

## **Jane Maienschein (1950- )** <sup>[1]</sup>

By: Editorial Team, EP Keywords: [Biography](#) <sup>[2]</sup> [History](#) <sup>[3]</sup> [Philosophy](#) <sup>[4]</sup>

Image not found

Thumbnail portrait [images/faculty/jmaienschein.jpg](#)

Jane Maienschein is the daughter of Joyce Kylander and Fred Maienschein, and was born in Oak Ridge, Tennessee, on 23 September 1950. She attended MIT as a freshman and then transferred to Yale University in 1969 when Yale decided to admit women undergraduates. In 1972 she graduated with an honors degree in History, the Arts, and Letters having written a thesis on the history of science. She then attended Indiana University and studied with historian of embryology Frederick B. Churchill, took courses with embryologist Rudolf Raff, and learned how to do embryological laboratory research with Robert Briggs. She received her MA in 1976 and a PhD in 1978, with a pre-doctoral Fellowship at the Smithsonian to study the history of microscopes and microscopy, and an NSF-funded dissertation improvement visit to the Marine Biological Laboratory (MBL) to reproduce old embryological experiments and soak up the history and resources of the MBL Library and labs. Maienschein's scholarly research focuses on the history and philosophy of developmental biology.

In graduate school Briggs helped Maienschein reproduce historical experiments using the dissertation study of Ross Granville Harrison's 1907 experiments on nerve fiber development. Harrison had asked whether the neuroblast cell (which we would now call a neural stem cell) can reach out and develop its fiber by protoplasmic outgrowth or whether the cell required a pre-established bridge, as many of his contemporaries argued must be the case. Harrison carried out the first ever tissue culture experiment, in which he got the neuroblast cells to grow when transplanted into an artificial medium of frog lymph. Briggs and Maienschein discovered that carrying out the experiment with the techniques Harrison described led to lots of nice bacterial and other unidentified cultures, but not nerve cells. Retracing Harrison's steps revealed that he had taken advantage of being temporarily housed near the bacteriologists at Yale University and had used more sophisticated aseptic techniques than he described.

This work led Maienschein to an analysis of the role of the details of scientific practices and the value of carrying out "practical history," as Edwin Clarke called it. She has also asked questions about the role of experiments in settling (or failing to settle) issues of theoretical debate. Her work in history of embryology has concentrated especially on the late nineteenth and into the twentieth century, including work done at the Marine Biological Laboratory in Woods Hole, Massachusetts, and on issues of morphogenesis and differentiation related to cell division. This research has led her to study stem cell research and regenerative medicine.

Maienschein is also a dedicated teacher who has received multiple awards, including the Arizona State University Parents Association Professor of the Year Chair, Regents' Professorship, and President's Professorship. In addition, she received the History of Science Society's Joseph H. Hazen Education Prize Award. During the 105th United States Congressional session, in 1997 and 1998, she served as senior science advisor to Congressman Matt Salmon, who served on the Science Committee. She took a group of

undergraduates to Washington, which led to their paper presentation at the 150th meeting of the American Association for the Advancement of Science, and that led to an invitation to write an editorial for *Science*. The students' essay on "Scientific Literacy" remains the only publication in *Science* by undergraduates, and it led to a longer peer-reviewed article in *Science Communication*.

This personal exposure to the political context of science also led Maienschein to research reflecting more seriously on the social, political, and legal contexts of scientific research. Most productively, this has resulted in collaborative publications and projects with bioethicist Jason Scott Robert and Rachel Ankeny.

Maienschein served as the first president for the International Society for History, Philosophy, and Social Studies of Biology (Ishkabibble) in 1989-1991, president of the History of Science Society in 2008 and 2009, and in numerous other administrative rolls. She is Director of the Embryo Project, along with Manfred Laubichler.