



# Life Atomic: A History of Radioisotopes in Science and Medicine (Synthesis)

By Angela N. H. Creager

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After World War II, the US Atomic Energy Commission (AEC) began mass-producing radioisotopes, sending out nearly 64,000 shipments of radioactive materials to scientists and physicians by 1955. Even as the atomic bomb became the focus of Cold War anxiety, radioisotopes represented the government's efforts to harness the power of the atom for peace—advancing medicine, domestic energy, and foreign relations.

In *Life Atomic*, Angela N. H. Creager tells the story of how these radioisotopes, which were simultaneously scientific tools and political icons, transformed biomedicine and ecology. Government-produced radioisotopes provided physicians with new tools for diagnosis and therapy, specifically cancer therapy, and enabled biologists to trace molecular transformations. Yet the government's attempt to present radioisotopes as marvelous dividends of the atomic age was undercut in the 1950s by the fallout debates, as scientists and citizens recognized the hazards of low-level radiation. Creager reveals that growing consciousness of the danger of radioactivity did not reduce the demand for radioisotopes at hospitals and laboratories, but it did change their popular representation from a therapeutic agent to an environmental poison. She then demonstrates how, by the late twentieth century, public fear of radioactivity overshadowed any appreciation of the positive consequences of the AEC's provision of radioisotopes for research and medicine.

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### Editorial Review

#### Review

"A striking portrait of the emergence of Cold War science. The book contributes to a growing historical literature that has begun to reconfigure our understanding of the period and its enduring legacies. . . . Creager's deft attention to the ironies that have accompanied efforts to harness the atom is history of science at its best: a crystal clear portrait of just how untidy the impacts of science can be."

(Joanna Radin *Science*)

"The Manhattan Project's impact reverberated beyond the atomic bomb, reveals Angela Creager in this lucid scientific history. . . . Creager deploys radioisotopes as 'historical tracers' to explore shifts in medicine, perceptions of cancer risk, and the porous 'civilian-military divide.'"

(*Nature*)

"For most laypeople, atomic science in the Cold War means arms races, bomb shelters, and nuclear fallout. In *Life Atomic*, Creager offers a new perspective by exploring a different side of radiation science: the use of radioisotopes in laboratory science and medical research. During the early days of the Cold War, radioisotopes were hailed as a peaceful use of atomic science, a way to put fission products to use for everything from curing cancer to improving foreign relations. However, as public perception of radioactivity shifted, radioisotopes came to be seen as a potential poison. Creager deals deftly with atomic science, cultural debates, and Cold War politics to give us a fresh look at the atom's fraught 20th-century history."

(*Physics Today*)

"A thorough and fascinating account of the challenges that the US Atomic Energy Commission faced in the course of trying to remake nuclear radiation into a scientific and medical tool, as well as a profitable product. . . . *Life Atomic* is an enjoyable and important book, which should top the reading list of any scholar interested in the development of postwar science and medicine."

(Andrew J. Hogan *Metascience*)

"Historians of the physical and biological sciences will find this book indispensable, but Creager's thorough explication of both the science and the institutional context in which it was pursued makes this work accessible to and useful for audiences interested in postwar nuclear culture writ large. Fact-dense but not pedantic, and argumentatively nuanced without being overly subtle, *Life Atomic* is a first-rate work in the history of science."

(*American Historical Review*)

"Radioisotopes are a cornerstone of technology, facilitating basic research and augmenting medical treatment. As a biochemist familiar with such isotopes, decorated historian Creager is well qualified to examine the expansion of radioactive power. Her *Life Atomic* is a strikingly complete narrative of the social and scientific factors sparking such expansion in the peaceful realm. . . . Students and seasoned professionals alike will gain significant insight into the foundations of this central technology, making it a critical resource for academic and professional libraries. Essential."

(B. D. Spiegelberg, *Rider University Choice*)

"Enjoyable not only for those 'in the trade' but for all scientific and health professionals."

(*Chemistry World*)

"Novel and engaging. . . . With its dedication to tracing the diverse, recent, and now mostly forgotten trajectories of radioisotopes in American biomedicine, *Life Atomic* abounds with historicist insights."  
(Kenton Kroker *Isis*)

"Angela Creager's deeply researched and elegantly written new book is a must-read account of the history of science in twentieth-century America. . . . Not only is it a historiographically important and meticulously crafted work based on exhaustive research, but it's also a great set of stories. The pages of *Life Atomic* are full of guinea pigs, scientific vaudeville, and stories and characters from many different fields of the modern life sciences, expertly weaving them together into a compelling set of arguments."

