

Nazwisko EILENBERG

Imiona SAMUEL

Pseudonim .....

Z domu .....

Data urodzenia 30. 09. 1913 Miejscowość, kraj Warszawa, Polska

Data śmierci 30. 01. 1998 Miejscowość, kraj New York, Stany Zjednoczone

Lat życia .....

Adres cmentarza .....

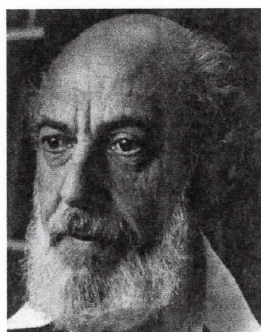
Źródła: Inteligencja Polska w Świecie, PAU, 2018

Zawód ..... matematyk ..... Tytuły naukowe ..... doktor .....

Rodzaj wojska ..... Stopień wojskowy .....

Odznaczenia .....

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.....



Samuel Eilenberg (1913 Warszawa – 1998 Nowy Jork) był matematykiem, absolwentem Uniwersytetu Warszawskiego i przedstawicielem warszawskiej szkoły matematycznej. Nie widział dla siebie możliwości odpowiedniego zatrudnienia w Polsce i w 1939 r. wyjechał do USA. Miał wybitne osiągnięcia w topologii algebraicznej i algebrze homologicznej, wniósł także istotny wkład do teorii automatów. Był członkiem Polskiej Akademii Nauk.

# Samuel Eilenberg

**Samuel Eilenberg** (September 30, 1913 – January 30, 1998) was a Polish-born American mathematician who co-founded category theory with Saunders Mac Lane.

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## Early life and education

He was born in Warsaw, Kingdom of Poland to a Jewish family and died in New York City, United States, where he had spent much of his career as a professor at Columbia University.

He earned his Ph.D. from University of Warsaw in 1936. His thesis advisor was Karol Borsuk.

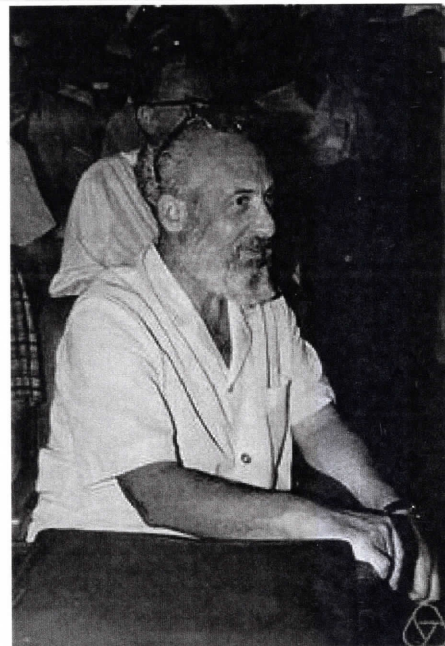
## Career

Eilenberg's main body of work was in algebraic topology. He worked on the axiomatic treatment of homology theory with Norman Steenrod (whose names the Eilenberg–Steenrod axioms bear), and on homological algebra with Saunders Mac Lane. In the process, Eilenberg and Mac Lane created category theory.

Eilenberg was a member of Bourbaki and, with Henri Cartan, wrote the 1956 book *Homological Algebra*,<sup>[1]</sup>.

Later in life he worked mainly in pure category theory, being one of the founders of the field. The Eilenberg swindle (or *telescope*) is a construction applying the telescoping cancellation idea to projective modules.

### Samuel Eilenberg



Samuel Eilenberg (1970)

|                          |                                                                    |
|--------------------------|--------------------------------------------------------------------|
| <b>Born</b>              | September 30, 1913 <div>Warsaw, Poland, Russian Empire</div>       |
| <b>Died</b>              | January 30, 1998 (aged 84) <div>New York City, United States</div> |
| <b>Nationality</b>       | Polish, American                                                   |
| <b>Citizenship</b>       | American                                                           |
| <b>Alma mater</b>        | University of Warsaw                                               |
| <b>Known for</b>         | Eilenberg–Steenrod axioms <div>Eilenberg swindle</div>             |
| <b>Awards</b>            | Wolf Prize (1986) <div>Leroy P. Steele Prize (1987)</div>          |
| <b>Scientific career</b> |                                                                    |
| <b>Fields</b>            | Mathematics                                                        |
| <b>Institutions</b>      | Columbia University                                                |

Eilenberg contributed to automata theory and algebraic automata theory. In particular, he introduced a model of computation called X-machine and a new prime decomposition algorithm for finite state machines in the vein of Krohn–Rhodes theory.

