



NCESE Official Response to Sen. Tom Coburn: “billions of dollars being borrowed to support [SSEP] space station science fair experiments”

by Jeff Goldstein, Center Director, National Center for Earth and Space Science Education (NCESE)
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Today, Sen. Tom Coburn (OK) pointed to the Student Spaceflight Experiments Program (SSEP) as an example of wasteful government spending. The National Center for Earth and Space Science Education finds his comments to be categorically inaccurate, and a great disservice to all the communities and partners that have worked hard to make SSEP a reality.

Here are excerpts from:

[Coburn’s ‘Wastebook’ Targets Include Mountain Lions, Sheep, Beer](#), Roll Call, October 22, 2014

“Sen. Tom Coburn and his investigators have been busy in their most recent effort to unveil what they view as government waste and abuse.

The 2014 edition of the Oklahoma Republican’s annual “Wastebook” runs almost 250 pages and features more than 1,100 footnotes. It’s presumably the last such report Coburn will issue from his Senate perch, as he’s resigning his seat early at the end of the current Congress.

As in previous editions, the report highlights billions of dollars of projects that Coburn views as wasteful government spending.”

“NASA draws criticism in a few areas, with Coburn skeptical of the costs associated with the International Space Station itself, including the presence of experiments designed by students.

“Some of the other studies being conducted on the space station are designed by elementary and high school students rather than scientists. Fifteen student projects were launched to the space station in July as part of the Student Spaceflight Experiments Program (SSEP),” the report said. “While encouraging young people to take an interest in science is an important goal, the billions of dollars being borrowed to support space station science fair experiments could make a bigger impact in the lives of these and other children in many other more cost efficient ways.”

NCESE’s Response –

“billions of dollars being borrowed to support space station science fair experiments ...”, really?

As the Director of the Student Spaceflight Experiments Program (SSEP), I want to be clear that Sen. Coburn’s characterization of this high caliber education program is misinformed, and his math is dead wrong.

SSEP is a U.S. national Science, Technology, Engineering, and Math (STEM) education program

created and overseen by the National Center for Earth and Space Science Education (NCESSSE), a non-profit, in partnership with a commercial space company NanoRacks, and CASIS, the NASA-funded Center for the Advancement of Science in Space.

Let's consider the 15 experiments Sen. Coburn cites that were launched in July, which comprise just one of 9 SSEP missions to date. They were not "space station science fair projects". Each of 15 participating communities was provided a small microgravity research mini-laboratory capable of supporting a single student team designed experiment, and launch services to get the min-lab to ISS – our national laboratory in space. Precisely mirroring how professional researchers compete for limited research assets, each community engaged hundreds of students in a very real research competition, with student teams designing microgravity experiments and writing formal research proposals. Those 15 experiments represent the culmination of 6,750 grade 5-12 students engaged in experiment design and 1,344 proposals submitted by research teams to Review Boards. Let me be clear – SSEP is a model STEM education program designed to immerse tens of thousands of students in a very authentic research experience, and to inspire and engage America's next generation of scientists and engineers.

Next let me address Sen. Coburn's math regarding SSEP use of federal funds. The cost to deliver the national programming, including all launch and return to Earth services, across these 15 communities was \$322,500. The communities brought another roughly \$300,000 to the table in fully burdened labor hours by their teaching staff to deliver the program at the local level. Through a significant effort, in the best spirit of partnership, \$572,500 of the total \$622,500 cost was raised in the private sector, from over 85: local companies, school districts, foundations, universities, PTAs, and individual donors (see the Local Partners list). The remaining \$50,000 was federal funding provided by CASIS to close budget shortfalls across the 15 communities. That funding truly enabled many communities to participate.

So the amount provided to SSEP from the \$3 billion in ISS operations funding was just \$50,000 through CASIS, which has as one of its statutory requirements utilization of ISS to promote STEM education. The cost to federal taxpayers was just 8% of the total program cost, which means each federal dollar was leveraged by over 11 private, charity, and community dollars. From NASA's vantage point, we are enabling the ISS program and CASIS to meet Congress' education mandate via a high caliber, science education program for less than ten cents on the dollar.

There is another point to be made. Why should these SSEP communities be provided access to ISS for worthy STEM education? Because they helped pay to launch ISS, construct it, and operate it.

Instead of lambasting the program, Sen. Coburn should hold SSEP up as a national model for an innovative and efficient government-private sector partnership in STEM education. In a tough fiscal climate, partnership is the future. Sen. Coburn, given this clarification, surely you must agree.

The Student Spaceflight Experiments Program (SSEP) is a program of the National Center for Earth and Space Science Education (NCESSSE) in the U.S., and the Arthur C. Clarke Institute for Space Education internationally. It is enabled through a strategic partnership with NanoRacks LLC, working with NASA under a Space Act Agreement as part of the utilization of the International Space Station as a National Laboratory. SSEP is the first pre-college STEM education program that is both a U.S. national initiative and implemented as an on-orbit commercial space venture.

The Smithsonian National Air and Space Museum, the Center for the Advancement of Science in Space (CASIS), and Subaru of America, Inc., are National Partners on the Student Spaceflight Experiments Program.