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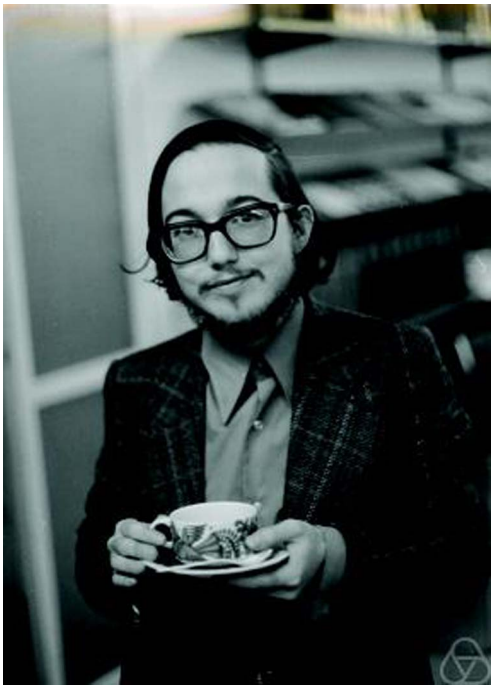
# Preface



Don Zagier is one of the giants of 20th and 21st century mathematics. His technical prowess and extraordinary insight in the world of modular forms have played a central role in the development of mathematics in disparate fields, including number theory, representation theory, arithmetic algebraic geometry, low dimensional topology, and mathematical physics. His enthusiasm for mathematics and his generosity have propelled these fields forward. This special issue of *Pure and Applied Mathematics Quarterly* celebrates Don's 70th birthday.

Don Zagier was born in Heidelberg on June 29, 1951. His mother was a psychiatrist, and his father was a dean at the American College of Switzerland. After finishing high school at age 13, he studied for three years at MIT, where he earned both bachelor's and master's degrees in mathematics. He was named a Putnam Fellow in 1967 at the age of 16. In 1968, Don enrolled at Oxford University, where he planned to begin research under the supervision

of Michael Atiyah. However, Atiyah left for Princeton in his second year.[1] Seeking a new advisor, Don wrote to Friedrich Hirzebruch at Bonn who then invited him to study under his tutelage. Don wrote his doctoral thesis on characteristic classes under Hirzebruch, receiving his Ph.D. after one year at the age of 20. Don then earned his Habilitation at the age of 23. He has held academic positions at the University of Maryland (1979–1990), Universiteit Utrecht (1990–2001), Kyushu University (1990–1993), Max Planck Institute for Mathematics (1995–present), Collège de France (2000–2014), and International Centre for Theoretical Physics (2014–present).

Don's mantra has been that modular forms appear everywhere in mathematics. The evidence supporting his view is strong. Their presence generally leads to deep structure teeming with symmetry. Don's research offers significant contributions to a breathtaking array of fields. Indeed, he is well-known for deep results on the Birch and Swinnerton-Dyer Conjecture, Euler characteristics of moduli spaces of algebraic curves, Hilbert modular surfaces, mock modular forms, multiple zeta-values, polylogarithms and special values of zeta-functions, quantum modular forms, to name a few.

Don has won many awards for his scientific contributions. He won the Cole Prize in Number Theory in 1987, the von Staudt Prize in 2001, and was the Gauss Lecturer of the German Mathematical Society in 2007. He became a foreign member of the Royal Netherlands Academy of Arts and Sciences in 1997, and he was elected a member of the US National Academy of Sciences (NAS) in 2017.

Finally, we must highlight his strength as a mentor and collaborator. He has been a prolific Ph.D. mentor. He has advised 24 Ph.D. students, including 1998 Fields medalist Maxim Kontsevich and 2022 Fields medalist Maryna Viazovska. He is a prolific collaborator, having written papers with over 100 co-authors, including the editors of this special issue.

As editors of this special issue, we are delighted to offer this tribute to Don Zagier in celebration of his 70th birthday. We are grateful for his friendship and years of mathematical enrichment. Please enjoy the scientific articles and the piece "Working with Don", that offers an intimate view of one of the most significant partnerships in the history of mathematics.

Ken Ono
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[1] Atiyah returned to Oxford after one year in Princeton.