

Wolf Foundation Presents Prizes in Physics, Chemistry, and Mathematics

At a special meeting of the Knesset next month, Israeli President Moshe Katsav will present the 2005 Wolf Prizes. **Daniel Kleppner** will receive the physics prize, **Richard Zare** will receive the chemistry prize, and **Gregory Margulis** and **Sergei Novikov** will split the mathematics prize.

The Lester Wolfe Professor of Physics at MIT, Kleppner is being recognized for “groundbreaking work in

selective, and subcellular levels.” Zare is the Marguerite Blake Wilbur Professor in Natural Science at Stanford University.

Margulis was cited “for his monumental contributions to algebra, in particular to the theory of lattices in semi-simple Lie groups, and striking applications of this to ergodic theory, representation theory, number theory, combinatorics, and measure theory.” The jury adds, “Though his work ad-

L’Oréal and UNESCO Honor Five Women Physicists

In a special ceremony in Paris last month, cosmetics giant L’Oréal and the United Nations Educational, Scientific and Cultural Organization recognized five women, one from each continent, with the L’Oréal–UNESCO for Women in Science Awards. This year’s recipients are **Zohra Ben Lakhdar**, **Belita Koiller**, **Dominique Langevin**, **Myriam P. Sarachik**, and **Fumiko Yonezawa**. The awards, which alternate each year between the life sciences and materials science (including physics and chemistry), are each accompanied by a cash prize of \$100 000. This year’s presentation in materials science appropriately coincides with the World Year of Physics 2005.

Ben Lakhdar, the laureate for Africa, is a professor of physics at the University of Tunis in Tunisia. She is being honored “for her experiments and models on infrared spectroscopy and its applications to pollution detection and medicine,” according to the citation. She “has greatly furthered the development of optics and photonics as a scientific discipline in Tunisia and all of Africa” and has made “a number of valuable contributions to optical science and its applications in many different areas.”

Koiller was chosen as the laureate for Latin America “for her innovative theoretical research on electrons in disordered materials such as glass.” The selection jury adds, “Belita Koiller is a renowned theorist, whose innovative work has helped improve the understanding of complex condensed matter systems.” She is a professor of physics at the Federal University of Rio de Janeiro in Brazil.

“For her fundamental investigations of detergents, emulsions, and foams,” Langevin is the laureate for Europe. The jury praised the valuable contributions that her work has made in industry, “from petroleum to laundry detergents, milk proteins, hair products, nuclear waste treatment, and even the construction of a foam module for the International Space Station.” She is a director of research in the laboratory for the physics of solids at the University of Paris–Sud in Orsay, France.



atomic physics of hydrogenic systems, including research on the hydrogen maser, Rydberg atoms, and Bose–Einstein condensation,” according to the citation. “Over the last 45 years,” the prize jury adds, he “has made fundamental contributions to atomic physics and quantum optics, mainly using hydrogen and hydrogen-like atoms. He built new devices, performed spectroscopic tests of extreme precision, and investigated novel quantum phenomena.” Among the contributions highlighted by the foundation are the development by Kleppner and Norman Ramsey of the hydrogen maser in 1960 and the Bose–Einstein condensation of hydrogen, achieved in 1998 with Thomas Greytak.

Zare is receiving the chemistry prize “for his ingenious applications of laser techniques for identifying complex mechanisms in molecules and their use in analytical chemistry.” The jury praised his “seminal contributions to the theory and practice of both physical and analytical chemistry.” Among those contributions are “novel techniques in applied physical chemistry [that] have become indispensable to progress in chemical and biochemical analysis, particularly in relation to detection at the single-molecule, area-

dresses deep unsolved problems, his solutions are housed in new conceptual and methodological frameworks, of broad and enduring application.” He is a professor of mathematics at Yale University.

Novikov, distinguished university professor in the mathematics department and the institute for physical science and technology at the University of Maryland, College Park, and a principal researcher at the Landau Institute for Theoretical Physics in Moscow, is being honored “for his fundamental and pioneering contributions to algebraic and differential topology, and to mathematical physics, notably the introduction of algebraic–geometric methods.” His contributions to mathematical physics include a systematic study of finite-gap solutions of two-dimensional integrable systems and work on “almost commuting” operators that appear in string theory and matrix models.

The Wolf Prizes are sponsored by the Wolf Foundation, based in Herzlia Bet, Israel. The prizes, of \$100 000 each, are given every year in four out of five scientific fields, in rotation: agriculture, chemistry, mathematics, medicine, and physics.