

Feb 3, 2015

To the USCOTS 2013 Lifetime Achievement Award Review Committee,

We are very pleased to nominate Dr. Milo Schield, Professor of Business Administration at Augsburg College, for the 2015 USCOTS Lifetime Achievement award. www.causeweb.org/uscots/awards/

1) He has made a significant contribution to statistics education with broad impact in developing and maintaining a website dedicated exclusively to statistical literacy: www.StatLit.org.

In 2003, Milo created this website. Each year since then it has been Google-ranked as #1 website dedicated to statistical literacy. Since inception, it has had more than 1.7 million downloads, 1.4 million visits and 930,000 page views. In 2014, there were more than 365,000 downloads, 260,000 visits and 170,000 page views. It is still growing. In 2014, downloads were up 36%; visits up 26% and page views up 10%.

Today, it hosts almost a thousand papers and slides involving statistical literacy. Each year Milo publishes a news summary that provides links to relevant grants, books, journal articles and conference papers. This site has no advertising and charges no fees. Of the visitors from a known location in 2014, at least a third were located outside North America. Of these, more than a third were from Asia (mainly China).

The StatLit.org website is interdisciplinary: it includes links to journalism, adult literacy, quantitative literacy and numeracy. It features pages on leading authors – both popular (e.g., Joel Best, Howard Wainer, Jane Miller and Uri Braun) and academic (e.g., Judea Pearl, Kaiser Fung, Jeffrey Bennett and Herbert Weisberg). This website is referenced in the Wikipedia article on Statistical Literacy.

Many – if not most – of those using the site have no idea that Milo owns, manages and edits this website with no assistants while teaching a full load or more: three to four courses per semester.

We know of no one in statistics education who maintains anything like Milo's website. It is a tremendous resource for statistics educators all over the world. They may never get to a meeting of statistics educators, but they have unlimited access to many of the latest ideas on statistical literacy.

2) He has brought a unique approach to statistics education. He believes that statistics are of vital importance to non-statisticians: to journalists, political analysts, business managers and educated consumers. Milo has a PhD in Space Physics from Rice University and a 15 year career in business as an entrepreneur, a Senior Consultant with a CPA firm and a Senior Operations Research Analyst with a large property-casualty insurance company. He has been at Augsburg College for almost 30 years and is a tenured professor in Business Administration. He has taught Critical Thinking as a part of General Education for more than a decade and has taught undergraduate statistics for over 25 years. While on sabbatical at the RSS Centre for Statistical Education in 1995, he studied Bayesian statistics in a seminar taught by Colin Howson at the London School of Economics. These influences help explain Milo's unrelenting focus on context and causation in reading, interpreting and communicating statistics as evidence in arguments.

Milo brings a very broad perspective to statistical literacy: www.StatLit.org/pdf/2001-Schield-Statistical-Literacy-creed.pdf In 2005, he presented "Making Science a Core Liberal Art for the 21st Century", www.statlit.org/pdf/2005SchieldPKAL.pdf, to the AAC&U Project Kaleidoscope. In 2004, he delivered an invited peer-reviewed paper at an international philosophy conference in Prato Italy on the problem of induction (Resolving Three Key Problems in the Humanities): www.statlit.org/pdf/2004SchieldNDIH.pdf

3) He has been very active in supporting statistical education organizationally. He has been a member of the ASA Section on Statistical Education since 1995. In 2009, he was elected Vice President of the National Numeracy Network (NNN). In 2011, he was elected to membership in the International Statisti-

Nomination Letter

cal Institute (ISI). <http://isi.cbs.nl/ISImembers/isimembersS-Z.pdf>. That same year he was elected President of the Twin Cities Chapter of the American Statistical Association. He is the US Director of the International Statistical Literacy Project (ISLP): iase-web.org/islp/People.php?p=Country_Coordinators

Milo has organized 17 topic-contributed sessions on statistical literacy at the ASA-JSM (this seems like some kind of record), one late-breaking session and a session at the ISI. He has invited over 50 speakers: many from outside statistics (e.g., Joel Best, Sociology; Joe Abramson, Epidemiology; and Gary Klass, Political Science), some from statistics but outside statistics education (e.g., Donald Rubin, David Cox and John Bailar) and some from within statistics education (e.g., Jessica Utts, Deborah Rumsey, Andrew Gelman and Robert Hayden). www.statlit.org/pdf/Schield-JSM-Sessions-Statistical-Literacy.pdf

4) *Milo has been active in promoting statistics and statistical literacy outside the discipline.* In 1999 his invited papers, "Statistical Literacy: Thinking Critically about Statistics" and "Common Errors in Forming Arithmetic Comparisons", appeared in the first issue of the journal *Significance* published by the Association of Public Data Users. www.StatLit.org/pdf/1999SchieldAPDU.pdf

In 2001, Milo was the Principal Investigator on a four-year grant from the W. M. Keck Foundation along with Donald Rubin (Harvard) and Judea Pearl (UCLA). The purpose of the grant was "to develop statistical literacy as an interdisciplinary curriculum". This appears to be the first grant to support statistical literacy in the world. www.StatLit.org/images/2001-Augsburg-Now-Keck-Grant.jpg

In 2004, his invited paper, "Statistical Literacy and Liberal Education at Augsburg College", appeared in the AAC&U's *Peer Review*: www.StatLit.org/pdf/2004SchieldAACU.pdf. Sociologist Joel Best referred to Milo as "the leader of the statistical literacy movement" in his book, *More Damned Lies and Statistics*.

