

## bio.1 Alonzo Church

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Alonzo Church was born in Washington, DC on June 14, 1903. In early childhood, an air gun incident left Church blind in one eye. He finished preparatory school in Connecticut in 1920 and began his university education at Princeton that same year. He completed his doctoral studies in 1927. After a couple years abroad, Church returned to Princeton. Church was known exceedingly polite and careful. His blackboard writing was immaculate, and he would preserve important papers by carefully covering them in Duco cement (a clear glue). Outside of his academic pursuits, he enjoyed reading science fiction magazines and was not afraid to write to the editors if he spotted any inaccuracies in the writing.



Figure 1: Alonzo Church

Church's academic achievements were great. Together with his students Stephen Kleene and Barkley Rosser, he developed a theory of effective calculability, the lambda calculus, independently of Alan Turing's development of the Turing machine. The two definitions of computability are equivalent, and give rise to what is now known as the *Church–Turing Thesis*, that a function of the natural numbers is effectively computable if and only if it is computable via Turing machine (or lambda calculus). He also proved what is now known as *Church's Theorem*: The decision problem for the validity of first-order formulas is unsolvable.

Church continued his work into old age. In 1967 he left Princeton for UCLA, where he was professor until his retirement in 1990. Church passed away on August 1, 1995 at the age of 92.

**Further Reading** For a brief biography of Church, see [Enderton \(2019\)](#). Church's original writings on the lambda calculus and the Entscheidungsproblem (Church's Thesis) are [Church \(1936a,b\)](#). [Aspray \(1984\)](#) records an interview with Church about the Princeton mathematics community in the 1930s. Church wrote a series of book reviews of the *Journal of Symbolic Logic* from 1936 until 1979. They are all archived on John MacFarlane's website ([MacFarlane, 2015](#)).

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Alonzo Church, p. 1: Portrait of Alonzo Church, undated, photographer unknown. Alonzo Church Papers; 1924–1995, (C0948) Box 60, Folder 3. Manuscripts

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## Bibliography

- Aspray, William. 1984. The Princeton mathematics community in the 1930s: Alonzo Church. URL [http://www.princeton.edu/mudd/finding\\_aids/mathoral/pmc05.htm](http://www.princeton.edu/mudd/finding_aids/mathoral/pmc05.htm). Interview.
- Church, Alonzo. 1936a. A note on the Entscheidungsproblem. *The Journal of Symbolic Logic* 1: 40–41.
- Church, Alonzo. 1936b. An unsolvable problem of elementary number theory. *American Journal of Mathematics* 58: 345–363.
- Enderton, Herbert B. 2019. Alonzo Church: Life and Work. In *The Collected Works of Alonzo Church*, eds. Tyler Burge and Herbert B. Enderton. Cambridge, MA: MIT Press.
- MacFarlane, John. 2015. Alonzo Church’s JSL reviews. URL <http://johnmacfarlane.net/church.html>.