



## **Willard Boyle**

1924-2011

## **George Smith**

1930-

Willard Boyle, a Canadian physicist, and George Smith, an American physicist, contributed to the science of imaging through the invention of the charge-coupled device, a light-sensitive integrated circuit (CCD).

In 1969, Boyle and Smith were involved in semiconductor research at the AT&T Bell Laboratories. Merging a pair of projects at the Labs, Boyle and Smith described a device that could transport packets of electric charge through a silicon matrix. Originally conceived as useful for computer memory, it was quickly discovered that by aligning multiple columns side by side a CCD can record images. The CCD is at the core of the birth and growth of digital imaging in the late twentieth and early twenty-first centuries and remains an important component in many high-end imaging systems.