

Bruce Reznick

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Wikipedia: <https://faculty.math.illinois.edu/~reznick/>

Website: [https://en.wikipedia.org/wiki/Bruce\\_Reznick](https://en.wikipedia.org/wiki/Bruce_Reznick)

Born: February 3, 1953

Dr. Bruce Reznick currently serves as a Professor in the Mathematics Department at the University of Illinois at Urbana-Champaign. He obtained his Ph.D. at Stanford University in 1976, advised by Dr. Per Enflo. He previously served as an Assistant Professor of mathematics at Duke University from 1976 to 1979 and a Visiting Scholar at the University of California at Berkeley from 1978 to 1979. He joined the University of Illinois at Urbana-Champaign in 1979 as an Assistant Professor of mathematics, then was promoted to an Associate Professor in 1983. He was then promoted to Professor in the Mathematics Department in 1989 and has served there since.

In 2016, Dr. Reznick was invited to propose questions for the Second Ramanujan Mathematics Contest at the recommendation of Dr. Bruce Berndt of the University of Illinois at Urbana-Champaign. He has since then proposed questions for the Contest each year it has been held. The Ramanujan Mathematics Contest was started in 2014 by Dr. Sattianathan Sangeelee, a physician from Mauritius. Each year that it is held, high school and college students as old as 32 - the age that Ramanujan died - from Mauritius are invited to apply to participate in the Contest, where 100 selected participants compete at the University of Mauritius. Some of the selected questions are inspired by the work of Srinivasa Ramanujan, and the questions are similar to those of the Mathematics Olympiads held in the United States. Additionally, in March 2016, Dr. Reznick was invited to give the Ramanujan Memorial Lecture at the Awards Ceremony of the Second Contest in Mauritius. In October 2021, he was invited to give the Ramanujan Memorial Lecture once again, though it was held virtually. In his talk, he spoke about the legacy of Ramanujan and the importance of his problems in the history of mathematics. He also showed how some of his problems could be solved and went through their solutions. Dr. Reznick shared in this talk how Ramanujan has continued to inspire him and his interest in mathematics.

In July 2020, Dr. Reznick published a paper inspired by a question that Ramanujan sent to Journal of the Indian Mathematical Society in 1913. The problem was: "Show that

$(6x^2 - 4xy + 4y^2)^3 = (3x^2 + 5xy - 5y^2)^3 + (4x^2 - 4xy + 6y^2)^3 + (5x^2 - 5xy - 3y^2)^3$  and find other quadratic expressions satisfying similar relations." In addition to solving this problem, he gave three other sums that satisfied the relations. He also expanded on the problem to show how a sextic can be written as the sum of two cubes, and gave different examples that satisfied those relations.

Written By: Sarah Catovic