research (SBIR) program in technology development.**

- **The SBIR program funds technology development by entrepreneurial small companies.** Under SBIR, created by Congress in 1982, 11 federal agencies allocate a small percentage of their annual research and development (R&D) budgets, for funding awards to small companies to develop and test innovative new technologies. The goal is to reach beyond the usual federal R&D grantees (*e.g.*, universities, large defense contractors) to fund a new set of entrepreneurs. The program has spawned breakthrough technologies in diverse areas such as computer chip production, commercial satellite communications, and medical imaging; and has received consistently favorable reviews in assessments by the National Academy of Sciences<sup>1</sup> and Government Accountability Office.<sup>2</sup> Congress reauthorized and expanded SBIR with overwhelming bipartisan support in 1992, 2000, and 2011. It is now funded at over \$2 billion per year.
- **The proposed initiative, SSIR, would apply the successful SBIR approach in a different (non-technology) field—social spending—as discussed below.** A version of SSIR, focused on K-12 education, was recently enacted into law as part of the Every Student Succeeds Act of 2015—see attachment, sponsored by Senators Orrin Hatch (R-UT), and Michael Bennet (D-CO). The concept is also a key recommendation of House Speaker Paul Ryan’s recent blueprint for addressing poverty, opportunity, and economic mobility.<sup>3</sup>

**U.S. social spending critically needs an SBIR-like infusion of entrepreneurial new ideas and rigorous testing, because:**

- **Many activities/strategies (“interventions”) funded by government social programs are found to produce weak or no positive effects when rigorously evaluated.** When evaluated in rigorous randomized controlled trials, social interventions in K-12 education, employment and training, crime prevention, and other areas are too often found ineffective or marginally effective. Interventions that produce sizable effects on important life outcomes do exist, as discussed below, but tend to be the exception. This pattern occurs not just in social spending, but in other fields where rigorous evaluations are conducted, such as medicine and business.<sup>4</sup>
- **Meanwhile, the United States has failed to make significant progress in key areas such as:**
  - **Poverty:** The U.S. poverty rate now stands at 13.5%, and has shown little overall change (whether by official or alternative National Academy measures) since the late 1970s.<sup>5</sup>
  - **K-12 education:** Reading and math achievement of 17-year-olds—the end product of our K-12 education system—is virtually unchanged over the past 40 years, according to official measures,<sup>6</sup> despite a 90% increase in public spending per student (adjusted for inflation).<sup>7</sup>
  - **Well-being of low to moderate income Americans:** The average yearly income of the bottom 40% of U.S. households, now at \$22,500, has changed little since the 1970s.<sup>8</sup>
- **Yet, entrepreneurs in the research, nonprofit, and for-profit sectors have developed a few interventions found highly effective in rigorous testing, illustrating what is possible.** Examples, evaluated in well-conducted randomized controlled trials, include:

- [Nurse-Family Partnership](#) – a nurse visitation program for low-income, first-time mothers during pregnancy and children’s infancy (reduced child abuse/neglect and injuries by 20-50% over 2-15 years, compared to the control group).
  - [Per Scholas Job Training](#) – a program for low-income, low-skilled workers that provides training in information technology (2½ years after program entry, increased workers’ earnings by 31%, or \$5,200 per year, compared to the control group).
  - [New York City’s Small Schools of Choice](#) – small public high schools created citywide in mostly high-poverty communities to replace large, low-performing high schools (4 years later, produced a 6-10 percentage point increase in the four-year high school graduation rate, versus the control group).
- **Such examples are rare because federal social spending has no systematic mechanism—analogue to SBIR—to fund and test innovative field-initiated ideas.** Federal agency evaluation funds generally focus on programs selected for testing by Congress or the agency, rather than initiated by entrepreneurs in the field. Agency research funding—such as that of the Institute of Education Sciences and National Institutes of Health—supports field-initiated ideas but is primarily focused on academic researchers and rarely funds entrepreneurial practitioners in nonprofit, for-profit, and state/local government organizations.

