

Prof. Daniel T. Kaplan, Ph.D

DeWitt Wallace Professor of Mathematics, Statistics, and Computer Science
Macalester College 1600 Grand Ave. Saint Paul, MN 55105
March 1, 2018

Committee on Fellows
American Statistical Association

I'm writing to support enthusiastically the nomination of Dr. Milo Schield for ASA Fellow.

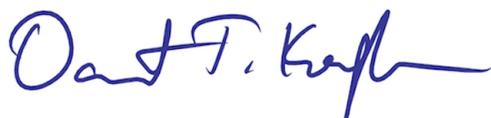
I've known Dr. Schield for about 15 years. When we met, I was undertaking a revision of the component of Macalester's general education requirement that has since become known as the "Quantitative Reasoning" requirement. Macalester is a liberal arts college with a strong emphasis on civic engagement. For many years it had a requirement stated in terms of mathematics, computer science, and logic courses. These failed to engage areas that are important in understanding public policy and decision making. Investigating the possibilities for effective curricula, I quickly encountered Dr. Schield's work.

Dr. Schield had been (and continues to be) working to encourage statistics educators to embrace what is sometimes called "statistical literacy." One ongoing manifestation of this is the website, www.statlit.org, created by Dr. Schield in 2003 and continuing to this day to be the go-to reference for a large diversity of views and approaches to statistical literacy. Dr. Schield is a tireless worker, not just in terms of his books and papers (75 statistical literacy papers in the 20 years he has been working in the area), but in outreach through regional, national, and international conference presentations.

There are many components to statistical literacy. Dr. Schield's publication list comprehensively covers them, introducing pedagogical techniques, examples, and creative conceptual illustrations. I'd like to focus on just one area where Dr. Schield's influence work and outreach have been strongly impactful: confounding and multi-variable thinking. Looking back at stats textbooks at the turn of the century, one sees a nihilistic approach to serious thinking about causal relationships: "no causation without experimentation", "lurking" variables, no mention of covariates, no introduction of statistical techniques to take potential confounders into account. Simpson's paradox was introduced, but only to scare students from drawing conclusions, instead of to better inform the process of drawing responsible conclusions.

For many years, Dr. Schield's voice was pretty much the only one out there conveying the message that understanding and dealing with confounding needs to be core to the introductory curriculum. But, over the years, his patient and consistent advocacy and his articulate and scholarly presentation kept the issue on the table. One sign of his cumulative effect is the appearance of a new emphasis in the 2016 ASA GAISE recommendations: "Give students experience with multivariable thinking." Dr. Schield did not write the GAISE report, but he set the stage, motivated, and inspired the actors. For his important role in the evolution of statistics education, Dr. Schield's has earned and warrants the honor of being designated an ASA Fellow.

Sincerely,



Daniel Kaplan

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15 February 2018

Committee on Fellows
American Statistical Association

To the Committee:

I write to endorse Carl Lee's nomination of Milo Schield to be an ASA Fellow. I was surprised to find that Milo is not already a Fellow, given how much he has done for so many years.

Milo Schield has been a strong advocate for statistics education, and for a more statistically literate society, for decades. I have been impressed with Milo's energy and accomplishments, as he has organized sessions at meetings, has served on panels, has given talks, and has written widely about numeracy. Every time I attend a conference that includes a statistics education component (e.g., JSM) I expect to see Milo give a talk, or to have organized a session; often it is both.

Milo is a tireless promoter of statistics and quantitative literacy. Much of his scholarly work has been on statistical literacy, an area in which he has written dozens of papers, many of which are widely read and cited. Milo has also created a website, www.StatLit.org, that has had more than 1 million visits, providing links to papers, books, online tools, and other resources.

Milo always has something thought provoking to say. He is not content to just add another voice to the choir; he wants to change the perspective of his audience. Milo gets people thinking about how to teach, and more importantly what to teach. He challenges those who would teach the same topics, in the same ways, year after year. He adds to the list of ideas we should consider in statistics education and comes up with new ways to present important concepts, such as a graphical presentation of Simpson's Paradox.

