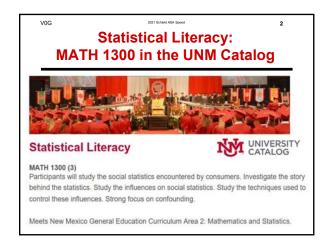
UNM: New Confounder-Based
Statistical Literacy Course

Milo Schield, Univ. New Mexico

Fellow: American Statistical Association Elected Member: International Statistical Institute US Rep: International Statistical Literacy Project President: National Numeracy Network

JSM Online August 11, 2021
Video: www.StatLit.org/pdf/2021-Schield-ASA-Speed-Video.mp4
Paper: www.StatLit.org/pdf/2021-Schield-ASA-pdf
Speed: www.StatLit.org/pdf/2021-Schield-ASA-Slides-Speed.pdf
Slides: www.StatLit.org/pdf/2021-Schield-ASA-Slides.pdf



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UNM Math 1300: Quick Summary

Less than 30% overlap with traditional statistics
Holistic: Studies all influences on a statistic:
confounding, assembly, randomness & error
Statistical: Study design, Cornfield conditions,
confounder-influence on statistical significance
GAISE 2016: MV regression: standardization
Ordinary English: conditional probability
Applied/literary: Analyze one or two cases/week

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UNM Math 1300: Big Ideas

Association is not [always] causation; Disparity is not [always] discrimination

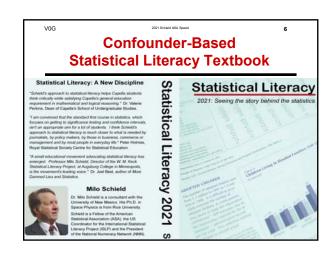
Crude association: An association that does not take anything else into account; a mixed-fruit (apples & oranges) comparison.

To take into account (to control for) a confounder is to adjust (balance) the confounder mixture.

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UNM Math 1300: Student Learning Outcomes

- 1. Distinguish association from causation; form twogroup comparisons using ordinary English.
- 2. Identify and evaluate kinds of statistical influence: confounding, assembly, randomness and error.
- 3. Can identify, evaluate and use techniques to take control of or control for these influences.
- 4. Can describe and compare rates and percentages using ordinary English
- 5. Can analyze and evaluate the statistics in the everyday media, press releases and journal articles.



Study Confounder-Based Statistical Literacy

Statistical Literacy: The Diabolical Denominator www.StatLit.org/pdf/2021-Schield-MathFest.pdf

Statistical Literacy: Teaching Confounding www.StatLit.org/pdf/2021-Schield-USCOTS.pdf

Confounding and Cornfield: Back to the Future www.StatLit.org/2018-Schield-ICOTS.pdf

University of New Mexico Offers Math 1300 www.StatLit.org/pdf/2021-Schield-ASA.pdf

For all of Schield's papers by topic, www.StatLit.org/Schield-Pubs.htm

V0G 2021 Schield ASA Speed

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Paper: www.StatLit.org/pdf/2021-Schield-ASA.pdf

Slides2: www.StatLit.org/pdf/2021-Schield-ASA-Slides-Speed.pdf

Statistical Literacy: MATH 1300 in the UNM Catalog



Statistical Literacy



MATH 1300 (3)

Participants will study the social statistics encountered by consumers. Investigate the story behind the statistics. Study the influences on social statistics. Study the techniques used to control these influences. Strong focus on confounding.

Meets New Mexico General Education Curriculum Area 2: Mathematics and Statistics.

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Statistical: Study design, Cornfield conditions, confounder-influence on statistical significance

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UNM Math 1300: Big Ideas

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- 4. Can describe and compare rates and percentages using ordinary English
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Confounder-Based Statistical Literacy Textbook

Statistical Literacy: A New Discipline

"Schield's approach to statistical literacy helps Capella students think critically while satisfying Capella's general education requirement in mathematical and logical reasoning." Dr. Valerie Perkins, Dean of Capella's School of Undergraduate Studies.

"I am convinced that the standard first course in statistics, which focuses on getting to significance testing and confidence intervals, isn't an appropriate aim for a lot of students. I think Schield's approach to statistical literacy is much closer to what is needed by journalists, by policy makers, by those in business, commerce or management and by most people in everyday life." Peter Holmes, Royal Statistical Society Centre for Statistical Education.

"A small educational movement advocating statistical literacy has emerged. Professor Milo Schield, Director of the W. M. Keck Statistical Literacy Project, at Augsburg College in Minneapolis, is the movement's leading voice." Dr. Joel Best, author of More Damned Lies and Statistics.



Milo Schield

Dr. Milo Schield is a consultant with the University of New Mexico. His Ph.D. in Space Physics is from Rice University. Schield is a Fellow of the American

Schield is a Fellow of the American Statistical Association (ASA), the US Coordinator for the International Statistical Literacy Project (ISLP) and the President of the National Numeracy Network (NNN).

Statistical Literacy 2021

Statistical Literacy 2021: Seeing the story behind the statistics Figure A Children Living in Blended Families: Fall 1 ADOPTED CHILDREN The number of adopted children rose from 1.1 million in 1991 to 1.5 million in 1996. It is difficult to accurately estimate the number of adopted children, as some parents may desire to keep this information

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