Preface

Serge Lang was an iconic figure in mathematics, both for his own important work and, perhaps even more crucially, for the indelible impact he left on the field, and on his students and colleagues. It would be difficult to find a mathematician who came of age in the past forty years, who had not been exposed to Serge's articles, monographs, and textbooks. Serge's writing shaped the mathematical perspectives of all who came in contact with them. Many were challenged by the glimpses of open problems and conjectures that Serge interweaved with his expositions of established subjects. Serge's exposition invariably transcended our discipline's preference for brevity and perfection, which often obscures the intuition underlying the subject. Serge was never one to conform.

One of Serge's uplifting qualities was his openness to new areas of mathematics and his concurrent willingness, even eagerness, to learn novel concepts and techniques. He was constantly reinventing himself, while sharing his accumulated wisdom with students and young mathematicians. Over the course of his career, he traversed a tremendous amount of mathematical ground. As he moved from subject to subject, he found analogies that led to important questions in such areas as number theory, arithmetic geometry, and the theory of negatively curved spaces. Lang's conjectures will keep many mathematicians occupied far into the future.

This memorial volume contains articles in a variety of areas of mathematics, attempting to represent Serge's breadth of interest and impact. We are happy to publish here (for the first time) Serge's final paper, *The heat kernel, theta inversion, and zetas on* $\Gamma\backslash G/K$, written jointly with one of us (J. Jorgenson). Except for that one article, which was left in the form it assumed just before Serge's passing, every other entry here was thoroughly refereed. We thank all the authors for their contributions to the volume and for their willingness to put up and comply with our demands for revision. Thanks also to the anonymous referees for their excellent and timely work.

We, the editors, are pleased to be a part of this production, especially since we were all fortunate enough to know Serge personally. We thank Stacey Croomes, the math administrator at Caltech, for her invaluable help in organizing the receipt of

the articles, the refereeing process, and the revisions. We are grateful to Ann Kostant and Elizabeth Loew of Springer for their enthusiasm and helpful advice during the many months of editorial preparation. It took a village to produce this volume.

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http://www.springer.com/978-1-4614-1259-5

Number Theory, Analysis and Geometry
In Memory of Serge Lang
Goldfeld, D.; Jorgenson, J.; Jones, P.; Ramakrishnan, D.;
Ribet, K.; Tate, J.T. (Eds.)
2012, XX, 704 p., Hardcover
ISBN: 978-1-4614-1259-5