

Trieste Science Prize winners

Two medical researchers who have made fundamental contributions to our understanding and prevention of lethal infectious diseases and two mathematicians who have shed light on some of the world's most mind-boggling mathematical problems have won the Trieste Science Prize for 2006, awarded by the Academy of Science for the Developing World (TWAS) and Illycaffè.

Chen Ding-Shinn, Dean of the National Taiwan University College of Medicine and Chair of the Taiwanese Government's Hepatitis Control Committee, and **Rao Zihé**, Professor at Tsinghua University and Director of the Chinese Academy of Sciences' Institute of Biophysics, Beijing, will share the prize in the category of medical sciences. **Jacob Palis**, Director-Emeritus of the Institute of Pure and Applied Mathematics, Rio de Janeiro, Brazil, and **C. S. Seshadri**, Founding Director, Chennai Mathematical Institute, India, will share the prize in the category of mathematics.

The Trieste Science Prize, which is administered by TWAS and funded by Illycaffè, provides international recognition to outstanding scientists living and working in the developing world. The winners will share the US \$100,000 cash award.

Chen is being honoured for the leading role he played in uncovering the factors responsible for the transmission of the hepatitis B virus from mothers to infants and for proving that this viral disease was associated not only with liver cirrhosis, but also with liver cancer. He used this knowledge to gain support for a comprehensive vaccination campaign in Taiwan – a strategy that has since been adopted by countries across the globe. Thanks to Chen's efforts, the incidence of hepatitis B has declined rapidly and hepatocellular carcinoma has become the first human cancer to be prevented through immunization.

Rao is being recognized for his world-class contributions to structural biology

and his studies of viruses responsible for human diseases. Rao led a team of Chinese researchers who deciphered the first crystal structure of the coronavirus, which causes Severe Acute Respiratory Syndrome (SARS). His findings provide a potential framework for the design of anti-SARS drugs. The SARS epidemic infected more than 8000 people and caused more than 800 deaths in 2003. With the rising incidence of infectious diseases and the risk of pandemics, Rao's focus on the relationship between protein structure and function – and ultimately on protein engineering and drug design – has gained increasing global attention.

Palis has been one of the world's foremost mathematicians in the fields of multi-variable dynamical systems, a sector of mathematics that tries to understand how nonlinear complex phenomena behave over the long term. Such studies have helped enhance our understanding of population growth patterns, global climate change and even fluctuations in the stock market. Palis has also been a driving force behind efforts to strengthen the study of mathematics in Latin America. He served as the Director, Institute of Pure and Applied Mathematics, Rio de Janeiro for more than a decade, transforming the institution into a world-class centre for mathematical research and Latin America's foremost institution for the training of young mathematicians.

Seshadri is being honoured for the prominent role he has played in shaping the field of algebraic geometry, one of the dominant fields in 21st century mathematics. He is a leading figure in such cutting-edge topics as the theory of vector bundles and quotient and compact homogenous spaces. He is recognized as the creator of the Standard Monomial Theory and Seshadri Constant, which have found important applications both in mathematics and physics. Seshadri has also been the leading force behind the creation of the Chennai Mathematical In-

stitute, which over the past decade has emerged as one of world's pre-eminent centres for mathematics.

'In just its second year, the Trieste Science Prize has emerged as one of the most recognized and valued prizes for scientists from the developing world', says C. N. R. Rao, President of TWAS. 'This year's prize winners are world-class scientists who have not only made world-class contributions to their fields but have also played prominent roles in the development of scientific institutions in their own countries. They are not only worthy of our congratulations but also worthy of our thanks for making our world a better place.'

This marks the second year of the Trieste Science Prize. The prize is designed to bring recognition and distinction to the developing world's most eminent scientists, who have not yet been honoured by other international award schemes dedicated to honouring scientific achievement. It is named after Trieste, a city in northeast Italy that has made fundamental contributions to the promotion of science in the developing world. Individuals who have received the Nobel Prize, the Tokyo/Kyoto Prize, the Crafford Prize or the Abel Prize are not eligible. The prize is given annually and rotates among the following scientific fields: biological sciences and physics/astrophysics (2005); mathematics and medical sciences (2006); agricultural sciences and chemistry (2007); and earth and engineering sciences (2008) http://www.twas.org/honor/TSP_info.html.

TWAS is the world's foremost academy for scientists from the developing world. Its membership currently consists of 809 eminent scientists, more than 80% of whom live and work in the South. Based in Trieste, TWAS also sponsors a large number of research and training programmes for scientists from the developing world (<http://www.twas.org>).