

The Encyclopedia ^[1]

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Short Description

The *Embryo Project Encyclopedia* is a digital publication for topics related to the sciences of developmental biology and reproductive biology, and for the historical, legal, ethical, and social contexts of those sciences. The encyclopedia regularly publishes descriptive articles, interpretive essays, pictures, original graphics, and other kinds of items. All items are published Open Access (OA), so you can view this site for free, and you may freely reuse its contents by following the Creative Commons 3.0 license ^[2]. The contents receive rigorous peer, scholarly, and editorial review, especially checking facts, so the content is trustworthy. The encyclopedia is registered and indexed as ISSN: 1940-5030. Funded by the US National Science Foundation ^[3] and by Arizona State University (ASU) ^[4], the *Embryo Project Encyclopedia* has been digitally published since 2007.

The encyclopedia is the primary output of a team of researchers called the Embryo Project ^[5], which exists at ASU and is administered by the Center for Biology and Society ^[6] in the School of Life Sciences ^[7]. Please contact us ^[8] with questions or comments, follow our Facebook ^[9] and Twitter ^[10] accounts, and continue to use and share the encyclopedia as it grows.

Intended Audience

The *Embryo Project Encyclopedia* aims for a wide public audience. The core audience includes anyone with an interest in developmental biology or reproductive biology and has at least 9 to 16 years of formal education. But the publication's content is important for many different audiences, so the encyclopedia aims for an inclusive, rather than an exclusive, audience.

Potential readers could include at least:

- Journalists looking for biographical information about scientists ^[11].

- Voters looking for information about laws that influence ^[12] reproductive medicine.
- Students looking for help understanding scientific theories ^[13].
- Scholars looking for accessible and historical introductions ^[14] to topics they study.
- History teachers looking for class materials about how science and society intersect ^[15].

The Need for the *Encyclopedia*

In the twenty-first century, people must increasingly interact with topics from developmental and reproductive biology. Those topics range at least from stem cells to cloning, from gene disorders to umbilical cord banks, and from fetal development to genetic engineering.

While people from all walks of life must increasingly interact with those scientific topics, there are few venues that provide key features that help people better understand those topics. Those features include that the venue is dedicated to developmental and reproductive biology, that it explains the science without oversimplifying it, that it is trustworthy, that the venue is free to use, and that it contextualizes those topics in their historical and social contexts.

The *Embryo Project Encyclopedia* provides one venue that has all of those features.

Our Aims and Approach

We aim to help our readers learn about often complex topics in developmental and reproductive biology. We also aim to help our readers better understand science not just as a collection of accumulated facts, but as a human endeavor that evolves over time. We further aim to tell stories that are often neglected in the history of science.

To achieve those aims, most of our contents tell historical stories. Those stories show scientists as people, theories and concepts as things with histories, and the trial and error of experiments. Our historical narratives enable readers to see how researchers identify and pursue research questions and problems. They also help readers learn how those researchers collect data, use that data to test general claims, revise those claims when they're disconfirmed, and use them when they're confirmed. Furthermore, the narratives we publish show how other human endeavors, especially the law, impact science and vice versa. Finally, each narrative has a list of sources, and we strive to link to as many reputable OA sources as possible. By doing so, our readers can check the veracity of our stories for themselves, and in doing so, partake in one aspect of scientific reasoning: questioning authorities.

History has several uses. It helps us learn where ideas and concepts come from, how past people responded to issues and questions similar to the ones we face today, and how historical views and concepts constrain our current questions and ideas. History, when done well, provides us a tool to understand the past and to mold the future.

Editing Details

One of the strengths of the *Embryo Project Encyclopedia*, unlike some internet resources, is that its contents pass rigorous peer, professional, and editorial review. The review process for encyclopedia articles [16] differs from that of Embryo Project Essays [17].

As contributors write their encyclopedia articles, each article receives several rounds of comments from the author's writing peers, Embryo Project editors, science historians, and scientists. For each article submitted for publication, the Embryo Project editors meet to review the article and to decide whether or not to conditionally accept it. Any conditionally accepted article then receives an editor who verifies each statement of fact in the article. Articles that fail such verification aren't published. Finally, a managing editor reviews all articles prior to publication to ensure that they are mutually consistent in style, tone, accuracy, and disinterestedness. An article is only published [16] once it has passed peer, scholarly, and editorial review.

Scholars who contribute Embryo Project Essays [17] submit their article to professional peer review, as is done for scholarly journals. The *Embryo Project Encyclopedia* publishes only those essays that pass such review.

Technical Details

The *Embryo Project Encyclopedia* is Open Access (OA) [2], and all the technologies that make it possible are also OA. The website interface is a customized design built with a Drupal content management system [18]. The website designer is Longsight Inc. [19], which worked with researchers at the Marine Biological Laboratory (MBL) [20] and at Arizona State University (ASU) [4] to build the site.

Content for encyclopedia's website is stored in a digital repository, called the History and Philosophy of Science (HPS) Repository [21], which is a DSpace repository [22] customized by Longsight. The repository resides on ASU servers. The *Embryo Project Encyclopedia* was the first project to store its objects in the HPS Repository, which now also holds data for the MBL History Project [23] for several other projects.

The digital objects displayed in the encyclopedia, like all other objects in the HPS Repository, follow the Dublin Core metadata standards [24].

The current website is the third iteration of the *Embryo Project Encyclopedia* since 2007. Previous versions of the website used a customized Fedora repository [25]. Previous websites were designed by ASU's School of Life Sciences Visualization Lab [26], which also designed the embryo brand for the Embryo Project.

- [Contact Us](#)

- The Embryo Project at Arizona State University, 1711 South Rural Road, Tempe
Arizona 85287, United States

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Links:

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