**SSIR would use a streamlined, three-phase process—modeled on SBIR—to fund the development and rigorous testing of innovative social interventions. Specifically:**

- **SSIR programs would be established at federal agencies using *existing* federal funds.** For example, Congress could direct federal agencies to restructure their existing discretionary social programs to incorporate the SSIR grantmaking process outlined below. Alternatively, as in SBIR, Congress could direct each agency to allocate a small percentage of its discretionary social spending (*e.g.*, 0.5%) to fund a new SSIR program at that agency.
- **Each agency SSIR program would focus on a broad area (*e.g.*, job training, crime prevention, health care delivery), and award grants through a competitive process.** Applicants could include nonprofit, for-profit, research, or state/local government organizations, with a priority for organizations that obtain a partial match of funds from other sources to help ensure the project’s sustainability. Grants would include:
  - **Early-phase grants (*e.g.*, \$50,000-\$300,000) to fund the development and feasibility testing of an intervention which has promising prior research,** for the purpose of determining whether the intervention can be successfully implemented in real-world settings (*e.g.*, public schools, unemployment insurance offices, community health clinics);
  - **Mid-phase grants (*e.g.*, \$0.5-3.0 million) to fund implementation and a rigorous evaluation of an intervention that has been successfully implemented under an early-phase grant** (or other effort meeting similar criteria), for the purpose of measuring the intervention’s impact on important outcomes, such as employment and earnings, high school graduation, criminal arrests, or health; and
  - **Expansion grants (*e.g.*, \$3-7 million) to fund implementation and a rigorous replication evaluation of an intervention found to produce sizable, important impacts under a mid-phase grant** (or other effort meeting similar criteria), for the purposes of delivering the intervention on a larger scale and determining whether its sizable impacts can be successfully reproduced and sustained over time.

**Conclusion:** Modeled on the successful SBIR program, the proposed initiative—SSIR—would infuse U.S. social spending with a critically-needed supply of entrepreneurial new ideas, shown in rigorous testing to produce important improvements in people’s lives.

See Attached Appendix for a version of SSIR—the Education Innovation and Research Program at the U.S. Department of Education—that was enacted as part of the Every Student Succeeds Act of 2015.

## APPENDIX

### SEC. 4611. GRANTS FOR EDUCATION INNOVATION AND RESEARCH

#### (a) PROGRAM AUTHORIZED—

(1) IN GENERAL: From funds reserved under section 4601(b)(2)(A),<sup>1</sup> the Secretary shall make grants to eligible entities to enable the eligible entities to—

(A) create, develop, implement, replicate, or take to scale entrepreneurial, evidence-based, field-initiated innovations to improve student achievement and attainment for high-need students; and

(B) rigorously evaluate such innovations, in accordance with subsection (di).

(2) DESCRIPTION OF GRANTS: The grants described in paragraph (1) shall include—

(A) *early-phase grants* to fund the development, implementation, and feasibility testing of a program, which prior research suggests has promise, for the purpose of determining whether the program can successfully improve student achievement or attainment for high-need students;

(B) *mid-phase grants* to fund implementation and a rigorous evaluation of a program that has been successfully implemented under an early-phase grant described in subparagraph (A) or other effort meeting similar criteria, for the purpose of measuring the program's impact and cost effectiveness, if possible using existing administrative data; and

(C) *expansion grants* to fund implementation and a rigorous replication evaluation of a program that has been found to produce sizable, important impacts under a mid-phase grant described in subparagraph (B) or other effort meeting similar criteria, for the purposes of—

(i) determining whether such impacts can be successfully reproduced and sustained over time; and

(ii) identifying the conditions in which the program is most effective.

(b) ELIGIBLE ENTITY—In this subpart, the term "eligible entity" means any of the following:

(1) a local educational agency;

(2) a State educational agency;

(3) the Bureau of Indian Education;

(4) a consortium of State educational agencies or local educational agencies;

(5) a nonprofit organization;

(6) a State educational agency, a local educational agency, a consortium described in paragraph (4), or the Bureau of Indian Education, in partnership with—

(A) a nonprofit organization;

(B) a business;

(C) an educational service agency; or

(D) an institution of higher education.

#### (c) RURAL AREAS—

(1) IN GENERAL: In awarding grants under subsection (a), the Secretary shall ensure that not less than 25 percent of the funds made available for any fiscal year are awarded for programs that meet both of the following requirements:

(A) The grantee is—

(i) a local educational agency with an urban-centric district locale code of 32, 33, 41, 42, or 43, as determined by the Secretary;

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<sup>1</sup> This is \$70.5 million in FY 2017-18 and \$90.6 million in FY 2019-20.

