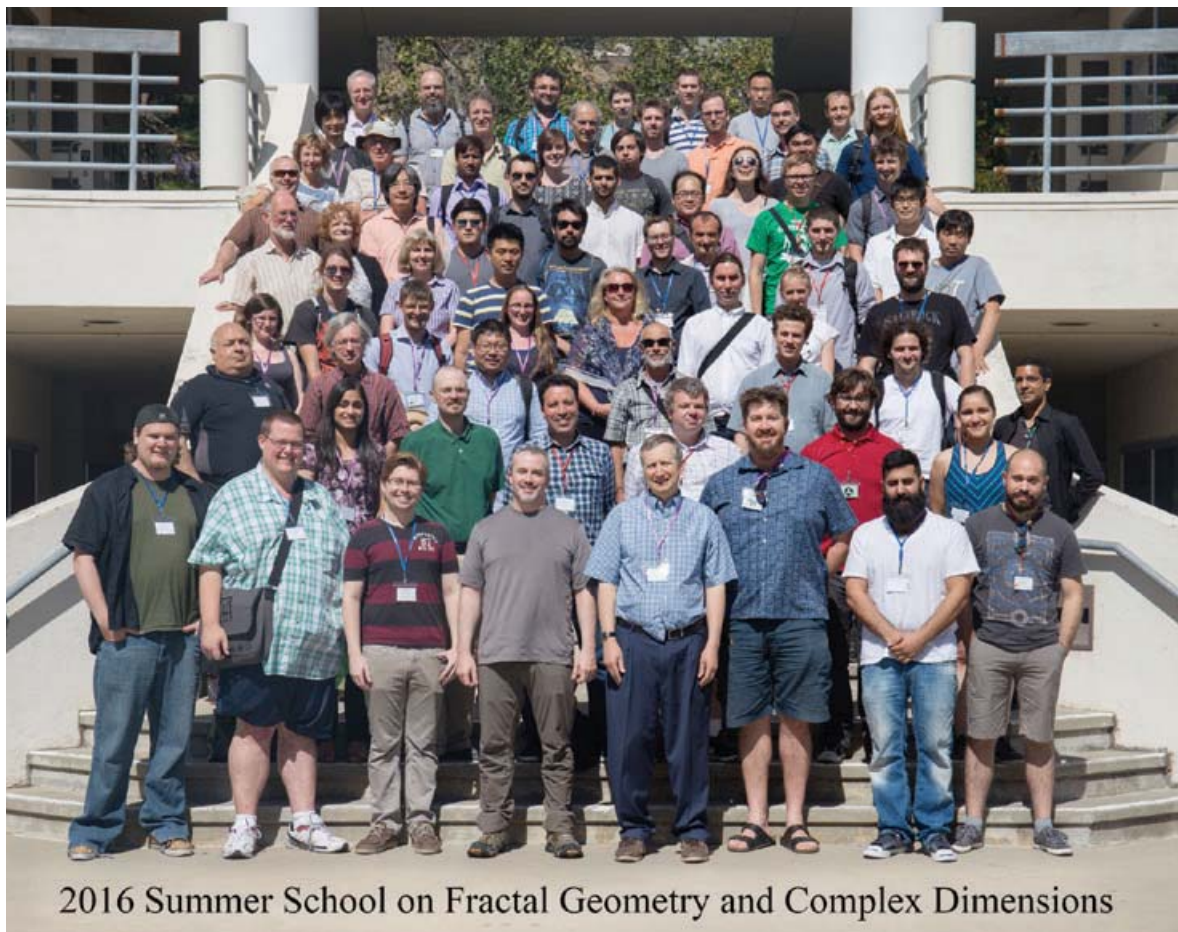# 2016 Summer School on Fractal Geometry and Complex Dimensions

## In celebration of the 60th birthday of Michel Lapidus, June 21–29, 2016

### Rochelle Kronzek



2016 Summer School on Fractal Geometry and Complex Dimensions

Approximately 100 participants gathered together from sixteen nations (including Australia, Brazil, Cameroon, China, Croatia, England, Germany, India, Italy, Japan, the Netherlands, Pakistan, Romania, Scotland, Sweden and the United States) for eight days at California Polytechnic in beautiful San Luis Obispo to study, learn and share new research findings in Fractal Geometry and Complex Dimensions as well as to celebrate the life and work to date of researcher Dr Michel Lapidus, Professor at University of California Riverside.

