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- [Home](#)
- [About](#)
- [Editorial Calendar](#)
- [Submission Instructions](#)
- [PDF Archives](#)
 - [2008 Amstat News](#)
 - [2009 Amstat News](#)
 - [2010 Amstat News](#)
 - [2011 Amstat News](#)
 - [2012 Amstat News](#)
 - [2013 Amstat News](#)
 - [2014 Amstat News](#)
 - [2015 Amstat News](#)
- [Advertise](#)

Search the archive... 

[Home](#) » [Award Deadlines and Information](#), [Featured](#), [Member News](#)

2014 Causality in Statistics Education Prize Winners Announced

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During the 2014 Joint Statistical Meetings, the ASA awarded the second Causality in Statistics Education Prize, which was established to “encourage the teaching of basic causal inference methods in introductory statistics courses.” The prize was awarded to **Maya Petersen** and **Laura B. Balzer** for developing the path-blazing course “Introduction to Causal Inference” at the University of California at Berkeley.

With clear lectures, detailed discussion assignments, and innovative labs and homework using R, Petersen and Balzer prepared a new generation of scientists, who have acquired the tools of modern causal analysis and are equipped to tackle each step of the causal roadmap. The [course is publicly available](#) and thereby provides other institutes an educational resource for this foundational material.

Prize Committee Members

- Dennis Pearl (The Ohio State University, CAUSE, co-chair)
- Judea Pearl (University of California at Los Angeles, co-chair)
- Felix Elwert (University of Wisconsin-Madison)
- Daniel Kaplan (Macalester College)
- Michael Posner (Villanova University)
- Larry Wasserman (Carnegie Mellon University)

Peterson and Balzer's course was chosen primarily on the basis of its "teachability" and appeal to a broad range of statistics-minded disciplines.

Judea Pearl, who donated the prize and serves as co-chair of the prize selection committee, said the prize is aiming to close a growing gap between research and education in this field. "While researchers are swept in an unprecedented excitement over new causal inference tools that are unveiled before us almost daily, the excitement is hardly seen among statistics educators and is totally absent from statistics textbooks."

In a [recent interview](#), Pearl said to ASA Executive Director Ron Wasserstein, "I hope this prize will stimulate the generation of effective course material. ... And would convince every statistics instructor that causation is easy (It is!) and that he/she too can teach it for fun and profit. The fun comes from showing students how simple mathematical tools can answer questions that Pearson-Fisher-Neyman could not begin to address (e.g., control of confounding, model diagnosis, Simpson's paradox, mediation analysis), and the profit comes because most customers of statistics ask causal, not associational, questions."

The following prize criteria set by the selection committee were pragmatic:

- The extent to which the material submitted equips students with skills needed for effective causal reasoning
- The extent to which the submitted material assists statistics instructors gain an understanding of the basics of causal inference and prepares them to teach these basics in undergraduate and lower-division graduate classes in statistics
- The skills listed were, likewise, problem-oriented, and included the following:
- Ability to take a given causal problem and articulate in some mathematical language (e.g., counterfactuals, equations, or graphs) both the target causal quantity to be estimated and the assumptions one is prepared to make (and defend) to facilitate a solution
- Ability to determine, in simple cases, how the target causal quantity can be estimated using the observed data
- Ability to take a simple scenario (or a model), determine whether it has statistically testable implications, and then apply data to test the assumed scenario

This year, the committee received four nominations. The selection was difficult, considering a balance had to be struck between three competing objectives: mathematical rigor, breadth of topics, and accessibility to a large audience of students and instructors.

The inaugural Causality in Statistics Education award in 2013 was given to Felix Elwert of the department of sociology at the University of Wisconsin-Madison for his two-day course, "Causal Inference with Directed Acyclic Graphs." Elwert received \$5,000 and a plaque at the 2013 Joint Statistical Meetings in Montréal, Québec, Canada. A gift from Microsoft Research enabled the prize to double in 2014 to \$10,000. Slides covering about eight lecture hours of [Elwert's short course and accompanying publications](#) are available.

Nominations Sought for 2015 Prize

Nominations are wanted for the [2015 Causality in Statistics Education Award](#), which, due to a gift from Microsoft Research, will again be \$10,000. The nomination deadline is February 15, 2015.