Applied Physical Sciences

LAUNCHING OUR FIRST NEW COLLEGE SCIENCE DEPARTMENT IN 40 YEARS

Peter Mucha
Chair, Applied Physical Sciences
March 27, 2014
Discoveries lead to possible applications

Applications drive new questions about fundamental understanding
What is Applied Physical Sciences?

Sciences

Engineering
Discovery and Innovation Intertwined

Sciences

APPLIED PHYSICAL SCIENCES

Health, Water, Energy

Engineering
We Must Be Positioned for Future Funding

8.6% Annual Growth

3.4% Annual Growth

Other Funding
ARRA Funding ‘09
NIH Funding Supports Convergence
Task Force and Strategic Planning

A Strategic Roadmap for Applied Physical Sciences in The College of Arts & Sciences The University of North Carolina Chapel Hill

Submitted to Dean Karen Gil The Applied Sciences Task Force July 2012

UNC APSc: Strategic Planning Project

Advisory Committee Meeting #3 September 24, 2013
Our Starting Team is Strong

Tom Meyer
Mike Ramsey
Peter Mucha
Rene Lopez
Wei You
Nancy Allbritton

Chemistry/CCGS
Mathematics
Physics & Astronomy
Chemistry/BME

Chemistry/EFRC
Chemistry/APSc
Chemistry

$40 Million of Research Awards over 4 Year Period
Targeted drug delivery to cancer cells
Developing lab-on-a-chip applications
Making solar energy more accessible
We Must Expand Our Team

To Be Positioned for the Future
And Focus on Convergence

Applied Physical Sciences

For Global Leadership
What If We Could Develop...

- $1 vaccines for influenza and other diseases
- New materials to eliminate agricultural water runoff pollution
- Wearable biosensors for surgical patients to recover at home
- Lab-on-a-chip technology that enabled common handheld units for detection of water-borne toxins
What If We Could Advance Materials Central To Our Energy Future?

Economically preferable solar energy

Solar storage that was essentially FREE
### Examples of UNC Basic Research Strengths

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<th>Subject</th>
<th>Rank</th>
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<tr>
<td>Biology</td>
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<td>Primary Care</td>
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### Translational Role of New Unit

- Strong established tradition of cross-disciplinary collaboration
- Patents
- Start-Ups
- Corporate Sponsors
- Corporate Partners
- Federal Funding
Non Building Funds
$100 Million

- $30M personnel: faculty, staff and graduate students
- $50M faculty start-up packages and facilities (incl. CHANL)
- $10M renovate existing space
- $10M “Creatorspaces Hub”

Building Funds ~$150 Million

Investment Across 10 Years
CREATING

Use-inspired basic research

Undergraduate Research

TEACHING

Entrepreneurship Minor

APPLYING

Startups, Corporate Partnerships, Licensing
“Ideas to Impact”
“...foster the success and prosperity of each rising generation...”
Thank You