

# Georgia Tech

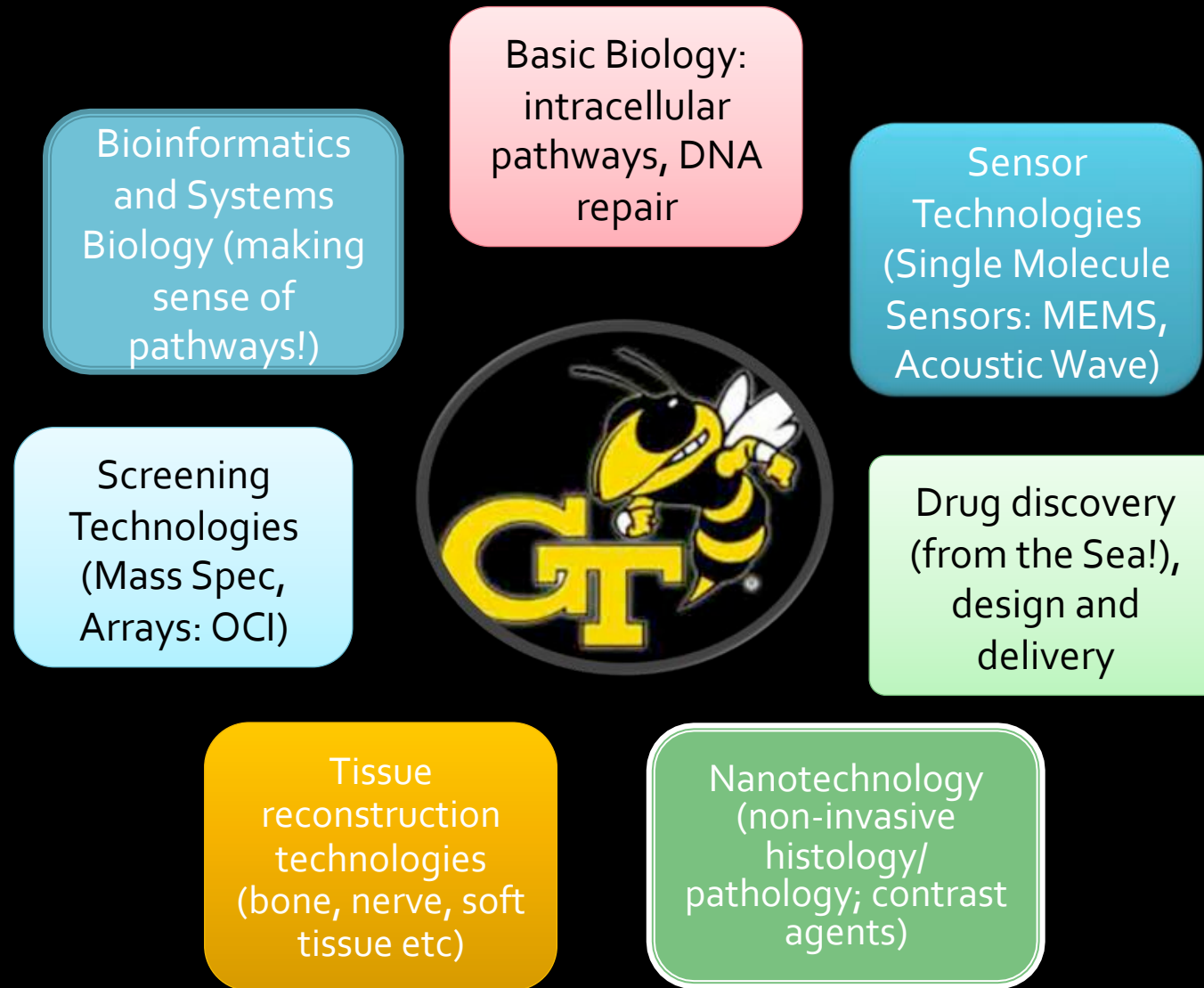
Science & Technology for Personalized Cancer Diagnosis and Therapy

Ravi V Bellamkonda

Professor of Biomedical Engineering at GT/Emory

GCC Symposium, Athens GA  
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# Georgia Technology and Cancer...



