

# Research at UNC

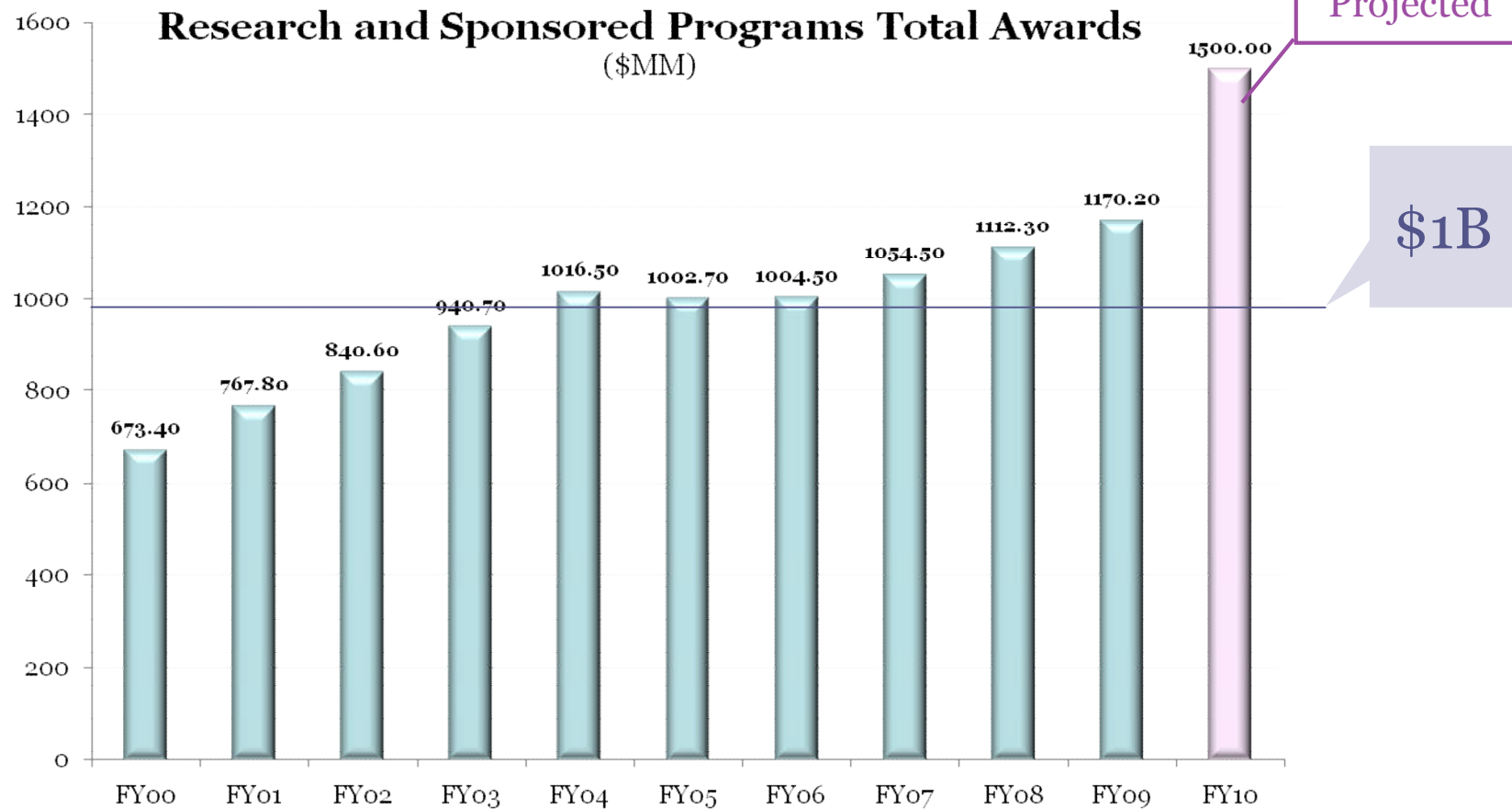
Presentation to the General Assembly

November 10, 2009

Dr. Steven Leath, UNC Vice President for Research



# Research at UNC: a major enterprise

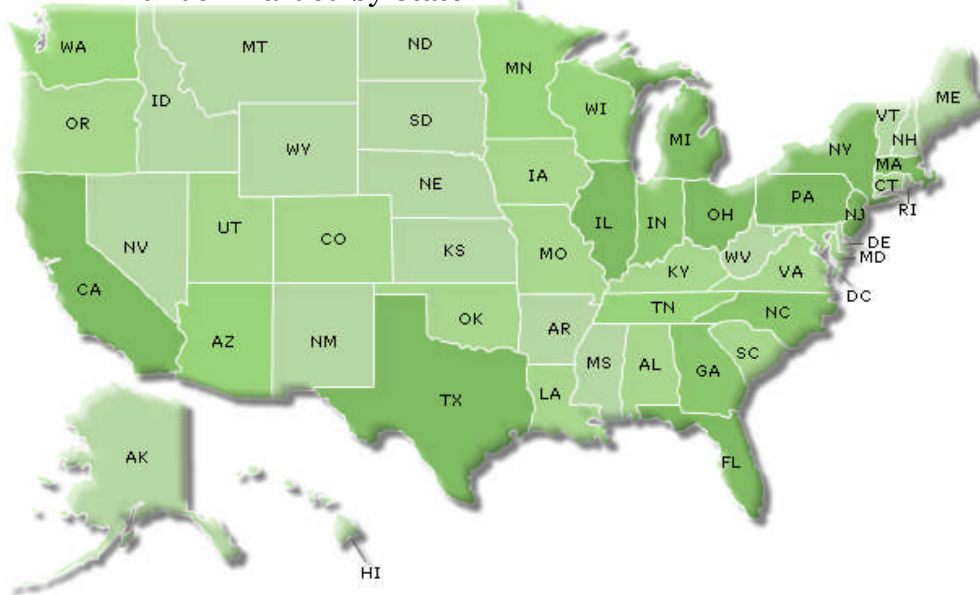


Awards for research and sponsored programs comprises  
~15% of total UNC operating budget

# Research at UNC: nationally competitive



ARRA Funds Awarded by State



- NC has captured >\$6B in ARRA funding
  - >\$135M in competitive sponsored research captured by UNC schools
  - >\$1.2B in proposals submitted

## Notable Awards:

- \$15M NIST/NOAA award for MARBIONC facility at UNC Wilmington
- \$2M for biofuels research at NC State University
- \$900K for STEM teacher recruitment and training at East Carolina
- \$1.2M for genomics research at UNC Chapel Hill

# Research at UNC: organizing our efforts



Currently implementing electronic research administration tools to manage and support research operations

- Robust suite of tools combines to give us a better picture of UNC expertise

**VITAE**  
Profile Manager

Andrew S Johns (ajohns)  
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**SEARCH PROFILES**

- Search Profiles
- Advanced Search
- Linda S Adair
  - General
    - Basic Info
    - Supplemental Info
    - Departments
    - Degree Programs
    - Training Programs
    - Centers
    - Education
    - Employment
  - Research / Professional
  - Teaching
  - Service
  - Biosketches

**Basic Information**

(Approved Version) (Pending Version)

Picture

\* Last Name: Adair

\* First Name: Linda

Middle Name: S

\* E-mail: linda\_adair@unc.edu

\* Position: Professor, Director

\* Primary Dept: Nutrition

