Preface

Grigory Margulis was born in February 24, 1946, and grew up in Moscow. He studied at the Moscow State University and started to write papers from the second year in college on.

He is well-known for his highly original solutions to long standing conjectures in broad areas of mathematics such as the arithmeticity and superrigidity of irreducible lattices in semisimple Lie groups, and the Oppenheim conjecture on values of indefinite irrational quadratic forms at integral points. He is also the first one who explicitly constructed infinite families of expander graphs using the property (T) of Kazhdan for higher rank arithmetic groups, which was also used by him to solve a famous conjecture of Banach-Rusiewicz on finitely additive invariant measures on $\mathbb{R}^n$ and the sphere S^n.

Due to his deep contributions, he has received many honors and awards, including a Fields medal in 1978 and a Wolf prize in 2005. The citation of the Wolf prize points out:

"Margulis's work is characterized by extraordinary depth, technical power, creative synthesis of ideas and methods from different areas of mathematics, and a grand architectural unity of its final form. Though his work addresses deep unsolved problems, his solutions are housed in new conceptual and methodological frameworks of broad and enduring application. He is one of the mathe- matical giants of the last half century. stunning and compelling for both mathematicians and physicists.

He is also a member of the National Academy and the American Academy of Arts and Sciences.

To celebrate his sixtieth birthday, the editorial board of the Pure and Applied Mathematics Quarterly has decided to publish two special issues in honor of him.

Though these issues could not cover all the areas greatly influenced by the work of Margulis, we hope that they will convey a sense of his profound impacts on mathematics, and his friends and colleagues' admiration for him.

The special editorial board of these two special issues:
Marc Burger
Lizhen Ji
Alexander Lubotzky
Hee Oh
Shing-Tung Yau

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