

ASA Statistical Literacy Grassroots Campaign

Background information on ASA Statistical Literacy Efforts

House Ask: Cosponsor H.R. 1817, the “STAT Act”

We are currently not asking members to meet with their U.S. Senators. Please stay tuned.

What is the current environment for statistics education?

There are many encouraging indicators of support for statistics education.

- Most recently, the Common Core State Standards (<http://www.corestandards.org/>), a joint effort of the National Governors Association and the Council of Chief State School Officers, has included many components of statistics for grades 6-12. While more statistics could be included for K-5, the inclusion otherwise is an important step forward. See ASA letter: <http://www.amstat.org/outreach/pdfs/ASAletterresponsetotheCCK-12Standards.pdf>.
- National mathematics standards and benchmarks from Achieve, the College Board, and the National Council for Teachers of Mathematics support data analysis and probability as an essential component of mathematics education.
- The Opportunity Equation (<http://www.opportunityequation.org/>), a joint report of the Carnegie Foundation of New York and the Institute for Advanced Study recommends exploring “the feasibility of offering a mathematics pathway to college for secondary students that is equally rigorous to the calculus pathway and that features deeper study of statistics, data analysis, and related discrete mathematics applications.” Math professor Arthur Benjamin makes a similar pitch more high school statistics at a TED conference (http://www.ted.com/talks/arthur_benjamin_s_formula_for_changing_math_education.html.)

What are the current challenges for statistics education?

- Many K–12 teachers have not received the necessary training at the appropriate level to teach statistical literacy in their classrooms. As a result, the topic may not be taught at all. Or the formulas may be taught without an adequate discussion of the statistical concepts.
- Education decisionmakers may not understand what statistics is and so may not understand the importance of statistical literacy.

What is the current legislative environment for education legislation?

- The Elementary and Secondary Education Act (No Child Left Behind) is set to be reauthorized in the next year. While its reauthorization has been put off numerous times, it remains the best vehicle for promoting statistical literacy.
- The House Education and Labor (E&L) Committee and the Senate Health, Education, Labor and Pension Committee are the lead committees for the reauthorization of the Elementary and Secondary Education Act (ESEA). They are likely to include ideas from bills relevant to ESEA that have gained some

traction. For this reason, it is important to gather cosponsors for the “STAT Act of 2011.”

- Congressman Loeb sack is a member of the E&L Committee

What is the current environment for STEM (Science, Technology, Engineering and Math) education?

- There has been strong support for improving STEM education for several years, thanks in large part to the 2006 National Academies *Rising above the Gathering Storm* (http://www.nap.edu/catalog.php?record_id=11463) report which highlighted the need to improve STEM education and basic research funding to address challenges to U.S. competitiveness.
- Congress did its part in 2007 and 2010 by passing the America COMPETES Act (COMPETES → Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science) implementing many of the recommendations of the “Gathering Storm” report.
- More recently, in launching the “Educate to Innovate” campaign, President Obama stated, “Reaffirming and strengthening America’s role as the world’s engine of scientific discovery and technological innovation is essential to meeting the challenges of this century. That’s why I am committed to making the improvement of STEM education over the next decade a national priority.”
- There is substantial private sector support for improving STEM Education, including the following:
- 15 prominent business organizations launched “Tapping America’s Potential (<http://www.tap2015.org/>),” with a goal to increase the annual number of science, technology, engineering and mathematics graduates with bachelor’s degrees to 400,000 by 2015.
 - The Business Higher Education Forum has launched “An American Imperative: Transforming the Recruitment, Retention, and Renewal Of Our Nation’s Mathematics and Science Teaching Workforce”: <http://www.bhef.com/solutions/stem/americanimperative.asp>.

Why should a Representative cosponsor this bill?

- To show support for giving students better skills for dealing with the many decisions they must make and for processing the many forms of data they’ll see on a day-to-day basis
- To show support making mathematics and science education more compatible with 21st century challenges.

Resources

- “Guidelines for Assessment and Instruction in Statistics Education (GAISE) Report: A Pre-K-12 Curriculum Framework,” August, 2005. For guidance on curricula for three statistical developmental levels. See appendices for specific exercises: <http://www.amstat.org/education/gaise/>.
- Interactive resource for how to promote statistical literacy to policymakers: <http://www.amstat.org/outreach/promotingstatisticalliteracy.cfm>
- “For Today’s Graduate, Just One Word: Statistics,” New York Times, August 5, 2009, front page: <http://www.amstat.org/outreach/pdfs/JustOneWord-Statistics.pdf>.

- Promoting Statistical Literacy one-pager:
<http://www.amstat.org/meetings/ism/2009/pdfs/Statliteracy.pdf>
- Statistical Significance documents: <http://www.amstat.org/outreach/statsig.cfm>
- ASA Education website : <http://www.amstat.org/education/>
- ASA Career Center: <http://www.amstat.org/careers/index.cfm>
- Consortium for the Advancement of Undergraduate Statistics Education (CAUSE): www.causeweb.org