Display Name:

Rank:

Birth Date:   
(ex: XX/XX/XXXX)

eRA Commons Username:

Vitae captures information about faculty:

- Publications
- Teaching
- Innovations

# Research at UNC: organizing our efforts



## Faculty Research Profiles:

**Ammerman, Alice S**

Research Profile | Publications

Help us make your profile perfect

**Disorders**

- Cardiovascular Diseases
- Hypercholesterolemia
- Obesity

Ammerman Alice; Leung May May; Cavallo David  
**Addressing disparities in the obesity epidemic.**  
North Carolina medical journal 2006;67(4):301-4.  
Show Abstract

Perrin Eliana Miller; Flower Kori B; Garrett Joanne; Ammerman Alice S  
**Preventing and treating obesity: pediatricians' self-efficacy, barriers, resources, and advocacy.**  
Ambulatory pediatrics : the official journal of the Ambulatory Pediatric Association 2005;5(3):150-6.  
Show Abstract

Perrin Eliana M; Flower Kori B; Ammerman Alice S  
**Pediatricians' own weight: self-perception, misclassification, and ease of counseling.**  
Obesity research 2005;13(2):326-32.  
Show Abstract

Katz Mira L; Gordon-Larsen Penny; Bentley Margaret E; Kelsay Kristine; Shields

**Activities & Behaviors**

- Food Habits
- Motor Activity
- Life Style
- Program Evaluation
- Exercise
- Attitude to Health
- Community-Institutional Relations
- Health Knowledge, Attitudes, Practice
- Risk Reduction Behavior
- Needs Assessment
- Program Development
- Health Behavior
- Outcome Assessment (Health Care)
- Physician's Role
- Consumption
- Social Support
- Physician's Practice Patterns
- Patient Compliance
- Alcohol Drinking
- Emigration and Immigration
- Cooperative Behavior
- Communication
- Mail
- Smoking

