Ambrosius Arnold Willem Hubrecht created the Institut International d'Embryologie (International Institute of Embryology) in Utrecht, The Netherlands, in 1911. Hubrecht had championed Charles Darwin's work in the late nineteenth century, and Hubrecht collected specimens of embryos from around the world to demonstrate evolutionary connections between animals. Near the end of his life Hubrecht tried to establish an international community of embryologists through the Institut, but World War I disrupted his visions. In 1916, the year after Hubrecht's death, the Dutch scientific community made his collection available to scientists across the world, and thereby furthered Hubrecht's mission of developing an international research network. The Dutch Royal Academy refounded the Institut as the Hubrecht Laboratory to honor its creator.

The Hubrecht Laboratory realized Hubrecht's goal to create an international institute, and for the first thirty years of its existence, director Daniel De Lange loaned out the institute's collections of comparative embryological specimens to interested researchers. In 1947 Chris P. Raven, professor at the University of Utrecht and the newly named director of the Hubrecht Laboratory, developed a new service to help support international research in embryology. He created the GEIS, which he modeled after the Drosophila Information Service (DIS), an annual report created by Calvin Bridges and Milislav Demerec in the US in 1934. The DIS catalogued research on Drosophila melanogaster, recording all scientists and institutions involved with these fruit flies. The GEIS aimed to record the same information for the entire field of embryology. Financially, GEIS relied on subscribers and contributions from institutions such as the International Union of Biological Sciences, the Organization of Pure Scientific Research in the Netherlands, and later the General Embryological Information Service Foundation.

Before 1947, the Hubrecht Laboratory focused on establishing international collaboration in the field of embryology. However, when Raven took over, he and his newly appointed deputy director, Nieuwkoop, expanded the services of the laboratory beyond providing access to embryology collections. In particular, experimental research had become a prominent part of embryology, but the laboratory's collections were more appropriate for descriptive and comparative purposes. To involve the organization in experimental science without conducting research, Raven and Nieuwkoop decided that the Laboratory could act as an information hub, collecting and disseminating information about experiments. This information would include who was conducting embryology research, the focus of their research, and where it was occurring. At that time, besides talking to and writing each other, there were few means for researchers to find out what others were researching across the globe. Instead, they had to wait until other scientists published their results to learn of new developments, a method of information transfer that many felt caused too much unnecessary overlap between experiments. Furthermore, Europeans in the late 1940s were rebuilding their nations in the aftermath of World War II. Many scientific communities had fragmented during the war as scientists fled occupied territories and as allied countries funded war-related projects rather than basic biological research. Raven and Nieuwkoop envisioned a catalog that would help rebuild the international embryology community through the sharing of information, and that would help create new collaborations between individuals.

Beginning in 1948, the GEIS editors sent out an annual survey to every known embryologist and related scientific institution. The form requested the names and addresses of the embryologists, information on their home institutions, and the details of their current research projects, not including recently published research. The GEIS editors compiled the returned information and created a catalog of embryology, which institutions and individual researchers paid yearly dues to receive. In 1949, the first
by the early 1980s, when the Hubrecht Laboratory stopped the publication of the *GEIS*, there was an international community of developmental biologists, and biologists studied embryology in scientific institutions around the world. As researchers communicated with each other in new ways and as the number of scientific journals grew, they increasingly used the *GEIS*, a trend that reflected the rapidly diminishing subscriptions in the last few years of the *GEIS*. The Hubrecht Laboratory ceased publishing the report in 1981 because there were too few subscribers to support the service.
Sources


The General Embryological Information Service (GEIS) was an annual report published by the Hubrecht Laboratory in Utrecht, The Netherlands from 1949 to 1981 that disseminated contemporary research information to developmental biologists. The purpose of the annual report was to catalog the names, addresses, and associated research of every developmental biologist in the world. Pieter Nieuwkoop edited each issue from 1949 until 1964, when Job Faber began assisting Nieuwkoop. Bert Z. Salome joined the editing team in 1968 before Nieuwkoop ceased editing duties in 1971. Faber and Salome remained the editors from 1971 until the periodical's final year of circulation in 1981. The Hubrecht Laboratory, a national laboratory created to house a large collection of comparative embryological materials and loan them to interested researchers, sponsored the publication after World War II to facilitate international collaboration and prevent unnecessary duplication of work. The catalog of researchers and the scientific topics grew in number and variety as the field of developmental biology changed during the publication's thirty-two year history.

Subject

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Publisher

Arizona State University. School of Life Sciences. Center for Biology and Society. Embryo Project Encyclopedia.

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Format

Articles \[38\]

Last Modified

Wednesday, July 4, 2018 - 04:40

DC Date Accessioned

Monday, March 18, 2013 - 23:34

DC Date Available

Monday, March 18, 2013 - 23:34

DC Date Created

2013-01-03

DC Date Created Standard

Thursday, January 3, 2013 - 07:00

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