(ii) a consortium of such local educational agencies;

(iii) an educational service agency or a nonprofit organization in partnership with such a local educational agency; or

(iv) a grantee described in clause (i) or (ii) in partnership with a State educational agency.

(B) A majority of the schools to be served by the program are designated with a locale code of 32, 33, 41, 42, or 43, or a combination of such codes, as determined by the Secretary.

(2) EXCEPTION: Notwithstanding paragraph (1), the Secretary shall reduce the amount of funds made available under such paragraph if the Secretary does not receive a sufficient number of applications of sufficient quality.

**(d) MATCHING FUNDS**—In order to receive a grant under subsection (a), an eligible entity shall demonstrate that the eligible entity will provide matching funds, in cash or through in-kind contributions, from Federal, State, local, or private sources in an amount equal to 10 percent of the funds provided under such grant, except that the Secretary may waive the matching funds requirement, on a case-by-case basis, upon a showing of exceptional circumstances, such as:

(1) the difficulty of raising matching funds for a program to serve a rural area;

(2) the difficulty of raising matching funds in areas with a concentration of local educational agencies or schools with a high percentage of students aged 5 through 17—

(A) who are in poverty, as counted in the most recent census data approved by the Secretary;

(B) who are eligible for a free or reduced price lunch under the Richard B. Russell National School Lunch Act (42 U.S.C. 1751 et seq.);

(C) whose families receive assistance under the State program funded under part A of title IV of the Social Security Act (42 U.S.C. 601 et seq.); or

(D) who are eligible to receive medical assistance under the Medicaid program; and

(3) the difficulty of raising funds on tribal land.

**(di) EVALUATION**—Each recipient of a grant under this section shall conduct an independent evaluation of the effectiveness of the program carried out under such grant.

**(dii) TECHNICAL ASSISTANCE**—The Secretary may reserve not more than 5 percent of the funds appropriated under section 4601(b)(2)(A) for each fiscal year to:

(1) provide technical assistance for eligibility entities, which may include pre-application workshops, web-based seminars, and evaluation support; and

(2) to disseminate best practices.

## References

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<sup>1</sup> *An Assessment of the Small Business Innovation Research Program*, Charles W. Wessner, Editor, Committee on Capitalizing on Science, Technology, and Innovation, National Research Council, National Academies, 2008.

<sup>2</sup> The Government Accountability Office has conducted numerous review of SBIR since the program's establishment in 1982, the results of which are summarized in *Federal Research: Observations on the Small Business Innovation Research Program*, Government Accountability Office, GAO-05-861T, June 2005.

<sup>3</sup> [A Better Way: Our Vision for a Confident America – Poverty, Opportunity, and Upward Mobility](#), recommendation to "Incorporate Tiered-Funding Structures to Build Evidence," [abetterway.speaker.gov](http://abetterway.speaker.gov), June 7, 2016, p. 20.

<sup>4</sup> Illustrative examples include:

