

[Ross Granville Harrison \(1870-1959\)](#) ^[1]

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A pioneer in experimental [embryology](#) ^[5], [Ross Granville Harrison](#) ^[4] made numerous discoveries that advanced biology. One of the most significant was his adaptation of the [hanging drop method](#) ^[6] from bacteriology to carry out the first tissue culture. This method allowed for further studies in [embryology](#) ^[5] as well as experimental improvements in oncology, virology, genetics, and a number of other fields. Prior to Harrison's innovation, a number of scientists, including Julius Arnold, [Gustav Born](#) ^[7], [Leo Loeb](#) ^[8], and Gottlieb Haberlandt, had attempted to grow tissues in isolation *in vitro* ^[9] and *in vivo* ^[10] but with much less success than Harrison. In addition, Harrison contributed to the understanding of [organization](#) ^[11] and [differentiation](#) ^[12].

Harrison was born on 13 January 1870 in Germantown, Pennsylvania, to Catherine Barrington Diggs and Samuel Harrison, a mechanical engineer. In 1886 Harrison entered [Johns Hopkins University](#) ^[13] as an undergraduate and completed his AB degree in three years. In 1889 Harrison entered [Johns Hopkins University](#) ^[13] as a graduate student and worked under [William Keith Brooks](#) ^[14] until receiving a PhD in zoology in 1894. In the summer of 1890 he was an assistant with the US Fish Commission at [Woods Hole](#) ^[15] studying the [embryology](#) ^[5] of the [oyster](#) ^[16]. There he worked and formed lasting friendships with [Edwin Grant Conklin](#) ^[17] and many others and he returned there every year starting in 1908 as a Trustee of the [Marine Biological Laboratory](#) ^[18]. After completing his degree at Johns Hopkins, Harrison studied medicine from 1892–1899 at the [University of Bonn](#) ^[19] and received his MD in 1899, although he never practiced medicine. From 1894–1895 he lectured on [morphology](#) ^[20] at [Bryn Mawr College](#) ^[21], substituting for [Thomas Hunt Morgan](#) ^[22]. In 1896 Harrison married Ida Lange in Altona, Germany. The couple had five children: Richard, Elizabeth, Dorothea, Eleanor, and Ross. This same year, Harrison returned to Johns Hopkins as an anatomy instructor at the medical school. In 1897 Harrison's research led him to adopt Born's method of embryonic [grafting](#) ^[23] in order to study growth and regeneration in frogs. Harrison was promoted to associate professor in 1899 and remained at Johns Hopkins until 1907. During his professorship, Harrison worked with [Franklin Paine Mall](#) ^[24], Florence R. Sabin, [Lewellys Barker](#) ^[25], and [Warren Lewis](#) ^[26], among others.

In 1907 Harrison moved his family to New Haven, Connecticut, where from 1907–1938 he was a professor and head of the department of zoology at [Yale University](#) ^[27]. During this time, he became a Sterling Professor and the first Bronson Professor of Comparative Anatomy at Yale. While at Yale, Harrison continued to improve the [hanging drop method](#) ^[6] for culturing tissue that he had first used at Johns Hopkins with great success. Throughout his research, Harrison focused on the development of [amphibians](#) ^[28], particularly by analyzing their embryonic development, most notably that of the limbs and inner ear.

Throughout his career, Harrison held a number of administrative positions, including managing editor and founder of the [Journal of Experimental Zoology](#) ^[29] from 1903–1946 and chairman of the [National Research Council](#) ^[30] from 1938–1946. He was elected to both the [National Academy of Sciences](#) ^[31] and the [American Philosophical Society](#) ^[32] in 1913. Harrison died on 30 September 1959 in New Haven, Connecticut, at the age of 89, leaving behind a legacy of scientific discovery and leadership.