Fifty-seven seminars, teaching sessions and breakout sessions were offered by World class researchers including Dr Kenneth Falconer (St Andrews, Scotland), Dr Michael Barnsley (Australian National University), Prof Dr Martina Zähle (University of Jena, Germany), Dr Ben Hambly (Oxford University, UK), Prof Dr Uta Freiberg (University of Stuttgart, Germany), Dr Jun Kigami (Kyoto University, Japan), Dr Carl Pomerance (Dartmouth College, USA), and many others. Topics offered over multiple sessions included full courses and course notes in Quasi-Crystals, Analysis on Fractals, Fractal Geometry and Complex Dimensions, an Introduction to Fractal Geometry and Cookie Cutter Sets and the Thermodynamic Formalism.

Thirty-six outstanding individual talks were also given on topics including "Projections, random fractals and measures, and Liouville quantum gravity", "The Spectral Operator and the Riemann Hypothesis", "Meromorphic Extension of Spectral Zeta Functions on Fractals Solutions of the fractal wave equation", "Curvature properties of fractal sets", "Fractals and Quasicrystals Meet Topology in Condensed Matter" and many others. Please refer to the conference site: *www.calpoly.edu/~epearse/Fractals2016)*.

Drs John Rock (California State Polytechnic University, Pomona US), Erin Pearse and Tony Samuel (California Polytechnic State University, San Luis Obispo US) organised the conference hosted in a wonderful mountainous setting nestled midway between San Jose and Los Angeles on the Central Coast of California. While sessions were abundant throughout the day, the group was offered evening and Sunday excursions to the local farmer's markets, state parks and beach and resort towns nearby.

**Michel Lapidus** is a professor of Mathematics and a cooperating faculty member in the departments of Physics, Astronomy, Computer Science and Engineering at the University of California, Riverside, where he has been on the faculty since 1990. Dr Lapidus is a theory-builder who studies the mathematical and geometrical structures that underlie physics, as well as the complicated geometry that arises in nature. His highly-cited interdisciplinary work has had a significant impact upon various branches of mathematics and scientific disciplines including physics, biology, chemistry, geology, engineering, scientific computing and computer science. Dr Lapidus' broad mathematical research interests include Mathematical Physics, Functional and Harmonic Analysis, Geometric Analysis, Partial Differential Equations, Dynamical Systems, Spectral Geometry, Fractal Geometry, Connections with Number Theory, Arithmetic Geometry and Noncommutative Geometry.
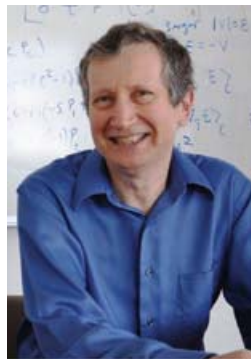
Dr Lapidus is the Editor-in-Chief of the "Journal of Fractal Geometry" for the American Mathematical Society (AMS). He is the author of six successful research monographs and textbooks, six edited books and several new monographs underway (including one for World Scientific entitled "Quantized Number Theory, Fractal Strings and the Riemann Hypothesis From Spectral Operators to Phase Transitions and Universality").

We are honoured that Dr Lapidus is the series editor of a new interdisciplinary series for World Scientific Publishing entitled "Fractals and Dynamics in Mathematics, Science, and the Arts: Theory and Applications". Several books are in development for this new series. The first volume, dedicated to Benoit Mandelbrot, is on special sale within this newsletter.

Dr Lapidus enjoys collaborating with former students in the US and Worldwide. He works in close collaboration with graduate students, postdoctoral fellows, junior collaborators and international visitors. He mentors students of all levels — including high school, undergraduate and graduate students which earned him an advisor/graduate mentoring award for "exceptional contribution to the mentoring and advising of PhD students over the course of many years.