

# 2005 Satter Prize

The 2005 Ruth Lyttle Satter Prize in Mathematics was awarded at the 111th Annual Meeting of the AMS in Atlanta in January 2005.

The Satter Prize is awarded every two years to recognize an outstanding contribution to mathematics research by a woman in the previous five years. Established in 1990 with funds donated by Joan S. Birman, the prize honors the memory of Birman's sister, Ruth Lyttle Satter. Satter earned a bachelor's degree in mathematics and then joined the research staff at AT&T Bell Laboratories during World War II. After raising a family, she received a Ph.D. in botany at the age of forty-three from the University of Connecticut at Storrs, where she later became a faculty member. Her research on the biological clocks in plants earned her recognition in the U.S. and abroad. Birman requested that the prize be established to honor her sister's commitment to research and to encourage women in science. The prize carries a cash award of \$5,000.

The Satter Prize is awarded by the AMS Council acting on the recommendation of a selection committee. For the 2005 prize the members of the selection committee were: Karen E. Smith, Jean E. Taylor (chair), and Chuu-Lian Terng.

Previous recipients of the Satter Prize are: Dusa McDuff (1991), Lai-Sang Young (1993), Sun-Yung Alice Chang (1995), Ingrid Daubechies (1997), Bernadette Perrin-Riou (1999), Karen E. Smith (2001), Sijue Wu (2001), and Abigail Thompson (2003).

The 2005 Satter Prize was awarded to SVETLANA JITOMIRSKAYA. The text that follows presents the selection committee's citation, a brief biographical

sketch, and the awardee's response upon receiving the prize.

## Citation

The Ruth Lyttle Satter Prize in Mathematics is awarded to Svetlana Jitomirskaya for her pioneering work on non-perturbative quasiperiodic localization, in particular for results in her papers (1) "Metal-insulator transition for the almost Mathieu operator", *Ann. of Math.* (2) 150 (1999), no. 3, 1159–1175, and (2) with J. Bourgain, "Absolutely continuous spectrum for 1D quasiperiodic operators", *Invent. Math.* 148 (2002), no. 3, 453–463. In her *Annals* paper, she developed a non-perturbative approach to quasiperiodic localization and solved the long-standing Aubry-Andre conjecture on the almost Mathieu operator. Her paper with Bourgain contains the first general non-perturbative result on the absolutely continuous spectrum.

## Biographical Sketch

Svetlana Jitomirskaya was born on June 4, 1966, and raised in Kharkov, Ukraine, in a family of two accomplished mathematicians (later three, counting her older brother). She received her undergraduate degree (1987) and Ph.D. (1991) from Moscow State University. Since 1990 she has held a research position at the Institute for Earthquake Prediction Theory in Moscow. In 1991 she came with her family to southern California. She was employed by the University of California, Irvine, as a



Svetlana Jitomirskaya

part-time lecturer (1991–92) and rose through the ranks to become a visiting assistant professor (1992–94) and then a regular faculty member (since 1994). She took a leave from UCI to spend nine months at Caltech (1996). She was a Sloan Fellow (1996–2000) and a speaker at the International Congress of Mathematicians in 2002. She is married and has three children ranging in age from one to seventeen.

### **Response**

I am very grateful to the AMS for this honor and to the members of the Ruth Lyttle Satter Prize Committee for identifying and selecting me. It is humbling to be on the same list with the past recipients of this prize.

I must say that I have never felt disadvantaged because of being a woman mathematician; in fact, the opposite is true to some extent. However, compared to most others, I did have a unique advantage: a fantastic role model from early on—my mother, Valentina Borok, who would have been much more deserving of such a prize than I am now, had it been available in her time. I see my receiving this prize as a special tribute to her memory.

It is a pleasure to use this opportunity to say some thanks. It was great to be raised by my parents, and I was lucky to be a student of Yakov Sinai, who was both my undergraduate (since 1984) and graduate advisor. I am also very grateful to Abel Klein, whose support and encouragement in the postdoctoral years were crucial for my career. I had many wonderful collaborators, from each of whom I learned a lot. Three of those particularly stand out, as they have influenced my work in a major way. They are, in chronological (for me) order: Barry Simon, Yoram Last, and Jean Bourgain. Each of them has not only introduced new techniques to me and had a visible influence on my style and choice of topics but also provided a special inspiration and changed the way I think about mathematics. I am also grateful to Jean for entering, with his methods and ideas, the area of quasiperiodic operators. That certainly brought this field to a new level and changed how it is perceived by many others.

Finally, special thanks go to my family, as I wouldn't have accomplished a fraction of what I did without patience, support, and a lot of sacrifice on their part.