**THERE ARE ~45 INVESTIGATORS ACTIVELY ENGAGED IN BATTLING CANCER AT GT**

# Targeted Cancers...

- Ovarian Cancer
- Breast Cancer
- Lung Cancer
- Prostate Cancer
- Brain Cancer/GBM/Pediatric Brain Tumors
- Stem Cells, Signaling and Cancer

# Cancer related activities cut across colleges, schools and institutes

- College of Arts and Sciences (chemistry, Biology, physics);
- College of Engineering (chemical/biomolecular, biomedical, materials science, and electrical and computer engineering)
- Collaborative Cancer Genomics Center (GT/CAU/St Joe's)
- Institute for Bioscience and Bioengineering
- Georgia Tech/Emory Center for Engineering Living Tissues
- Center for Drug Discovery, Design and Delivery
- Center for Cancer Nanotechnology Excellence
- *Institute for Nanomedicine*
- *P41 BioTherapeutics Delivery Center (NIBIB)*



# GT continues investments in the area of cancer...

- Yuhong Fan (Epigenetics, OCI)
- Melissa Kemp (Bioinformatics, BME/IBB)
- Michelle Dawson (Gene therapy and Drug Del for Cancer, ChBE)
- Francesca Storici (DNA repair, Gene Therapy, Biology)
- Ming Yuan (Mathematical Stratification of Cancers)
- Manu Platt (Cancer Stem Cell Signaling)

Robust Cancer Related Peer Reviewed Grants from NIH, NSF & Foundations

# Looking forward...

- Search is Actively Underway for 3 New Endowed Chairs Cancer/Nanotechnology
- 2 Brock Endowed Chairs in Nanomedicine (1 at Emory and 1 at GT)
  - Betty Chair for Nanomedicine

GT Strategic Planning and implications for cancer research at GT

# The Promise of Collaboration is alive and well!

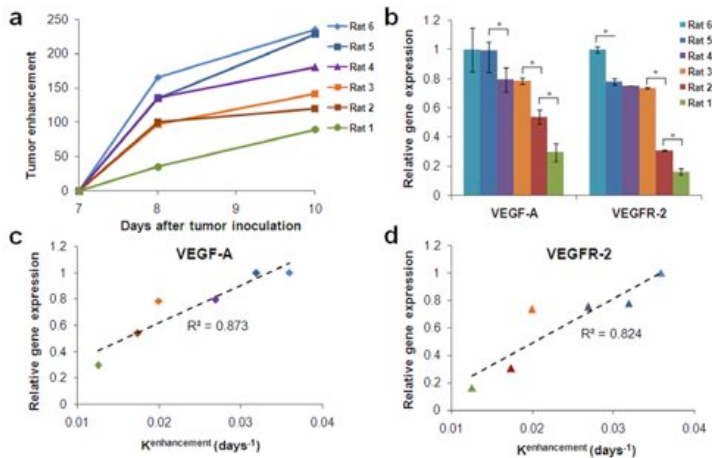
- The Winship Cancer Center
- Predictive Health Institute (GT-Emory)
- Institute for Nanomedicine (GT-Emory)
- Children's Healthcare of Atlanta
- St. Josephs Hospital/St. Joseph's Translations Research Institute
- University of Georgia/Emory (Stem cell biology and relationship to cancer)

**GCC is an important ally, catalyst and force of convergence!**

# Example GT Technology: Imaging Angiogenesis



Vascular Permeability and VEGF



## Image-based determination of 'physiomarkers' for personalized cancer therapy



"...the physiomarker tumor vessel permeability is a significant determinant of drug dosing to tumors, and may have important clinical implications for a personalized diagnosis of the state of individual tumors"

Ananth Annapragada & Ravi V Bellamkonda\*

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Future Oncology  
Editorial

# Some of GT's faces of cancer research...