In particular, I credit Milo with changing how I think about causal inference and observational data. It has become something of a mantra among statistics educators to say "It is impossible to say anything about cause-and-effect from

observational data." But that is not true. Milo has been pushing educators to think more broadly and to help their students understand how to think about causal relationships within observational data. It isn't easy to teach undergraduates about covariance, minimum effect size, and the like, but rather than back down from these challenges Milo finds a way to forge ahead. His work influences the rest of us.

We are fortunate to have such a tireless worker advancing the cause of statistics education.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Witmer', written in a cursive style.

Jeff Witmer
Professor
Oberlin College
ASA Fellow

Herbert I. Weisberg

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February 20, 2018

Committee on Fellows

American Statistical Association

It is a pleasure for me to support the ASA Fellow nomination of Milo Shield. I met Milo six years ago as a participant in an ASA invited session he had organized for authors of recent statistical books. After the session, we talked at some length about his efforts to promote statistical literacy, and the StatLit.org website in particular. I was greatly impressed by his obvious passion and effort devoted to the ideal of promoting clear quantitative thinking and analysis in our society.

Since then, we have spoken occasionally and interacted through the website. What Milo has accomplished is truly extraordinary. The quality of the projects and activities he has undertaken are evident in his CV and supporting letters from those who have worked closely with him. I would like to address some reasons why these contributions merit recognition. I speak from the perspective of a statistical practitioner, with 45 years of experience as a consultant, researcher, author and entrepreneur.

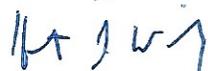
Most ASA Fellows have traditionally been selected for technical achievements in the academic, industrial and governmental spheres. Individuals whose careers fall outside these areas have a much lower chance of coming to the attention of current ASA Fellows. Consequently, they are far less likely to become Fellows. However, precisely because they work outside the mainstream, such folks may have unique contributions with powerful impacts on our profession and society. I believe it is particularly important and appropriate for ASA to give visibility to such individuals, as it seeks to remain vital and relevant.

Promoting statistical literacy is certainly one of the most important missions of the ASA. Many ASA Fellows pursue this objective, often implicitly, in many worthwhile ways. However, Milo is highly unusual in choosing to make this the centerpiece of his efforts. These tireless and creative efforts are carried out in part through his teaching and related educational activities, and in part through his website. Their broad impact is felt not just by mathematically sophisticated students, but by anyone who wants to understand basic quantitative reasoning. In my own career, I have seen the importance of such skills for those who possess them, and the disadvantages for those who do not. Furthermore, Milo often serves as an unofficial "ambassador" for statistics by connecting with a variety of outside organizations, as well as the press.

The StaLit.org website he created and manages entirely on his own is a unique resource. Its impact has been enormous, with over two million visits since inception, and an increasing volume each year. The site allows anyone to become aware of new publications relevant to statistical issues. As an author, I especially appreciate the exposure he has provided for my own books. Milo reviews, curates, and often comments on various current developments and publications. His site is a free one-stop shop for finding current information about quantitative reasoning and related issues.

For his tremendously valuable service to the statistical profession and society, I strongly endorse Milo's nomination.

Sincerely,



Herbert I. Weisberg, Ph.D.

President, Causalytics LLC

ASA Fellow



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21 February 2018

Committee on Fellows
American Statistical Association

Re: Professor Milo Schield

Dear Committee,

I have known Milo Shield for over 15 years through activities of the International Association for Statistical Education and the ASA's Section on Statistical Education. I am very pleased to support the nomination of Milo as a Fellow of the American Statistical Association for his leadership in, and service to, the field of statistics education over a very career of more than 30 years.

Promoting and increasing statistical literacy and capability, especially amongst decision leaders in the wider society, is statistics' single most important "missionary" activity. Milo has been our most indefatigable worker for the cause of statistical literacy for many years. He began writing on and promoting statistical literacy in about 1998.

