

# TRIESTE SCIENCE PRIZE WINNERS 2007

AN EMINENT MEXICAN BIOLOGIST, WHOSE RESEARCH HELPED TO SPUR THE CREATION OF THE FIRST GENETICALLY MODIFIED PLANTS, AND AN INTERNATIONALLY RENOWNED INDIAN CHEMIST, WHOSE INNOVATIVE LABORATORY TECHNIQUES HAVE LED TO THE SYNTHESIS OF MORE THAN 50 NATURAL PRODUCTS, HAVE BEEN AWARDED THE TRIESTE SCIENCE PRIZE FOR 2007. THE PRIZE, ADMINISTERED BY TWAS AND FUNDED BY ILLYCAFFÈ, PROVIDES INTERNATIONAL RECOGNITION TO OUTSTANDING SCIENTISTS LIVING AND WORKING IN THE DEVELOPING WORLD. WINNERS SHARE A US\$100,000 CASH AWARD.

**G**overdhan Mehta, CSIR Bhatnagan fellow and honorary professor at the Department of Organic Chemistry at the Indian Institute of Science in Bangalore, and distinguished research professor at the University of Hyderabad in India, is a world-renowned chemist who has made breakthrough contributions in a variety of fields related to organic synthesis.

His wide-ranging interests include the synthesis of biologically significant and architecturally challenging natural products; the design of novel molecules; the study of stereoelectronic effects; and super molecular chemistry. His synthesis techniques have been widely praised for their elegance and originality. Otteliones A and B, currently being tested for their anti-tumor activity, are among the 50 complex and biologically active



natural products that Mehta and his group have synthesized.

Mehta's work has led to patents for hybrid drugs for the treatment of cancer that combine the drugs' conventional cytotoxic action with the ability to 'switch on' the drugs in the desired location using light as a stimulus. He and his group have also synthesized carbon compounds that may have potential applications in nanotechnology devices.

Beyond the laboratory, Mehta has made significant contributions to science education and science policy in India and abroad. He is currently president of the International Council for Science (ICSU) in Paris, France, and a member of the Scientific Advisory Committee to the Prime Minister of India.

Luis Rafael Herrera-Estrella, director of the National Laboratory for Genomics of Biodiversity and professor



#### MORE ON TRIESTE SCIENCE PRIZE

*The Trieste Science Prize, now in its third year, 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 showcasing 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. The prize has received the high patronage of the president of Italy. It is given annually and rotates among the following fields: biological sciences and physics/astrophysics (2005); mathematics and medical sciences (2006); agricultural sciences and chemical sciences (2007); and earth and engineering sciences (2008). For additional information, see [www.twas.org/honor/TSP\\_info.html](http://www.twas.org/honor/TSP_info.html).*

of plant genetic engineering at the Centre of Research and Advanced Studies in Irapuato, Mexico, helped to pioneer the field of plant molecular biology and genetic engineering. Plant transformation techniques developed by Herrera-Estrella and his colleagues have had a significant impact on the commercial production of genetically modified (transgenic) plants currently grown on more than 100 million hectares worldwide.

Herrera-Estrella's work has largely focused on crop species of economic importance to Latin America, including asparagus, maize and papaya. In addition, his analysis of the molecular mechanisms of toxins, produced by the disease-causing bacterium *Pseudomonas syringae* pv *phaseolicola*, has led to the development of transgenic beans resistant to the disease.

Herrera-Estrella has recently turned his attention to understanding the molecular mechanisms that make it possible for plants to tolerate toxic concentrations of aluminum and, more generally, that enable plants to adapt to nutrient-deficient soils. This is critically important in Latin America, where some 500 million hectares of farmland are deficient in phosphorus, an essential nutrient for healthy plant growth and crop production.

"Trieste Science Prize winners," says Jacob Palis, president of TWAS, "put a spotlight on the enormous impact that scientists from the developing world are making to international science. Their efforts are not only helping their nations to advance but are also making our global community a better place."

"illycaffè," says Andrea Illy, the company's president and chief executive officer, "is pleased to honour scientists who are making significant contributions to society. The Trieste Science Prize symbolizes excellence, an enduring value that drives success in all fields of endeavour—as we at illycaffè know very well." ■



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