**Ammerman, Alice S**

Department  
Nutrition

Email  
ammerman@unc.edu

## Institutional Research Profiles:

Home > Expert search by concept

Search experts by concept

by last name

**20 Experts found**

- Bangdiwala, Shrikant I
- Chambless, Lloyd E
- Maeda, Nobuyo
- Couper, David J
- Rosamond, Wayne D
- Pomp, Daniel
- Nakamura, Jun
- Ammerman, Alice S
- Vupputuri, Suma
- Jennette, John C
- Beck, James D
- Catellier, Diane J
- Prazma, Jiri
- Berry, Diane C
- Clarke-Pearson, Daniel L
- Runge, Marschall S
- Keagy, Blair A
- Samuel-Hodge, Carmen D
- Weinberger, Morris
- Patterson, Winston Campbell (Cam) C

**Your search terms**

- Diabetes Complications
- Hypertension
- Obesity

**Refine search by adding Concepts**

**Disorders**

- Coronary Disease
- Atherosclerosis
- Overweight
- Body Mass Index

**Chemicals & Drugs**

- Smoke
- Blood Coagulation Factors
- Lipoprotein(a)
- Factor VIII
- von Willebrand Factor
- Fibrinogen
- Cholesterol, HDL

**Procedures**

- Nutrition Surveys
- Risk Assessment
- Education

# Research at UNC: focused on issues



- UNC operates >170 research centers
  - Research centers have a combined operating budget of \$450M, 85% of which is non-state funds
- Of 15 NSF Engineering Research Centers nationally, 2 have been awarded to UNC campuses:
  - ERC for Revolutionizing Metallic Biomaterials at North Carolina A&T
  - ERC for Future Renewable Electric Energy Delivery and Management at NC State
- UNC Chapel Hill is one of 14 academic health centers nationally awarded the NIH Clinical and Translational Science Award - \$61M over 5 years
- Fayetteville State University is developing a center for defense and homeland security that will advance North Carolina's efforts to connect assets in this sector

# Research at UNC: focused on issues



## North Carolina Research Center in Kannapolis



- Research center now open and operating with 94 UNC researchers and support staff
  - including >12 graduate students
- DHMRI core labs now operational
- Partners are coming on-board: RCCC and private industry
  - Dole
  - Sensory Spectrum
  - Lovelace Respiratory
  - Anatomics
  - Carolinas Healthcare
  - Cabarrus Health Alliance



# Research at UNC:

transferring technology - research results in products and services



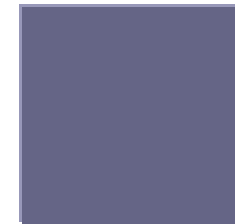
## From UNC Chapel Hill technology:

- Entegriion Stasilon® wound dressing
- Tornier Intrafocal Pin Plate



## From North Carolina State University technology:

- Bio UD™ Insect Repellent
- SmartFresh™ Quality System for produce
- Invincibelle™ Spirit Hydrangea