From his background in the business world and teaching in a business school Milo knew that there were important topics that had long been deemed "too complicated for introductory statistics" are absolutely critical to get into the brains of decision makers and, moreover, introductory statistics is the best vehicle we have for spreading critical messages widely. Making key ideas and thinking modes accessible at low levels is absolutely critical to this endeavour and Milo has been an important leader in that regard. Most important to Milo were messages around causal reasoning and confounding that extend much beyond the traditional bromide that "correlation is not causation". These are areas that introductory statistical education is even now only beginning to engage seriously with.

The impact of Milo's own work is attested to by the upwards of a quarter of a million downloads of his own papers, sets of slides and exercises. But his most important work is the website site <http://www.statlit.org/> that he has been building since 2003. This is by far the most comprehensive compendium of publications and commentary related to statistical literacy in the world. Statistical literacy and this rich and engaging site have been a labour of love for 20 years, boosted by his 2001-5 Keck Foundation grant with Donald Rubi, n and Judea Pearl. The site is very heavily used having had millions of downloads from all over the world of its more than a thousand papers.

Another major vehicle for getting the message out has been conferences. For example, Milo has organised Topic Contributed paper sessions on statistical literacy at virtually every JSM since 2001 and he has attracted important speakers from outside statistics to JSM including popular writers like Joel Best.

He is US Director of the International Statistical Literacy Project. And he has reached outside statistics education becoming a key member of the Mathematical Association of America's Special Interest Group promoting Quantitative Literacy and the US National Numeracy Network, of which he has been Vice President. I am very pleased to support the nomination of Milo as a deserving Fellow of ASA.

Yours sincerely,

Chris Wild

February 15, 2018

To the awards committee:

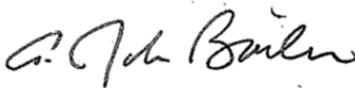
It is my pleasure to recommend Dr. Milo Schield for recognition as a Fellow of the American Statistical Association. I first met Dr. Schield in 2009. He contacted me about work that I was doing with a journalism colleague related to the interaction of statistical literacy and journalistic narrative. Milo is a leader in promoting statistical literacy and numeracy, and I was pleased to connect with him.

Dr. Schield has taught traditional statistics at the undergraduate and graduate levels for over 30 years. He has spent more than 15 years developing expertise in teaching statistical literacy to students in non-quantitative majors: making statistical principles available for students who are not mathematically inclined. He began a focus on statistical literacy issues in 1995 with a six month residency at the Royal Statistical Society Centre for Statistical Education. Since then he has contributed graphical techniques to allow students to see the influence of binary confounder on an association between two rates or percentages; developed web-based software that reads ordinary English statements and gives feedback on user errors in using ordinary English to describe and compare rates and percentages presented in statements, tables and graphs, identified mathematical conditions necessary for a binary confounder to make a statistical association spurious when taken into account; identified elements of ordinary English that distinguish important statistical ideas such as association vs. causation, control of versus control for, conditional probability misconceptions; and produced more than 50 papers and delivered more than a hundred talks involving statistics or statistical literacy.

Dr. Milo Schield has provided national and international leadership in promoting statistical literacy and numeracy. His contributions include developing and maintaining the statistical literacy website statlit.org. This site is a great resource for anyone interested in developing, promoting and teaching good statistical thinking skills. He serves as an officer of the National Numeracy Network. In addition, he was the US representative to the International Statistical Literacy Project, organized as part of the International Association for Statistical Education. His statistical literacy interests are shared with his ASA colleagues by his frequent organization of JSM sessions (at least 17!).

Milo Schield is a leader in promoting statistical literacy and an educator whose contributions merit recognition as a Fellow of the American Statistical Association.

Sincerely yours,



A. John Bailer, PhD
University Distinguished Professor and Chair