

Anne Laura Dorinthea McLaren (1927-2007) ^[1]

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Anne Laura Dorinthea McLaren was a developmental biologist known for her work with [embryology](#) ^[5] in the twentieth century. McLaren was the first researcher to grow [mouse](#) ^[6] embryos outside of the [womb](#) ^[7]. She experimented by culturing [mouse](#) ^[6] eggs and successfully developing them into embryos, leading to advancements with [in vitro](#) ^[8] [fertilization](#) ^[9].

McLaren was born in London, England, on 26 April 1927 to Christabel McNaughten and Henry Duncan McLaren, 2nd Baron Aberconway, who was a politician and industrialist. Growing up, McLaren wanted to pursue an education in English literature, but instead entered Lady Margaret Hall, Oxford, with a scholarship to study zoology. During her undergraduate work, McLaren became intrigued with genetics, in part due to her tutor, [Edmund Brisco Ford](#) ^[10]. After graduating with a honors degree in zoology, she continued her research with geneticist John Burdon Sanderson Haldane at [University College London](#) ^[11] on mite infestation in [Drosophila](#) ^[12]. McLaren continued to pursue her education and in 1952 graduated with a PhD from Oxford University where she studied mice neurotropic viruses with professor [Kingsley Sanders](#) ^[13], furthering her career in genetics.

That same year, McLaren wed [Donald Michie](#) ^[14], who also studied and obtained his PhD at Oxford University. They continued working on the genetics of mice with [Peter Medawar](#) ^[15] at [University College London](#) ^[11] and the Royal Veterinary College (RVC) together. At RVC, McLaren worked with researcher [John Biggers](#) ^[16] on the cultivation of [mouse](#) ^[6] embryos, leading to a major technical advance in the history of [embryology](#) ^[5]. In 1958, McLaren and Biggers were the first to culture a [mouse](#) ^[6] embryo in the early stages for twenty-four hours, outside of the [womb](#) ^[7]. They worked together to grow [mouse](#) ^[6] eggs in already cultured [mouse](#) ^[6] tissue, a liquid that contains the same nutrients and acts as the way the [mouse](#) ^[6] [uterus](#) ^[17] would act, for a twenty-four hour period. They removed [mouse](#) ^[6] eggs from the [fallopian tubes](#) ^[18] soon after [fertilization](#) ^[9] and placed them in tissue culture, where the eggs grew into blastocysts. The blastocysts were then placed in the uterine lumen of the [mouse](#) ^[6], which went on to have a successful [pregnancy](#) ^[19] and delivery. McLaren's and Biggers' experiments proved that the environment for growing an embryo is critical to its wellbeing. (They also experimented with embryos by transferring blastocysts directly from one mother to another, again leading to a successful birth.) Their culture techniques became the basis for [in vitro](#) ^[8] [fertilization](#) ^[9] (IVF). McLaren's and Biggers' research has improved fertility treatments and the reproductive health of [humans](#) ^[20]>

McLaren completed her embryo cultivation research in 1959, the same year that she and her husband divorced. After the divorce, McLaren continued her career with research in genetics and fertility of mice at the [Institute of Animal Genetics](#) ^[21] in Edinburgh, UK. Over the next fifteen years she focused on the progression of [birth control](#) ^[22] and embryonic cell research, mainly in the earliest development stages. In 1974, McLaren left the institute and moved back to London to work as the director of the [Medical Research Council](#) ^[23] Mammalian

Development Unit. This is where she emphasized the importance of first understanding the primordial cell, which is the embryonic cells in the beginning stage of growth, before beginning research on later stages of the developing embryo.

While working, McLaren was also involved in the many moral discussions about embryo research, leading her to help construct the UK's [Human Fertilization and Embryology Act of 1990](#) [24]. This act supports the option of [abortion](#) [25] and sets guidelines for [in vitro](#) [8] [fertilization](#) [9] and assisted reproduction. It provides policy [regulation](#) [26] for embryo research and how cells are acquired, stored, and researched with. Due to her work with the establishment of this act, [The Royal Society of London](#) [27] honored McLaren by appointing her as its secretary in 1991. The Royal Society recognizes scientists who have contributed to the benefit of the general public through their research.

After authoring 300 papers over the course of her career, McLaren retired as the director of MRC Mammalian Development in order to travel across the globe to educate other scientists in underprivileged societies as secretary of the Royal Society. Although she retired from her previous work, McLaren continued her research on [stem cells](#) [28] at [Gurdon Institute](#) [29] in Cambridge, while acting as chief research associate in the cancer department.

Throughout her life, McLaren took part in scientific advancements with her research with developmental biology. Her experiments with embryos and breakthrough work with [in vitro](#) [8] [fertilization](#) [9] led her to become the first female officer in the United Kingdom's Royal Society. After years of dedication to science, McLaren was also elected president of The British Association for Advancement of Science, promoting science to the general public from 1993 to 1994. In 2002, McLaren was awarded the Japan Prize for her work with mammalian [embryology](#) [5]. Her experimental results and research are still being used today to help further research in the field of [embryology](#) [5]. On 7 July 2007, McLaren died along with her ex-husband Michie in a vehicle accident.

Sources

1. The Royal Society. "What is The Royal Society?" The Royal Society. <http://royalsociety.org/page.asp?id=1020> [30] (Accessed September 12, 2009).
2. "Professor Dame [Anne McLaren](#) [31]." *Telegraph*, July 9, 2007, Obituaries section, United Kingdom edition.
3. Weir, Kristen. "Anne McLaren Dies," *The Scientist*, July 11, 2007.

Anne Laura Dorinthea McLaren was a developmental biologist known for her work with embryology in the twentieth century. McLaren was the first researcher to grow mouse embryos outside of the womb. She experimented by culturing mouse eggs and successfully developing them into embryos, leading to advancements with in vitro fertilization.

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