## From East Carolina University technology:

- SpeechEasy® anti-stuttering device
- Early stage Multiple Sclerosis vaccine



## From UNC Greensboro:

- Prevention Strategies Drug and Alcohol Program
- Learning Together (L2)™





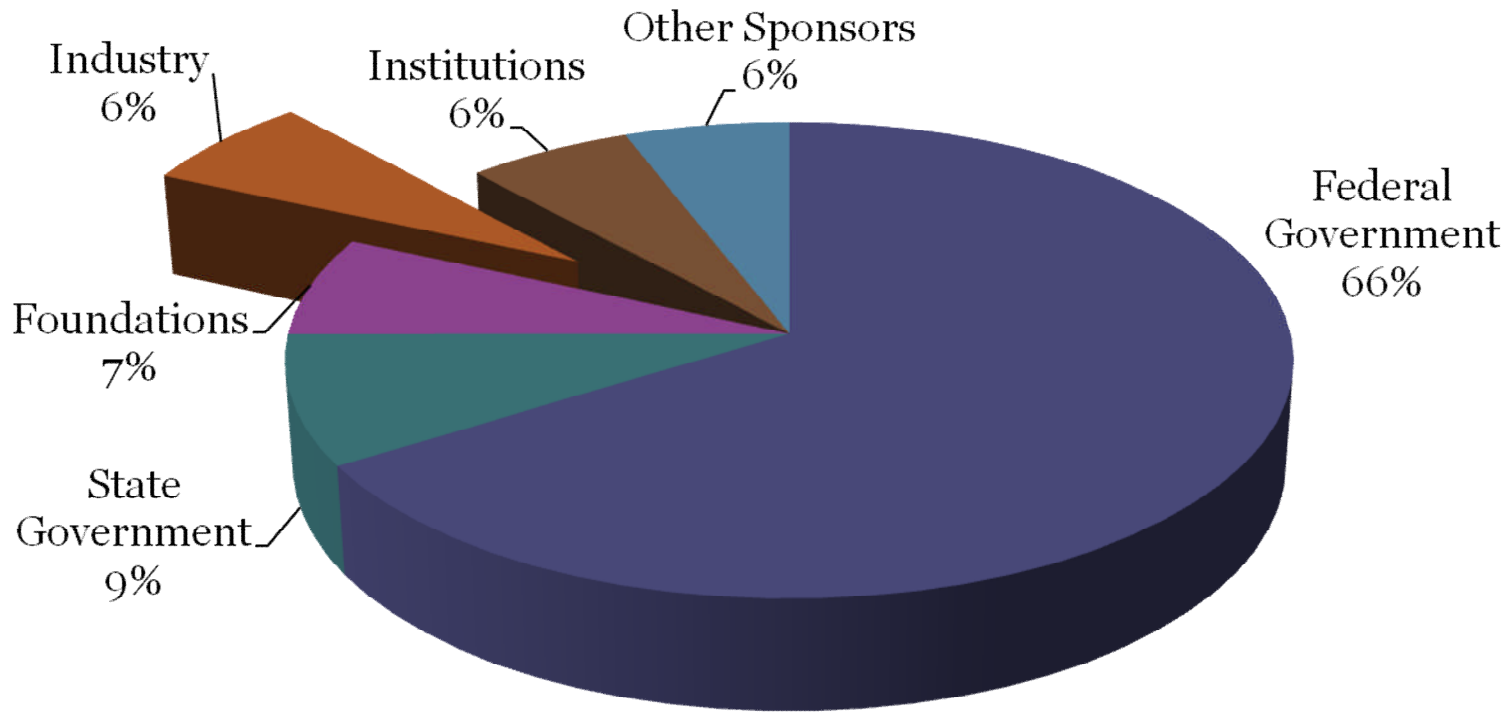
# Research at UNC: licenses and startups



- In 2006 six UNC campuses disclosed 435 inventions and filed 272 patent applications
  - Generated revenues of \$5.4M from companies licensing UNC technology
- In the last 10 years, UNC has formed >100 startup companies
  - Startups develop in-house from licensable UNC technology



# Research at UNC: expanding our portfolio



UNC FYo8 Sponsors

# Research at UNC: implications from UNC Tomorrow



- North Carolina citizens expect UNC to contribute more to the well-being of the state overall
- The report of the UNC Tomorrow Commission charges UNC to
  - Expand the state's economy through increased and improved translation and commercialization of university discoveries
  - Translate research and scholarship to broader audiences

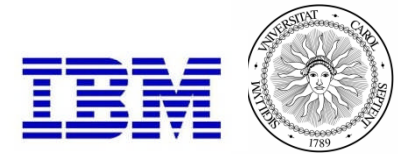
# Innovation and Technology Development



Through the Innovation and Technology Development Initiative, UNC is working to become the world leader for research partnerships that result in real-life solutions to some of society's toughest problems



