Winners announced at the 2014 ICM in Seoul for this year’s Fields Medals

The International Congress of Mathematicians, hosted in Seoul, South Korea, announces winners of several prizes, including the Fields Medal, the most prestigious award in Mathematics

Seoul, South Korea, [August 13th, 2014] – The Fields Institute extends its congratulations to this year’s medal recipients. The Fields Medals are awarded every four years on the occasion of the International Congress of Mathematicians (ICM) in order to recognize outstanding mathematical achievement for existing work and for the promise of future achievement.

The event is hosted by the International Mathematical Union (IMU), and this year is convening in Seoul, South Korea. At 11:30 am (KST), on Wednesday (10:30 pm, Tuesday EST), at the opening of the event, ICM announced the winners of the Fields Medals, Nevanlinna Prize, Gauss Prize, Chern Medal and Leelavati Prize.

Each of these mentioned awards are held in high esteem, but the Fields Medal has taken on the aspect of being known as the “Nobel of Math” to the general public, generating a large amount of interest worldwide.

ICM has announced the winners, each of them a notable first for the Fields Medal: the first woman and the first Iranian, Maryam Mirzakhani; the first Canadian, Manjul Bhargava; Artur Avila, the first Brazilian; and Martin Hairer, the first Austrian to win a Fields Medal.

Artur Avila is awarded a Fields Medal for his profound contributions to dynamical systems theory, which have changed the face of the field, using the powerful idea of renormalization as a unifying principle. Manjul Bhargava is awarded a Fields Medal for developing powerful new methods in the geometry of numbers, which he applied to count rings of small rank and to bound the average rank of elliptic curves. Maryam Mirzakhani is awarded a Fields Medal for her outstanding contributions to the dynamics and geometry of Riemann surfaces and their moduli spaces. Martin Hairer is awarded a Fields Medal for his outstanding contributions to the theory of stochastic partial differential equations, and in particular for the creation of a theory of regularity structures for such equations.

Two of this year’s winners have visited the Fields Institute as lecturers and speakers. Artur Avila was at the Institute sharing his knowledge and insight from January to June 2011 as Dean’s Distinguished Visiting Professor during the Thematic Program on Dynamics and Transport in Disordered Systems. Also in 2011 Martin Hairer spoke at a workshop on Fourier Law and Related Topics. In addition Manjul Bhargava was the leading invited expert for the Séminaire de Mathématiques Supérieures in 2014 at CRM, which was co-sponsored by the Fields Institute.

About the Fields Institute and its connection with the Fields Medal

The Fields Medal was founded through the efforts of John Charles Fields, a Canadian Mathematician who had a major impact on national and international mathematical studies and research. Fields himself was instrumental in establishing the National Research Council (NRC), and raising the status of mathematics as an area of study as well as the creation of the award that bears his name in the popular imagination.

Fields conceived of the award in the late 1920s, but it took until 1932 for the award to be established and funded. Officially the award was meant to be free from any recognition of Fields himself as the
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International Medal for Outstanding Discoveries in Mathematics. But, by the time the medal was first awarded in 1936, Fields had passed away, and it had become known in the greater population as the Fields Medal.

Fields had stipulated the prize was meant to be in “recognition of work already done, it was at the same time intended to be an encouragement for further achievement on the part of the recipients and a stimulus to renewed effort on the part of others.” The ICM later placed an age limit of 40 years of age in order to help encourage younger mathematicians in their careers. The award itself comes with $15 000 (Canadian) from a fund that is administered by the University of Toronto. The prize is bestowed every four years, and there can be two to four winners.

The Fields Institute shares the namesake of the award, and continues JC Fields’ ambition of increasing the dialogue amongst researchers, academics, students and the public. Since 2012 the Fields Institute has had the honour of hosting each year one of the winners at the Fields Medal Symposium held in Toronto. Its purpose is to honour the work of recent recipients of the Fields Medal, bring their research area to the next level, and increase public awareness of the prize. The first event celebrated the work of Ngô Bảo Châu, and with its success was followed by the 2013 Symposium honouring the work of Elon Lindenstrauss. This year’s Fields Medal Symposium will honour Cédric Villani. The Program will focus on the many facets of entropy: kinetic theory, optimal transport, geometry, such as the role played by entropy in physical, geometric, and transport phenomena. In 2015 the Fields Medal Symposium will celebrate the achievements of Stanislav Smirnov. The Fields Institute is looking forward to beginning the preparations for the Fields Medal Symposia that will honour this year’s winners of the award.

The Director of the Fields Institute, Walter Craig, is attending the ICM, and will be available for comments or questions. Alternatively, the Deputy Director, Matheus Grasselli is also available for his own comments or questions in relation to the ICM and this year’s winners.

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IMAGES 2014 FIELDS MEDALISTS

Artur Avila
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Manjul Bhargava
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Martin Hairer
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Maryam Mirzakhani