

Role Models

Programs 10-36



Orlando Auciello

Argonne National Laboratory

Programs 10-14

1. A PASSIONATE ARGENTINE

Behind the most advanced and hopeful research for the blind, there is an Argentine scientist from Cordoba who has lived immersed in the world of science of materials, physics and electronics.

Orlando Auciello

We are developing an artificial retina to restore vision to people who become blind as a result of the degeneration of the photoreceptors in the retina for genetic reasons.

Orlando Auciello from Argonne National Laboratory in Illinois is a key part of the research team designing the artificial retina.

Orlando Auciello

In the first generation of the artificial retina, electrical impulses are transmitted through 16 platinum electrodes. This allows blind people to read and to recognize objects, but with a low resolution and with great effort. When we can go out to a thousand electrodes on the microchip of the retina, people will be able to see complete images and have vision.

This information was brought to you with support from the Department of Energy of the United States.

2. TWO MARVELS OF CREATION

Have you ever asked yourself how your eyes, those small marvels of creation that open doors to the universe, work?

Often, the functioning of the eyes is compared to a photographic camera, but sometimes the process fails.

Orlando Auciello

Some people lose the capacity to see because the photoreceptors of their retina die and they cannot perceive photons of light, which, transmitted on electrical pulses, travel to the brain through the optic nerve to convert into images.

Orlando Auciello and John Carlisle from Argonne National Laboratory, are some of the scientists working on the development of artificial retinas that would bring thousands of people who do not see out of the darkness!

Orlando Auciello

When we can put about a thousand electrodes on a microchip of the retina images will be able to be seen and people will be able to have vision again.

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3. SMART CARDS

Do you hate to file papers? Do you never understand your prescription? Do you dream about having more free time? The development of "smart cards" could make your dreams a reality.

Orlando Auciello

This is going to be a revolution in people's lives; if it is installed, everything's going to be much faster.

According to Orlando Auciello from Argonne National Laboratory "smart cards" represent the first use of ferroelectric memories that could one day replace the memories that are used in computers, cell phones and all kinds of appliances.

Orlando Auciello

For example, if my medical history is on my "smart card" and I have an accident, the paramedic will be able to read the information about me on the computer they will carry, and immediately read all of my clinical history.

Orlando Auciello, an Argentine scientist, working every day so our lives are less complicated!

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4. MIRACULOUS RAYS

Do you know all that can be done with an X-ray? Argonne National Laboratory, near Chicago, has one of the most fascinating X-ray machines on the planet! Argentine scientist Orlando Auciello explains!

Orlando Auciello

With the Synchrotron one can study the structure of atoms that are reacting chemically in real time.

Few apparatuses can do what the Synchrotron at Argonne can.

Orlando Auciello

It is one of 2 Synchrotrons of the third generation that exists in the world at this time; and it produces the most intense and most potent X-rays in the world.

Argonne National Laboratory was the first National Laboratory created after Enrico Fermi and his collaborators successfully demonstrated the first controlled nuclear fission reaction in the 1940's at the University of Chicago.

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5. FROM ARGENTINA TO ARGONNE

Since he was very young, Orlando Auciello had a feeling about the route his life would take.

Orlando Auciello

My passion for science began when I was in Argentina and I saw some documentaries about the life of Einstein and other scientists who revolutionized science in the twentieth century. I said, "This is marvelous."

His journey through the world of science began in his native land, where Auciello studied electronic engineering and physics. From there he embarked in the journey that would turn him into an outstanding scientist.

Today he is a distinguished researcher at Argonne National Laboratory, near Chicago, and key part of the team developing an artificial retina for the blind.

Orlando Auciello

The science I'm doing here, I never could have done in Argentina for lack of funds. But more important is the human part - that my family could grow up in a country where people can freely express ideas, because that's the only way a scientist can progress.

Auciello continues directing his own scientific revolutions - and he does so in freedom.

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