

# iconoclasm in science

Both scientists and their ideas have often been described as "heretical," "before their time," or "rebellious" against a status quo. However, it is impossible to attach a philosophically and historically precise definition to these terms: since Thomas Kuhn's *The Structure of Scientific Revolutions* (1962) historians, philosophers, and sociologists of science accept that novelty and sweeping reassessments are a structural part of the history of science and scientific knowledge. It is therefore hard to pin down what a "heretic" in science is, despite common usage of the term, because a dissenting scientist who defies current conventional wisdom of their colleagues can become a standard-bearer of a new consensus, (for example, [Howard Temin](#)) or permanently consigned to the ranks of conspiracy theorists and pseudoscientists (for example, [HIV/AIDS denialist Peter Duesberg](#).)

The philosophers of science Oren Harman and Michael Dietrich therefore suggest using the term "iconoclast" to describe scientists who habitually seek novelty or chafe at scientists' social conventions, and "iconoclasm" to describe attempts to change the "iconic" theories and assumptions that form the heart of many scientific disciplines. In this sense, Temin's "iconoclastic" theory of [reverse transcription](#) destroyed the "icon" of the [Central Dogma](#) that had been so essential in the early development of molecular biology (see [1.5 John Coffin — The Origin of Molecular Retrovirology](#))

For a fuller discussion see Oren Solomon Harman and Michael R. Dietrich, eds., *Rebels, Mavericks, and Heretics in Biology* (New Haven: Yale University Press, 2008).

## Found 6 search result(s) for iconoclasm OR heretic OR heresy.

Page: [1.5 John Coffin — The Origin of Molecular Retrovirology \(HIV/AIDS Research: Its History & Future Meeting\)](#)

... I think that's entirely possible. I think there's still room for **heresy** in science. I think there's a need for **heresy** in science to be honest with you. You have to pick your **heretic** though. A lot of guys who are talking heresy ...

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Page: [2.6 Tony Fauci — 35 Years of HIV/AIDS: Science and Policy \(HIV/AIDS Research: Its History & Future Meeting\)](#)

... missed opportunities with opportunities to confessions in the '80s. Given all that, the importance of both scientific **heresy** and of good science, well, what would you have done different over ...

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Page: [1.6 Harold Varmus — Animal Retroviruses and Cancer Research \(HIV/AIDS Research: Its History & Future Meeting\)](#)

... my contemporaries, I was drawn to two things, the possibility of a 00:01:30 **heretical** life cycle, John used that word several times, and the capacity of these viruses to cause ...

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Page: [4.1 Ronald Desrosiers — The Origin of SIVmac: Non-human Primate Models for HIV \(HIV/AIDS Research: Its History & Future Meeting\)](#)

... applications, 00:15:00 most of which were listed by Jeff Lifson. **#iconoclasm** in science At the time, however, of this publication, the viral etiology of AIDS was being questioned—Peter ...

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Page: [3.5 Daria Hazuda: Discovery and Development of Integrase Inhibitors \(HIV/AIDS Research: Its History & Future Meeting\)](#)

... Engelman, Alan N. <https://libwiki.cshl.edu/confluence/pages/viewpage.action?pagelId=15533224> freezer

<https://libwiki.cshl.edu/confluence/display/AT/freezer> Grandgenett, Duane P.

<https://libwiki.cshl.edu/confluence/pages/viewpage.action?pagelId=15533234> **iconoclasm** in science

<https://libwiki.cshl.edu/confluence/display/AT/iconoclasminscience> implants, drug delivery implants, implantable antiretroviral therapy

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Page: [5.3 Michael Malim — Discovery of APOBEC Restriction \(HIV/AIDS Research: Its History & Future Meeting\)](#)

... health care <https://libwiki.cshl.edu/confluence/display/AT/Historyandsociologyofscience%2Cmedicine%2Candhealthcare> Human Genome

Project (HGP, 1990–2003) <https://libwiki.cshl.edu/confluence/pages/viewpage.action?pagelId=15533924> **iconoclasm** in science

<https://libwiki.cshl.edu/confluence/display/AT/iconoclasminscience> Imperial College London

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