

# Editorial Board Member

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## Biography

- Liviu Movileanu studied physics from 1985-1990 and received a PhD in Biophysics from the University of Bucharest in 1997. He held postdoctoral positions at the University of Missouri Kansas City Missouri 1997-1998 and the Texas AM University Health Science Center College Station Texas 1999-2004. He is currently an Associate Professor of Physics at Syracuse University Syracuse New York.

## Research Interests

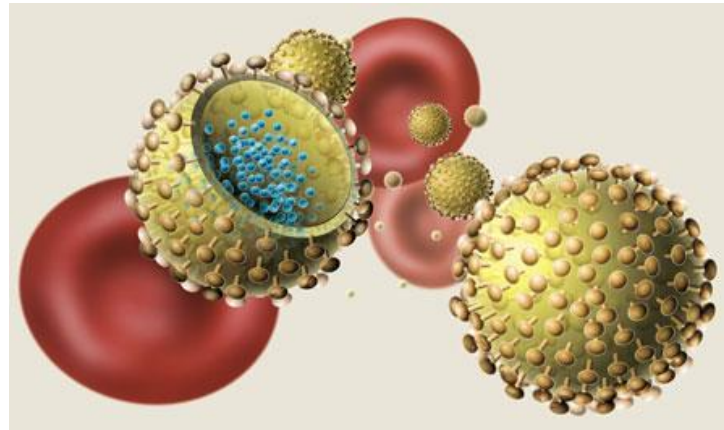
- Single-molecule and membrane biophysics, chemical and synthetic biology, bionanotechnology and nanomedicine, biosensors and functional biomaterials.

# Nanotechnology

- Nanotechnology is the study of particles  $1 \times 10^{-9}$  of a meter in size.
- Over the past decade the field has gained tremendous ground, including nanomedicine.
- Nanomedicine is the application of nanotechnology to do everything from precise delivery of drugs to cell repair.

# Drug Delivery

- Drugs normally injected can be injected.
- The rate at which the drug stays in the body can be manipulated.
- Provides for lower doses needed.

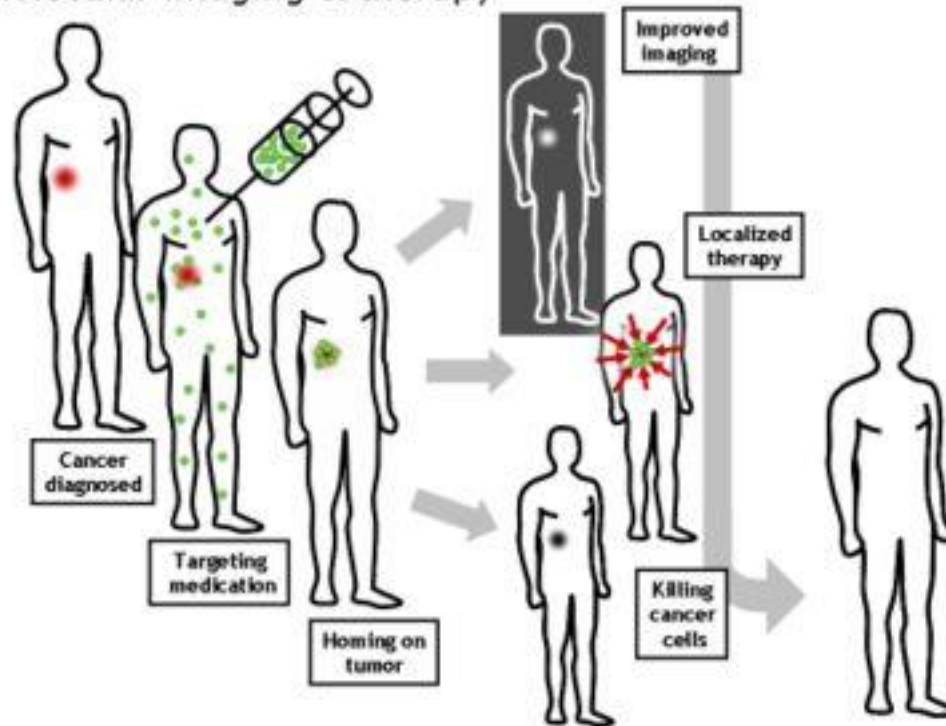


# Improved Imaging of Tumors

- Nanoparticles made of a metal such as magnesium oxide.
- Coated with antibodies found specifically in cancer cells.
- Nanoparticles localize around cancer.
- MRI done would should a more detailed image of where the cancer is.

# Imaging

## Molecular imaging & therapy



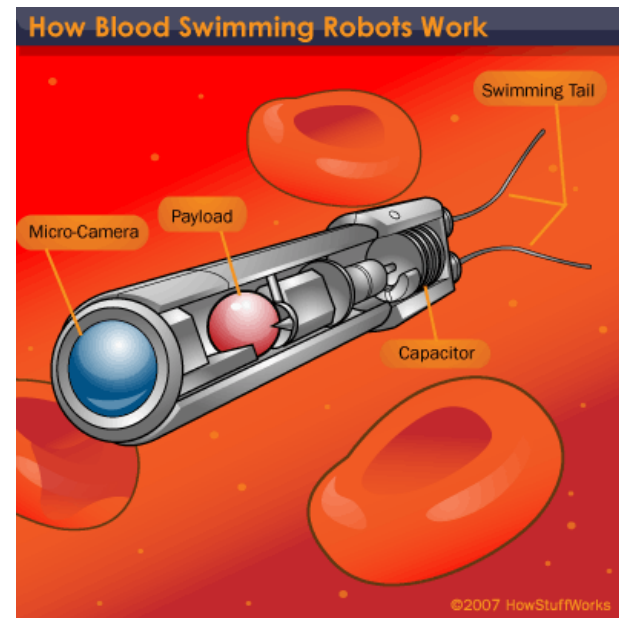
# Cancer Treatment

- Nanospectra Biosciences AuraLase® Therapy.
- Nanoparticles known as Aurashells® are directly injected into the body.
- Localize around tumor because of its “leaky” vasculature.
- Laser emitting infrared waves is inserted into tumor and turned on.
- Nanoparticles heat up and destroy cells.



# Future

- **Nanorobots:**
  - Ability to enter cells and correct DNA or a deficiency.
  - Repair cells, tissue, and even organs.
  - Carry tiny cameras and be powered from the electrolytes in the blood.
  - Break up blood clots or even kidney stones.



*Thank You..!*