Lennart Nilsson Award 2011: The Secret Life of Cells - in Colour

The 2011 Lennart Nilsson Award is to be presented to American biologist Nancy Kedersha, who is to receive the prize for her colour pictures showing the inner life of a cell.

The annual Lennart Nilsson Award is the world's most distinguished award in the field of scientific and medical photography, and is presented annually in honour of the legendary Swedish photographer. Like Lennart Nilsson, this year's recipient, Nancy Kedersha, has captured worlds that are otherwise hidden from human sight. She has rendered the invisible visible.

The panel's citation reads as follows: "Nancy Kedersha's colour images open our eyes to the smallest components of life. Through her work she has pushed cell biology into new scientific, pedagogical and aesthetic realms. With the aid of a confocal microscope, she has turned biological data into an artistic experience."

Nancy Kedersha is a researcher at the Boston Medical School, USA, and director of the confocal microscopy core at the Brigham and Women's Hospital in the same city. She was born in 1951 in Hackensack, New Jersey, and graduated with her PhD in biochemistry in 1983. In the mid-1980s, Dr Kedersha was involved in the discovery of a previously unknown structure in the cell, a tiny organelle not unlike the dome of a church in form. In order to better understand the structure's cellular context, Dr Kedersha refined available techniques for picking out the various components of the cell in different colours - a process known as fluorescence.

There are thousands of antibodies and other substances that make individual molecules in the cell glow green, red or blue, and this enables Dr Kedersha to identify different functions within the cells. By combining different substances she has managed to produce a number of tones over and above the three prime colours. Using her colour images, she can distinguish between healthy cells and cancerous cells, dormant cells and cells in various stages of division. Her work has proved so successful that several photo agencies specialising in scientific images make her photographs available for illustrations in textbooks, covers for scientific journals, etc.
Colour images from the confocal microscope are also fundamental to Dr Kedersha's current research. She has published a number of scientific articles in leading periodicals in which her photographs are part of the actual presentation.

As she says: "I see my photographs as an aesthetic form of data. They are challenging as they have to be interpreted - or rather translated - into concrete language and models to turn them from art into science."

http://www.lennart-nilsson-award.se