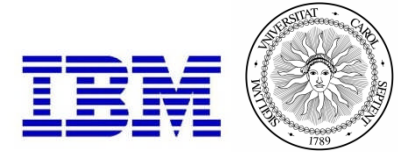
# Innovation and Technology Development



## The UNC Innovation and Technology Development Initiative in collaboration with IBM

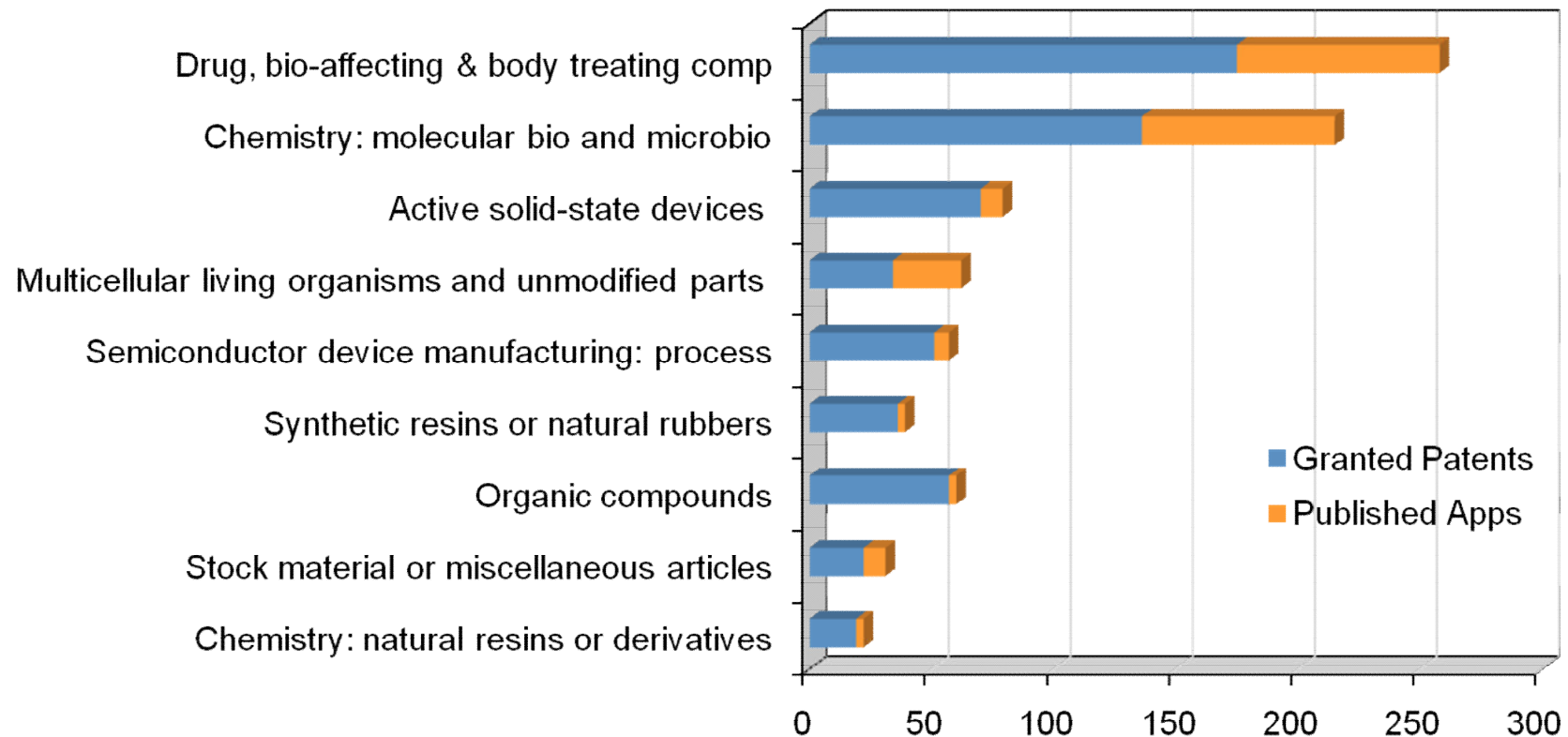
- A mission to pioneer new ways to innovate and commercialize technologies in collaboration with industry and other partners
- Six recommendations in three focus areas for increasing and deepening the impact and benefits of UNC research for the University and North Carolina overall
  - Excel in Strategic Research Areas
  - Support Innovative Individuals
  - Model Inspired, Efficient Technology Development Processes