In 2005, his invited paper, "Information Literacy, Statistical Literacy and Data Literacy", appeared in the IASSIST journal, *Information Quarterly* (IQ). www.StatLit.org/pdf/2005SchieldIASSIST.pdf

In 2008, Milo's invited paper, "Quantitative Literacy and School Mathematics", was published by the Mathematical Association of American in a book titled *Calculation vs. Context*. He argued that QL or statistical literacy should be offered in place of Algebra II for college-bound students in non-quantitative majors. www.statlit.org/pdf/2008SchieldMAA.pdf. In a review, Professor Mast said "This is an excellent suggestion." www.statlit.org/pdf/2009MastReviewOfSchield-QLvsSchoolMathematics-Numeracy.pdf

In 2009, he was featured in an article on Quantitative Literacy in the *Washington Post*. http://voices.washingtonpost.com/x-equals-why/2009/02/what_is_quantitative_literacy.html. In 2010, he was referenced by the *Los Angeles Times*: www.statlit.org/pdf/2010SmithLATimes.pdf.

In 2011, he created a new catalog course at Augsburg: "Statistical Literacy for Managers". His invited paper, "Statistical Literacy: A New Mission for Data Producers", was published in the *Statistical Journal of the International Association of Official Statistics* (SJAOS). This paper has been downloaded more than 10,000 times. www.statlit.org/pdf/2011schieldsjaos.pdf.

5) *Milo has been active in advancing statistics education within the discipline.* During the past 20 years – starting with his first presentation at an ASA JSM conference in 1994 -- Milo has written 66 papers on statistical literacy. See www.StatLit.org/pdf/Schield-Papers.pdf. Of his nine invited or peer-reviewed papers, six are described above and three are described below. The rest were presented at the ASA JSM (27), ICOTS (5), IASE (4), MAA-JMM (4), Making Statistics More Effective in Schools of Business (3), ISI (2), etc. Milo has given more statistics talks outside the US (34 talks in 17 countries on six continents) than many educators give within the US: www.StatLit.org/pdf/Schield-Talks-by-Location.pdf.

In 1998, Milo was a pioneer in his use of "statistical literacy": www.statlit.org/pdf/1998SchieldASA.pdf

Nomination Letter

His 1999 JSM paper, "Simpson's Paradox and Cornfield's conditions", was cited as a "great paper" by Peter Westfall, a former Editor of *The American Statistician*. www.StatLit.org/pdf/1999SchioldASA.pdf

In 2004, his invited paper, "Statistical Literacy Curriculum Design", appeared in the IASE *Curricular Development in Statistics Education*: www.stat.auckland.ac.nz/~iase/publications/rt04/2.4_Schiold.pdf

In 2005, Milo published his textbook, *Statistical Literacy – seeing the story behind the statistics*, for students in non-quantitative majors. This appears to be the first introductory textbook that includes necessary conditions for a confounder to reverse an observed association. www.StatLit.org/Schiold.htm

In 2006, *STATS* magazine published Milo's article: "Presenting Confounding Graphically Using Standardization". It has been downloaded more than 19,000 times. Peter Holmes, co-founder of ICOTS and *Teaching Statistics*, said that reading this article was the first time he "really understood Simpson's paradox." Milo's students use this technique to answer this question: Will controlling for a confounder transform a statistically-significant association into one that is statistically-insignificant – or vice versa? www.statlit.org/pdf/2006SchioldSTATS.pdf

In 2006, he presented "Percentage Graphs in USA Today" at the ASA JSM. This paper is the most popular on his website (over 100,000 downloads). www.statlit.org/pdf/2006SchioldASA.pdf. In 2010, his invited paper, "Assessing Statistical Literacy: Take CARE", was published by Wiley in *Assessment Methods in Statistical Education*: www.statlit.org/pdf/2010SchioldExcerptsAssessingStatisticalLiteracy.pdf. That year he offered his statistical literacy course online. In 2012, he co-presented "A Second Statistics Course is Needed: What should it be?" at eCOTS. www.causeweb.org/ecots/ecots12/breakouts/7/

In 2013, he created statistics exercises using Excel that were downloaded over 50,000 times in 2014. The most popular (over 37,000 downloads) was "Create Log-Normal". In second-place was "Create Logistic Regression" (over 6,500 downloads). www.statlit.org/Tools.htm

In 2014, he presented an invited webinar at eCOTS: "Two Big Ideas for Teaching Big Data". This paper was downloaded more than 4,600 times in 2014: www.statlit.org/pdf/2014-Schiold-ECOTS.pdf. An audio presentation is at <https://www.causeweb.org/ecots/ecots14/35/>. He is working on a textbook: *Statistical Literacy for Managers*. www.StatLit.org/pdf/2013-Schiold-MBAA.pdf

6) *Milo has been acknowledged by his peers.* According to Google Scholar, Milo has authored four of the 20 most-cited papers with *Statistical Literacy* in their title. www.StatLit.org/pdf/2014-Google-Scholar-Statistical-Literacy.pdf. He has been invited to give papers by a wide variety of organizations. His papers, slides and Excel exercises have been downloaded over 250,000 times. This is broad impact!

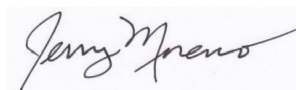
Given Milo's noteworthy and long-standing support of statistical education, his mentoring of other statistical educators, his many contributions to statistical literacy – both inside and outside our discipline -- and the breadth of impact world-wide from his papers, talks, JSM sessions and statistical literacy website (as evidenced in the breadth of the 35 attached testimonials), we strongly endorse his candidacy for the 2015 USCOTS Lifetime Achievement Award.



Larry Lesser
University of Texas at El Paso



Daniel T. Kaplan
Macalester College



Jerry Moreno, Emeritus
John Carroll University