## Art collection

Eilenberg was also a prominent collector of Asian art. His collection mainly consisted of small sculptures and other artifacts from India, Indonesia, Nepal, Thailand, Cambodia, Sri Lanka and Central Asia. In 1991-1992, the Metropolitan Museum of Art in New York staged an exhibition from more than 400 items that Eilenberg had donated to the museum, entitled *The Lotus Transcendent: Indian and Southeast Asian Art From the Samuel Eilenberg Collection*.<sup>[2]</sup> In reciprocity, the Metropolitan Museum of Art donated substantially to the endowment of the Samuel Eilenberg Visiting Professorship in Mathematics at Columbia University.<sup>[3]</sup>

### Doctoral advisor

Kazimierz Kuratowski  
Karol Borsuk

### Doctoral students

Jonathan Beck  
David Buchsbaum  
Martin Golumbic  
Daniel Kan  
William Lawvere  
Ramaiyengar Sridharan  
Myles Tierney

## Selected publications

- Eilenberg, Samuel (1974). *Automata, Languages and Machines, Volume A*. ISBN 0-12-234001-9.
- Eilenberg, Samuel (1976). *Automata, Languages and Machines, Volume B*. ISBN 0-12-234002-7.
- Eilenberg, Samuel; Ganea, Tudor (1957). "On the Lusternik-Schnirelmann category of abstract groups". *Annals of Mathematics*. 2nd Series. **65** (3): 517–518. JSTOR 1970062 (<https://www.jstor.org/stable/1970062>). MR 0085510 (<https://www.ams.org/mathscinet-getitem?mr=0085510>).
- Eilenberg, Samuel; Mac Lane, Saunders (1945). "Relations between homology and homotopy groups of spaces". *Annals of Mathematics*. **46**: 480–509. doi:10.2307/1969165 (<https://doi.org/10.2307/1969165>).
- Eilenberg, Samuel; Mac Lane, Saunders (1950). "Relations between homology and homotopy groups of spaces. II". *Annals of Mathematics*. **51**: 514–533. doi:10.2307/1969365 (<https://doi.org/10.2307/1969365>).
- Eilenberg, Samuel; Moore, John C. (1962), "Limits and spectral sequences", *Topology*, **1** (1): 1–23, doi:10.1016/0040-9383(62)90093-9 ([https://doi.org/10.1016/0040-9383\(62\)90093-9](https://doi.org/10.1016/0040-9383(62)90093-9)), ISSN 0040-9383 (<https://www.worldcat.org/issn/0040-9383>)
- Eilenberg, Samuel; Niven, Ivan (1944). "The "fundamental theorem of algebra" for quaternions". *Bulletin of the American Mathematical Society*. **50** (4): 246–248. doi:10.1090/s0002-9904-1944-08125-1 (<https://doi.org/10.1090/s0002-9904-1944-08125-1>). MR 0009588 (<https://www.ams.org/mathscinet-getitem?mr=0009588>).
- Eilenberg, Samuel; Steenrod, Norman E. (1945). "Axiomatic approach to homology theory" (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1078770>). *Proceedings of the National Academy of Sciences of the United States of America*. **31** (4): 117–120. doi:10.1073/pnas.31.4.117 (<https://doi.org/10.1073/pnas.31.4.117>). PMC 1078770 (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1078770>). PMID 16578143 (<https://www.ncbi.nlm.nih.gov/pubmed/16578143>).
- Samuel Eilenberg & Norman E. Steenrod (1952), *Foundations of algebraic topology*, Princeton University Press, Princeton, New Jersey. xv+328 pp.<sup>[4]</sup>