# Innovation and Technology Development



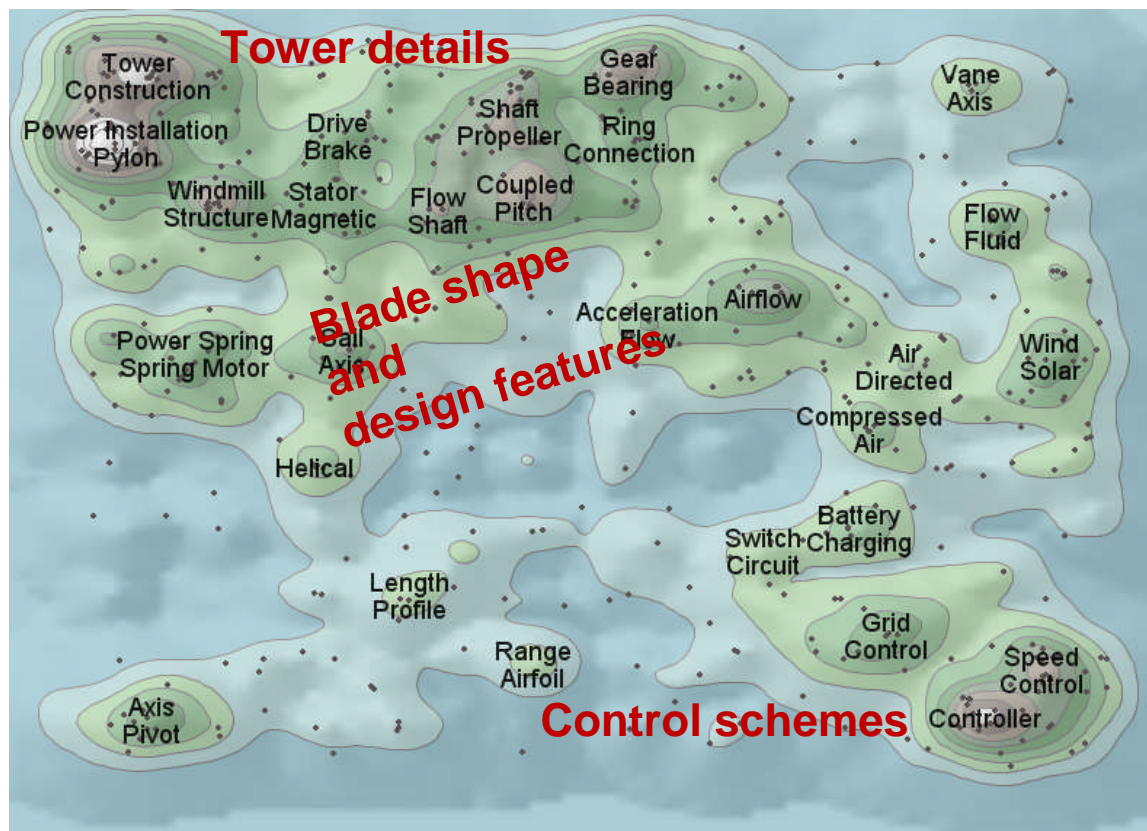
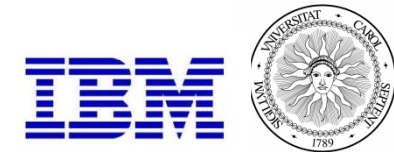
## UNC System Patent Classification

Analysis of top primary US patent classifications indicates majority of patent activity focused in Drug and Chemistry areas



# Innovation and Technology Development

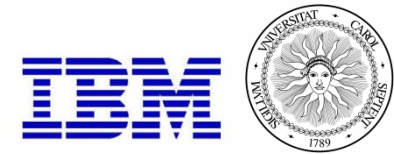
## Wind Power - ThemeScape View



- An overview of the landscape, based on patent titles and abstracts, indicates general themes associated with control schemes, blade shape and design, tower construction
- Ability to drill down further into thematic areas, analyze by time period, etc.



