

Science is all around you: bioengineering ^[1]

Submitted by [José R Almodóvar](#) ^[2] on 23 August 2013 - 2:52pm



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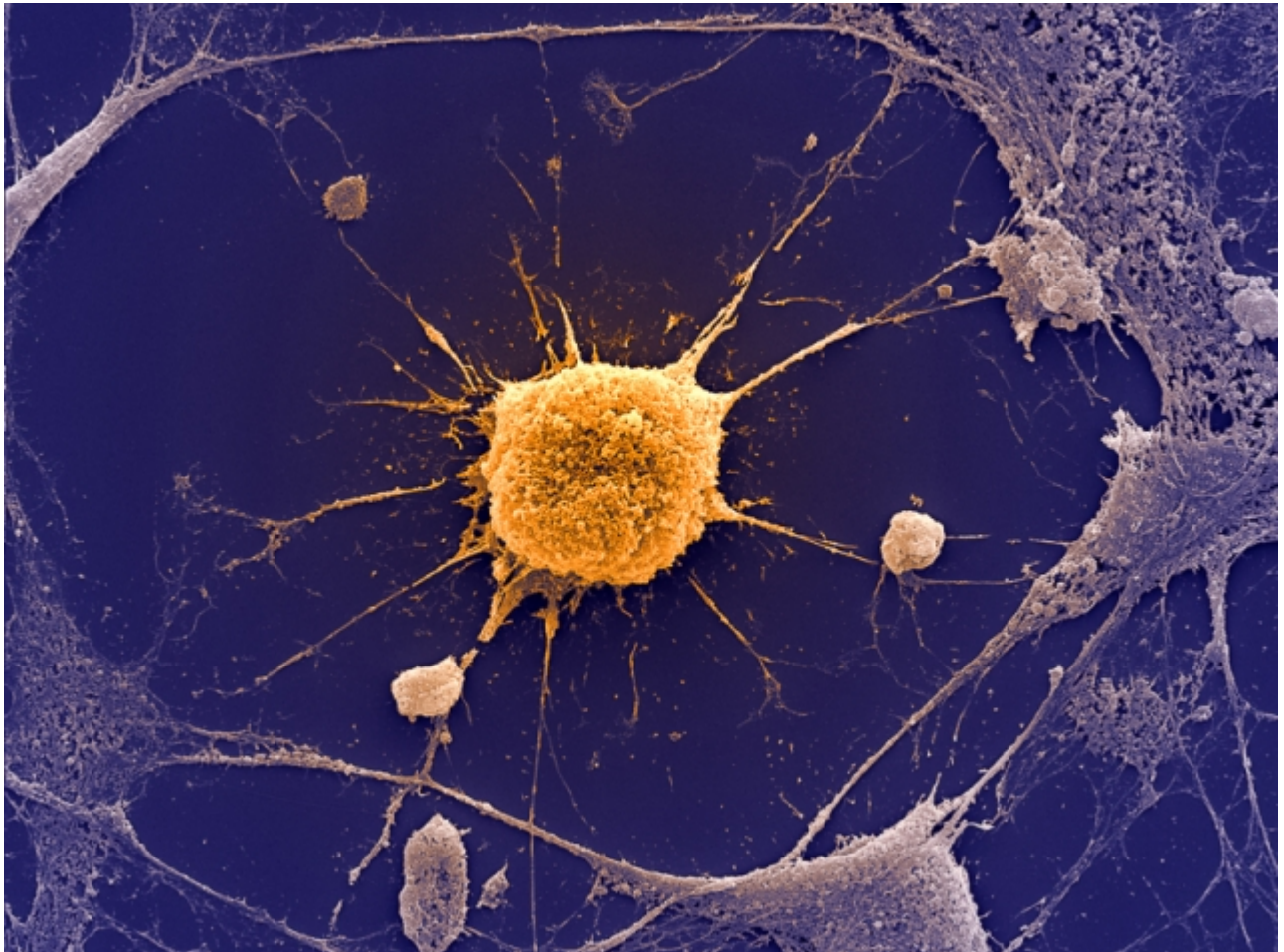