- **Education:** Of the 90 interventions evaluated in randomized controlled trials (RCTs) commissioned by the Institute of Education Sciences (IES) since 2002, approximately 90% were found to have weak or no positive effects. (Coalition for Evidence-Based Policy, *Randomized Controlled Trials Commissioned by the Institute of Education Sciences Since 2002: How Many Found Positive Versus Weak or No Effects*, July 2013, [linked here](#).)
- **Employment/training:** In Department of Labor-commissioned RCTs that have reported results since 1992, about 75% of tested interventions were found to have found weak or no positive effects. (This is based on a count of results from the Department of Labor RCTs that have reported results since 1992, as identified through the Department's research database, [linked here](#).)
- **Medicine:** Reviews have found that 50-80% of positive results in initial clinical studies are overturned in subsequent, more definitive RCTs. (John P. A. Ioannidis, "Contradicted and Initially Stronger Effects in Highly Cited Clinical Research," *Journal of the American Medical Association*, vol. 294, no. 2, July 13, 2005, pp. 218-228. Mohammad I. Zia, Lillian L. Siu, Greg R. Pond, and Eric X. Chen, "Comparison of Outcomes of Phase II Studies and Subsequent Randomized Control Studies Using Identical Chemotherapeutic Regimens," *Journal of Clinical Oncology*, vol. 23, no. 28, October 1, 2005, pp. 6982-6991. John K. Chan et. al., "Analysis of Phase II Studies on Targeted Agents and Subsequent Phase III Trials: What Are the Predictors for Success," *Journal of Clinical Oncology*, vol. 26, no. 9, March 20, 2008. Michael L. Maitland, Christine Hudoba, Kelly L. Snider, and Mark J. Ratain, "Analysis of the Yield of Phase II Combination Therapy Trials in Medical Oncology," *Clinical Cancer Research*, vol. 16, no. 21, November 2010, pp. 5296-5302. Jens Minnerup, Heike Wersching, Matthias Schilling, and Wolf Rüdiger Schäbitz, "Analysis of early phase and subsequent phase III stroke studies of neuroprotectants: outcomes and predictors for success," *Experimental & Translational Stroke Medicine*, vol. 6, no. 2, 2014.)
- **Business:** Of 13,000 RCTs of new products/strategies conducted by Google and Microsoft, 80-90% have reportedly found no significant effects. (Jim Manzi, *Uncontrolled: The Surprising Payoff of Trial-and-Error for Business, Politics, and Society*, Perseus Books Group, New York, 2012, pp. 128 and 142. Jim Manzi, *Science, Knowledge, and Freedom*, presentation at Harvard University's Program on Constitutional Government, December 2012, [linked here](#).)

<sup>5</sup> Proctor, Bernadette D., Jessica L. Semega, and Melissa A. Kollar, U.S. Census Bureau, Current Population Reports, P60-256(RV), *Income and Poverty in the United States: 2015*, U.S. Government Printing Office, Washington, DC, 2016. U.S. Census Bureau, [Official and National Academy of Sciences \(NAS\) Based Poverty Rates: 1999 to 2011](#), 2012. Kathleen Short, U.S. Census Bureau, HHS Division, *Estimating Resources for Poverty Measurement, 1993 – 2003*, 2005. Panel on Poverty and Family Assistance, National Academy of Sciences, *Measuring Poverty: A New Approach*, 1995, pp. 31-36. Christopher Wimer, Liana Fox, Irv Garfinkel, Neeraj Kaushal, and Jane Waldfogel, [Trends in Poverty with an Anchored Supplemental Poverty Measure](#), December 2013.

<sup>6</sup> *The Nation's Report Card: Trends in Academic Progress 2012*, NCEES 2013-456, National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, 2013.

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<sup>7</sup> Cornman, S.Q., and Zhou, L. *Revenues and Expenditures for Public Elementary and Secondary Education: School Year 2013-14 (Fiscal Year 2014)* (NCES 2016-301). U.S. Department of Education. Washington, DC: National Center for Education Statistics, 2016. Richard H. Barr, *Revenues and Expenditures for Public Elementary and Secondary Education, 1973-74* (NCES-76-140). U.S. Department of Health, Education & Welfare, National Institute of Education. Washington, DC: National Center for Education Statistics, 1976.

<sup>8</sup> U.S. Census Bureau, Current Population Reports, 2016, op. cit., no. 5. This refers to inflation-adjusted income. It includes income from the economy (such as earnings) but not government transfers (such as Food Stamps). However, the evidence suggests that the overall story of income stagnation for the bottom 40% of households changes little even when one adjusts income for government transfers and other items that affect household living standards. Specifically, the Census Bureau's alternative, National Academy of Sciences-based poverty measures make adjustments for government transfers, as well as factors such as state and local taxes, work expenses such as child care, out-of-pocket medical expenses, and geographic differences in housing costs. These adjustments change the poverty rate in any given year, as well as the composition of those in poverty, but do not change the overall trend in the poverty rate over time – i.e., little overall progress since the late 1970s. (The relevant citations are in endnote 5.) Although the National Academy-based poverty measures only apply to a subset of the bottom 40% of U.S. households, their corroboration of no meaningful improvement for that key subset suggest that similar findings would be obtained for the larger group.