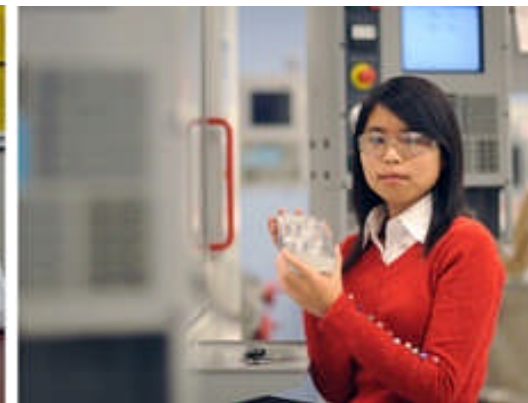
# Innovation and Technology Development



Niche Specialties, Collective Strengths

## Center for Rapid Product Realization at WCU

- Working with businesses and universities to design and implement products

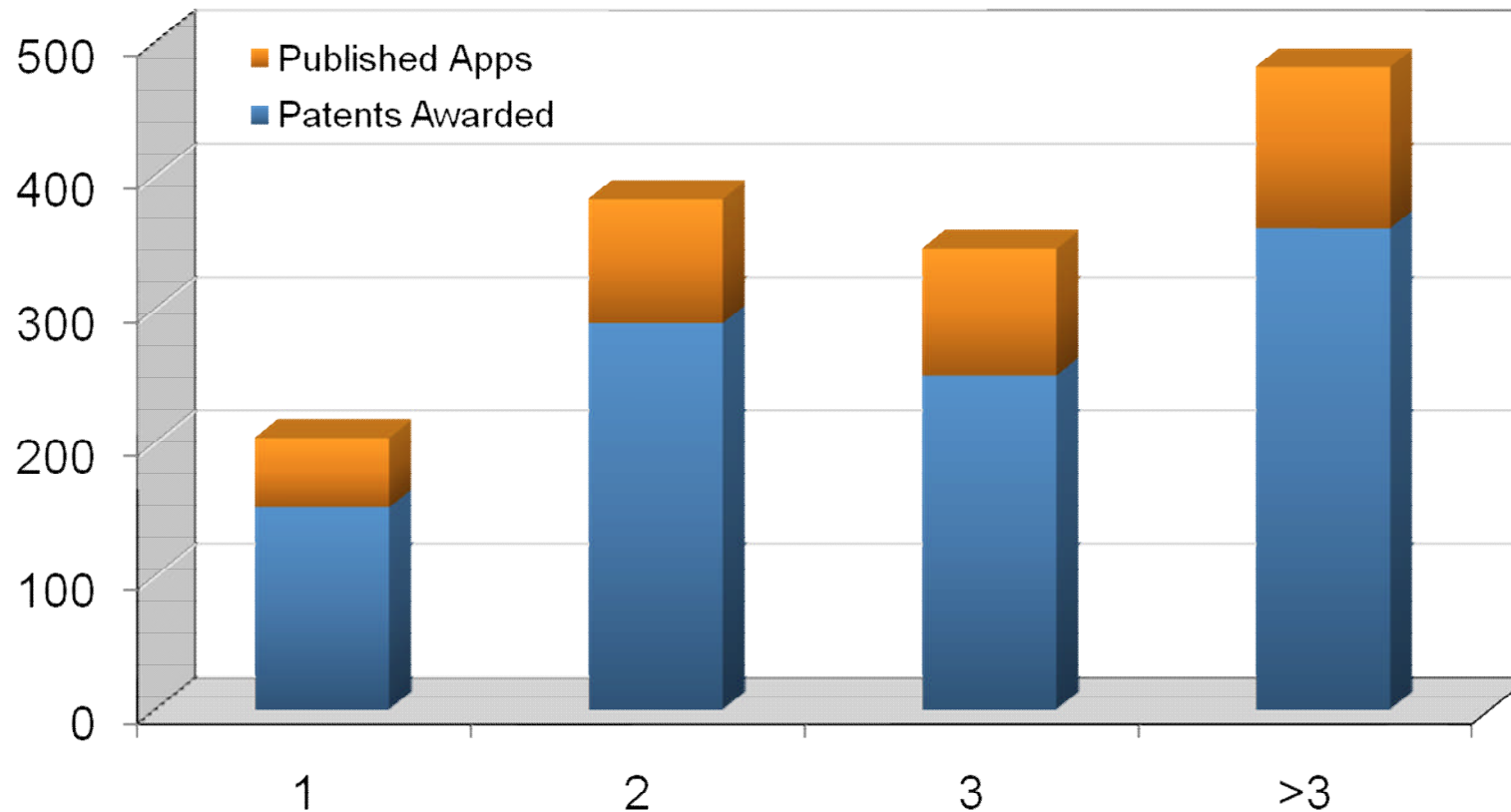


# Innovation and Technology Development



## Number of Inventors Per Patent

Collaboration among UNC System inventors - 14% single inventor, 27% two inventors, 24% three inventors and 34% have more than 3 inventors. Therefore, almost 60% of all activity in collaboration with 3 or more inventors