(Carla Nappi *New Books in Science, Technology, and Society*)

"This is an excellent book on a truly important subject. It is impossible to summarize all the topics studied by Creager in her rich and carefully researched book, or even to enumerate all the book's contributions to the history of science, technology and medicine."

(*History and Philosophy of the Life Sciences*)

"It would be hard to ask for a better history of radioisotopes than Creager's *Life Atomic*."

(*FASEB Journal*)

"Creager's *Life Atomic* will serve as a benchmark for outstanding scholarship and as an essential point of reference on the use of radioisotopes in science and medicine for many years to come."

(*Science Direct*)

"Exhaustively documented and sharply written, with no place for anecdote, *Life Atomic* provides a coherent narrative about the industrialisation, regulation, and scientific and medical impact of radioisotopes in the United States during the Cold War."

(Néstor Herran, Université Pierre et Marie Curie, Paris *AMBIX*)

"A landmark achievement. . . . Well researched and masterfully narrated, *Life Atomic* is a must-read book for anyone who is interested in the instrument-driven development of life sciences following the WWII."  
(Paul J. J. M. Bakker, Radboud University Nijmegen, The Netherlands. *Journal of the History of Medicine*)

"In Creager's hands, we see the full scope of biomedical research from the perspective of the radioisotopes that flowed out of nuclear production facilities and through an intricate network of laboratories, environments and living bodies. *Life Atomic* is not a call for more histories of tracers – it is a call for a new kind of history, one framed less in terms drawn from without than in terms unearthed from within. Though Creager is too humble to admit it, her book suggests a new methodology for the history of science and medicine, if not history itself. If we adopt it, historical scholarship might become more unified and more pluralistic at once. Creager has given us more than a new history. *Life Atomic* models a new way to write such histories. It should be read by anyone interested in understanding the past on its own terms."

(*Medical History*)

"A fascinating portrait of the use and meaning of radioisotopes in twentieth-century science and medicine, Angela N. H. Creager's *Life Atomic* is serious, high-quality scholarship that contributes to our understanding of science over the last century. This long-awaited volume justifies the wait."

(M. Susan Lindee, University of Pennsylvania)

“*Life Atomic* is the first comprehensive history of radioactive tracing, a key research technology without which a science such as molecular biology would not have come into being. Through this technology, the life sciences and medicine came into deep resonance with the atomic Cold War era. Angela N. H. Creager beautifully unfolds this web before our eyes, and does so by making use of a rich variety of archival sources.”

(Hans-Jörg Rheinberger, Max Planck Institute for the History of Science)

“Angela N. H. Creager’s book is breathtaking in scope, a lucid, original account of how radioisotopes came to suffuse and, in many ways, transform research in fields ranging from the experimental life sciences to biomedicine and ecology. It evenhandedly reveals the close coupling between their exploitation and the dynamics of the Cold War, illuminating how they served at once the purposes of health and security, pressing against the ethical boundaries of research with human subjects while helping to tie together the laboratory and the clinic. In all, a masterful work of historical scholarship.”

(Daniel J. Kevles, Yale University)

#### About the Author

**Angela N. H. Creager** is the Thomas M. Siebel Professor in the History of Science at Princeton University. She is the author of *The Life of a Virus* and coeditor of *Feminism in Twentieth-Century Science, Technology, and Medicine*, both published by the University of Chicago Press. She lives in Princeton, NJ.

### Users Review

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##### Ella Cook:

Why don't make it to be your habit? Right now, try to prepare your time to do the important act, like looking for your favorite reserve and reading a guide. Beside you can solve your trouble; you can add your knowledge by the reserve entitled *Life Atomic: A History of Radioisotopes in Science and Medicine* (Synthesis). Try to face the book *Life Atomic: A History of Radioisotopes in Science and Medicine* (Synthesis) as your friend. It means that it can to become your friend when you sense alone and beside that course make you smarter than ever before. Yeah, it is very fortuned to suit your needs. The book makes you a lot more confidence because you can know anything by the book. So , let's make new experience as well as knowledge with this book.

##### Melinda Gregory:

This book untitled *Life Atomic: A History of Radioisotopes in Science and Medicine* (Synthesis) to be one of several books which best seller in this year, honestly, that is because when you read this publication you can get a lot of benefit onto it. You will easily to buy this kind of book in the book retail outlet or you can order it via online. The publisher with this book sells the e-book too. It makes you more easily to read this book, since you can read this book in your Smartphone. So there is no reason to you to past this publication from your list.

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**Katherine Clark:**

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