Photo by RUM Microscopy Center

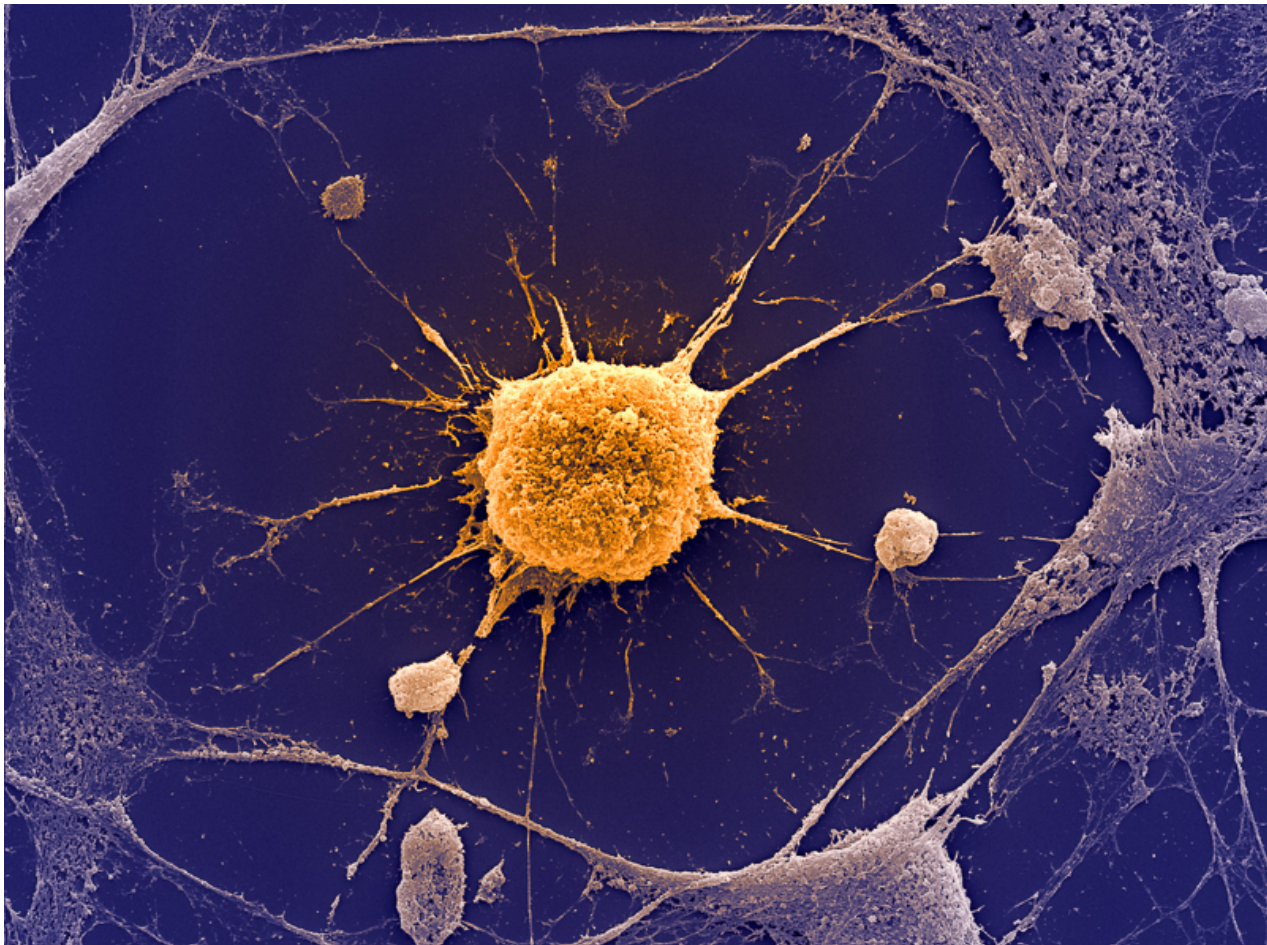
Greetchen: "José, science is all around us and manifests itself everywhere, but sometimes we can not see it with the naked eye."

José: "That's right. An example of this is the cell, the basic unit of living things. The body of humans and other animals is comprised of different cell types that form tissues which perform a variety of functions. "

Greetchen: "Yes, technology now allows us to replace diseased tissue with new ones that were produced in a laboratory."

José: "Greetchen, this is why studying the cell and how it may react to various conditions is vital to the progress of these technologies"

Greetchen: "Today we bring a guest who works fusing engineering with cell biology. Let's ask Dr. Paul Sundaram, professor and researcher at the University of Puerto Rico at Mayaguez: What does this image shows? "



A mouse cell growing on a plastic substrate. This image was manipulated by adding artificial color to highlight the cell. Photo provided by the RUM Microscopy Center

Dr. Sundaram: "The image was acquired by scanning electron microscopy and it shows an osteoblast or a bone cell. In this case, a mouse bone cell that was grown on a plastic substrate. The cell should be stretched over the substrate, but the cell have a different shape because it seem to be starting the process of cell division. "

José: "What goals do you want to achieve in your research?"

Dr. Sundaram: "The main purpose of my research is to study the effect of certain properties of the substrates on which bone cells are cultured in order to produce tissues that can be transplanted to humans (tissue engineering)."

Greetchen: "Dr. Sundaram, you are a materials engineer. How did you initiated and became interested in this area of science that fuses engineering and biology? "

Dr. Sundaram: "During my career as an engineer I'm always interested in how to use my knowledge to help humanity. Biomedical engineering is an area in which you can apply various concepts and principles of engineering in the field of medicine in order to help improve the health of patients. "

José: "What are your future plans?"

Dr. Sundaram: "I am a professor and my goal is always to inspire my students to use their knowledge to help humanity. I will continue to investigate on how we can cure diseases (such as cancer), for the benefit of all. "

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[A Tour of The cell](#) [3]

[Lectures about the cell \(Khan Academy\)](#) [4]

[All about Bone](#) [5]

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