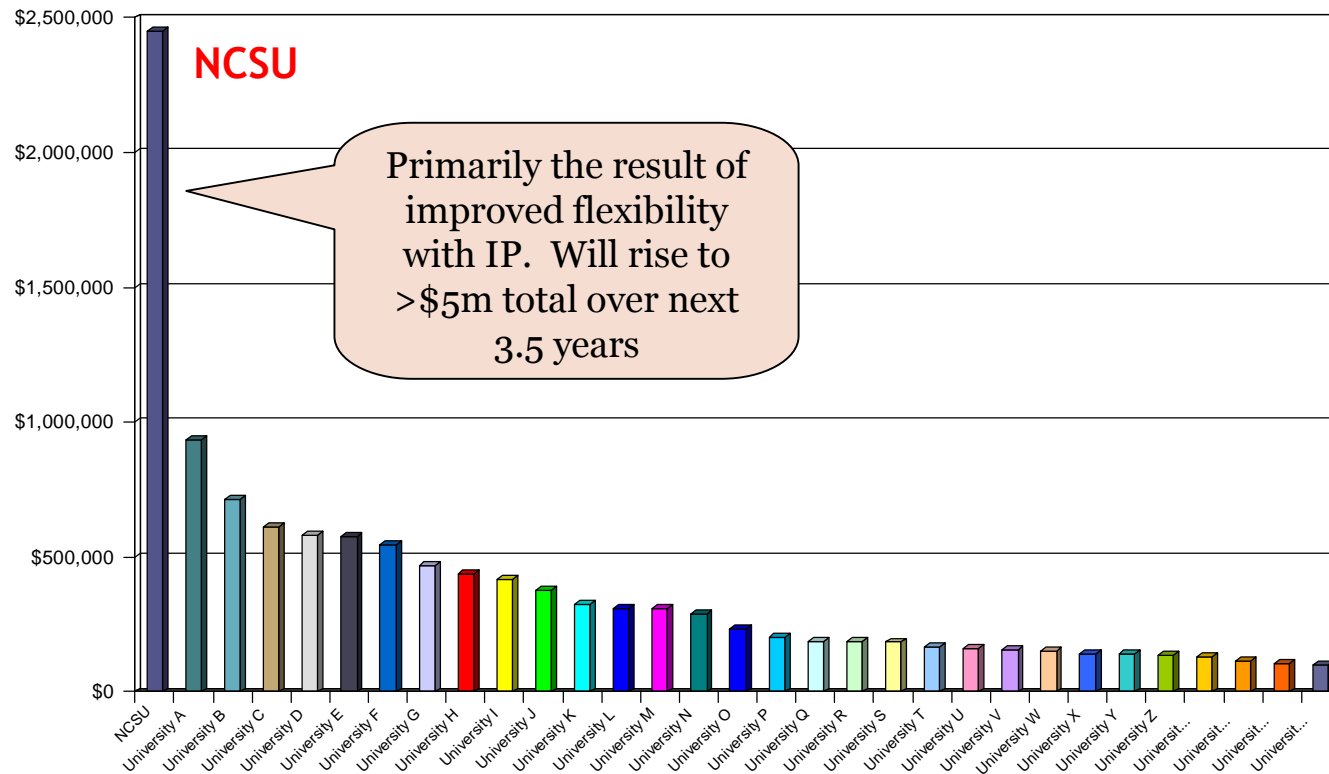


# Innovation and Technology Development

NC STATE UNIVERSITY



Bayer Environmental Science: Grant in Aid, by University; 2000 - 2009

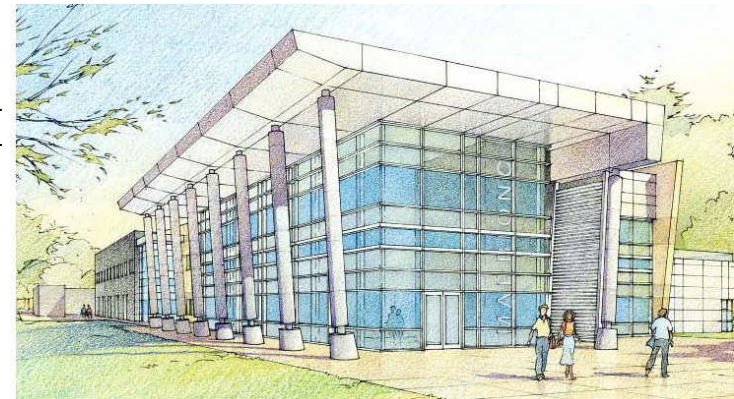


Building long-standing, robust relationships with industry benefits the university, the industry and the people of NC

# Innovation and Technology Development



- Administered by UNC Wilmington's Center for Marine Science, MARBIONC develops marine biotechnology discoveries into health, food and energy products, rather than licensing the intellectual property before development
- This process helps the university capture more of the discovery's value
- MARBIONC was recently awarded a \$15M ARRA grant for a new facility



# Innovation and Technology Development



Implementation throughout the year will result in:

- Identification and expansion of campus' unique research strengths
- Increased inter-and intra-campus collaboration towards strategic goals
- Recognition of faculty entrepreneurial activity in RPT
- Simplification of IP negotiations towards improved industry partnerships

# Innovation and Technology Development

UNC has a vision to be better, faster, friendlier and simpler to work with – to be the “go to” University companies come to first for research collaborations and innovations.

# Research at UNC: Summary



- Supporting robust campus research operations
  - New eResearch Administration tools
  - Grants administration, export control, overall campus operational support
- Enabling opportunities for timely, issue-focused UNC research centers and projects
  - NC Research Center at Kannapolis
  - NSF, NIH, and other inter-disciplinary centers
- Translating UNC discoveries and innovations for the benefit of NC citizens
  - Innovation and Technology Development initiative
- Growing the Research Enterprise
  - American Recovery and Reinvestment opportunities
  - Developing strategic growth areas
  - Mentoring smaller campuses

UNC research operations directly support the UNC Tomorrow initiative