

Improving Water Quality Gives American the 2007 Stockholm Water Prize

Professor Perry L. McCarty from Stanford University, California, a pioneer in the development of the understanding of biological and chemical processes for the safe supply and treatment of water, was named the 2007 Stockholm Water Prize Laureate on World Water Day, March 22.

Professor McCarty's work has led to more efficient biological treatment processes, in particular anaerobic (oxygen-less) treatment systems for municipal and industrial wastewaters, biological nutrient removal, and the development and use of biofilm reactors.

The Stockholm Water Prize is a global award founded in 1990 and presented annually by the Stockholm Water Foundation to an individual, organisation or institution for outstanding water-related activities. The activities can be within fields like education and awareness-raising, human and international relations, research, water management and water-related aid. The Stockholm Water Prize Laureate receives USD 150,000 along with a glass sculpture, which will be presented to him by H.M. King Carl XVI Gustaf of Sweden on August 16 during the 2007 World Water Week in Stockholm.

Natural bacterial processes made operational in large-scale technologies

Being an environmental engineer, Professor McCarty, 76, has combined deep knowledge in physical, chemical, biological and microbiological processes and transferred the results into outstanding technical development widely used all over the world as the basis for design and operation of wastewater treatment systems.

Professor McCarty's other important contribution was the identification of mechanisms for biodegradation and the fate of hazardous and anthropogenic trace chemicals



Photo: SIWI

Being an environmental engineer, Professor McCarty has combined deep knowledge in physical, chemical, biological and microbiological processes and transferred the results into outstanding technical development widely used all over the world.

as well as appropriate engineering for water quality improvement of ground- and surface water and soils.

All of his earlier research findings and theoretical developments have been incorporated into these recent studies and culminated in his fundamental theory of water quality improvement in surface and groundwater as well as biological treatment of polluted soils (bioremediation). This is an enormous accomplishment and brings

together a unified concept derived from physical, chemical and biological phenomena into integrated management for water quality improvement.

Purifying the invisible

Professor McCarty has furthermore tackled the important problem of organic compounds and pollutants in wastewater and underground aquifer systems. His work has led to the development and practical



Photo: SIWI

implementation of methods to treat toxic chemicals in groundwater, especially chlorinated pollutants from industry.

A stunning scientific career

Professor McCarty has published over 300 papers in water science, environmental engineering, and microbiology science journals with 50 papers just in the last 10 years. His two textbooks on the chemistry, biology and design of treatment systems for municipal and industrial wastewater are daily used by engineers all over the world.

Professor McCarty has been an educator and researcher at Stanford since 1962. His ability to attract and develop outstanding doctoral students at Stanford University is eminent. Professor McCarty furthermore was for 14 years the director of the Environmental Protection Agency-sponsored Western Regional Hazardous Substances Research Center. He is also a member of the National Academy of Engineering and an Honorary member of the American Water Works Association and the Water Environment Federation, and a Fellow of the American Association for the Advancement of Science, the American Academy of Arts and Sciences and the American Academy of Microbiology.

By Ms. Stephanie Blenckner, SIWI
 e-mail: stephanie.blenckner@siwi.org and
 Mr. Ulf Ehlin, e-mail: ulf.ehlin@siwi.org



Photo: Private

The 2007 Stockholm Water Prize Laureate, Professor Perry L. McCarty from Stanford University, California.

Citation

In its Citation, the international Nominating Committee, an independent body under the auspices of the Royal Swedish Academy of Sciences, wrote of Professor Perry L. McCarty: "Professor Perry L. McCarty is awarded the 2007 Stockholm Water Prize for pioneering work in developing the scientific approach for the design and operation of water and wastewater systems. He has established the role of fundamental microbiology and chemistry in the design of bioreactors. Professor McCarty has defined the field of environmental biotechnology that is the basis for small-scale and large-scale pollution control and safe drinking water systems."

Founders of the Stockholm Water Prize

- | | | |
|---------------------------|-----------------------------|------------------------------|
| Bacardi | Kaupthing Bank Sverige | Siemens AG |
| DuPont | Kemira Kemwater | Snecma |
| Europeiska Insurance | KPMG Sweden | Swedish Railways (SJ) |
| Fujitsu Siemens Computers | Läckeby Water | Uponor |
| General Motors | P&G | Water Environment Federation |
| Grundfos Management | Ragn-Sells | |
| Hewlett Packard | Scandic | in collaboration with |
| ITT Flygt | Scandinavian Airlines (SAS) | the City of Stockholm |