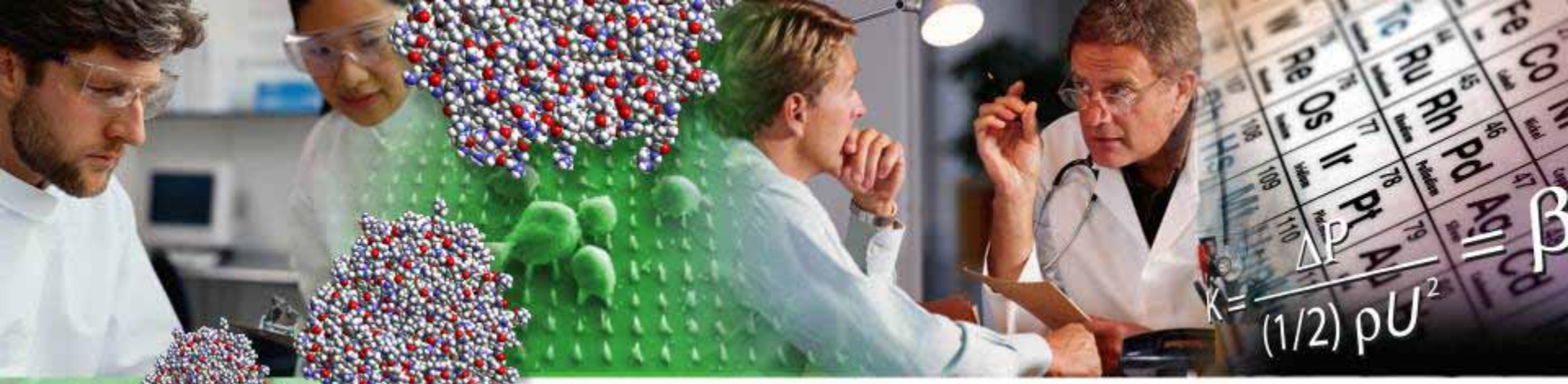

NCI Alliance for Nanotechnology in Cancer

# Cancer Nanotechnology – Opportunities and Challenges

## A perspective from Program Office

**Policy Issues in Nanotechnology and Oncology**
**Washington, DC – July 12-13**

**Piotr Grodzinski, Ph.D.**
*Director, NCI Nanotechnology Alliance*
*National Cancer Institute*

# Nanomedicine 101

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- **Let biology and oncology needs drive technology development**
  - Do not over-engineer – simple is beautiful!
- **Choose your targets and disease applications wisely**
  - Incremental improvement vs solving an unsolved problem
- **Nanotechnology is a team sport – work with others**
- **Decide if you really want to be translational researcher – it is hard**
- **Do not get disappointed with funding and regulatory agencies – we are trying our best**

# NCI Strategy to Accomplish Goals of Contemporary Science

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Ωορκινγ τογετηερ

Engineering

Biology

Medicine

**Working together**

Multi-disciplinary Team Research and Development is Necessity not an Option

- **Medical applications of nanotechnology require multi-disciplinary approach involving both technology developers and technology users in the process of innovation and product development**
- **Large research teams are proving to be more productive and innovative than single investigator efforts in the medical areas where technology involvement is necessary**

# Developing Field of Cancer Nanotechnology

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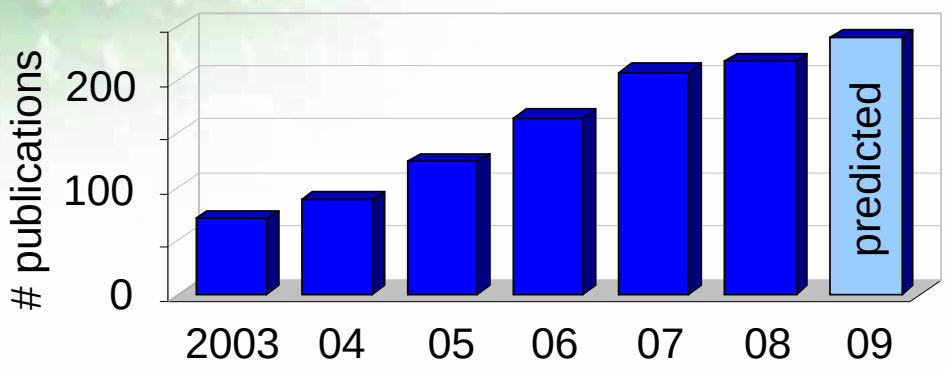
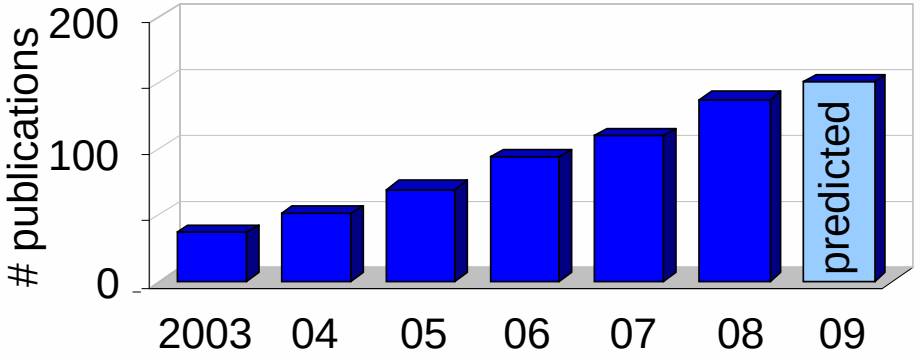
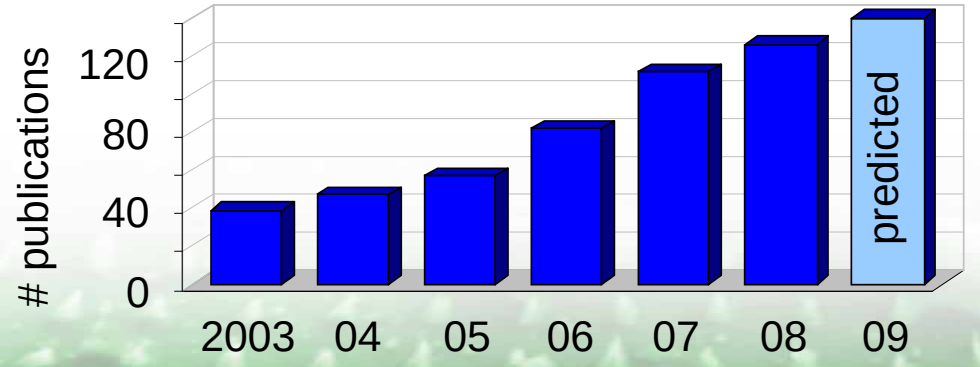
**Cancer AND Nanotechnology**




**Cancer AND Nanotechnology AND Therapy**




**Cancer AND Nanotechnology AND Diagnosis**




**Cancer AND Nanotechnology AND Prevention : 40**

**Nanotechnology AND Metastasis: 45**

# Current Status and Future Strategy

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- **Devices to diagnose the disease**
- **Devices to treat the disease**
- **Devices to monitor the disease in post-treatment stage**

**Translate and develop….**

- **Tools and devices to understand the processes behind the development and spread of the disease**
- **Devices to reverse/alter the progress of the disease**

# Today's Panel

NCI Alliance for Nanotechnology in Cancer

- Barriers to nanotechnology clinical translation

- Multi-disciplinary field - effective models of research and translational funding and collaboration