



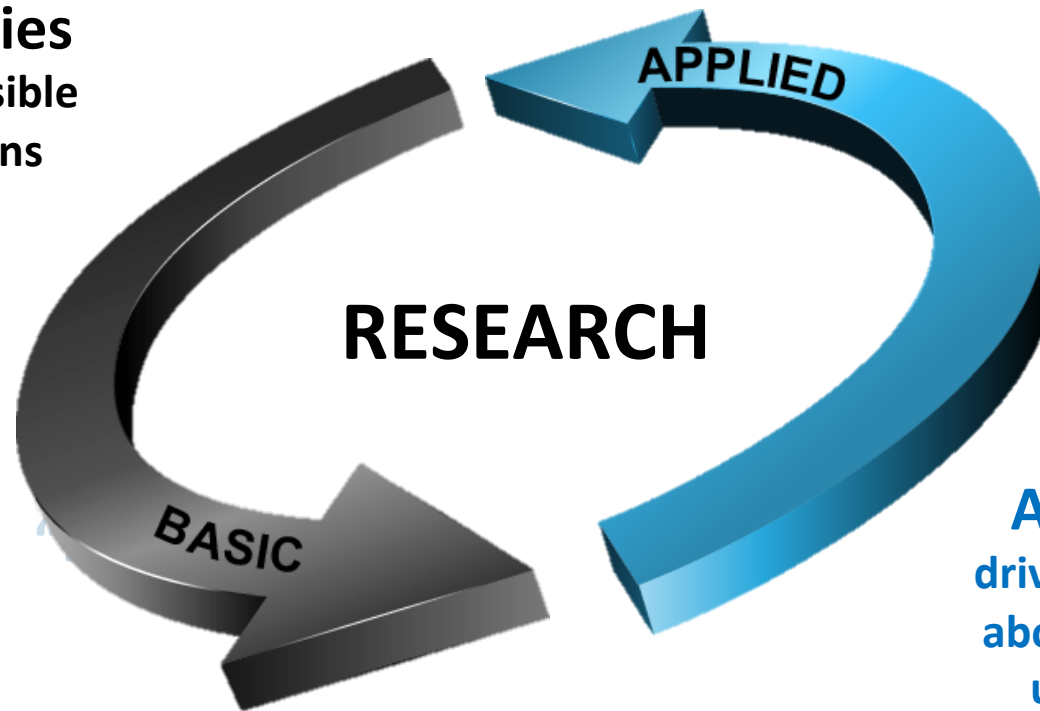
THE UNIVERSITY  
*of* NORTH CAROLINA  
*at* CHAPEL HILL

# 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

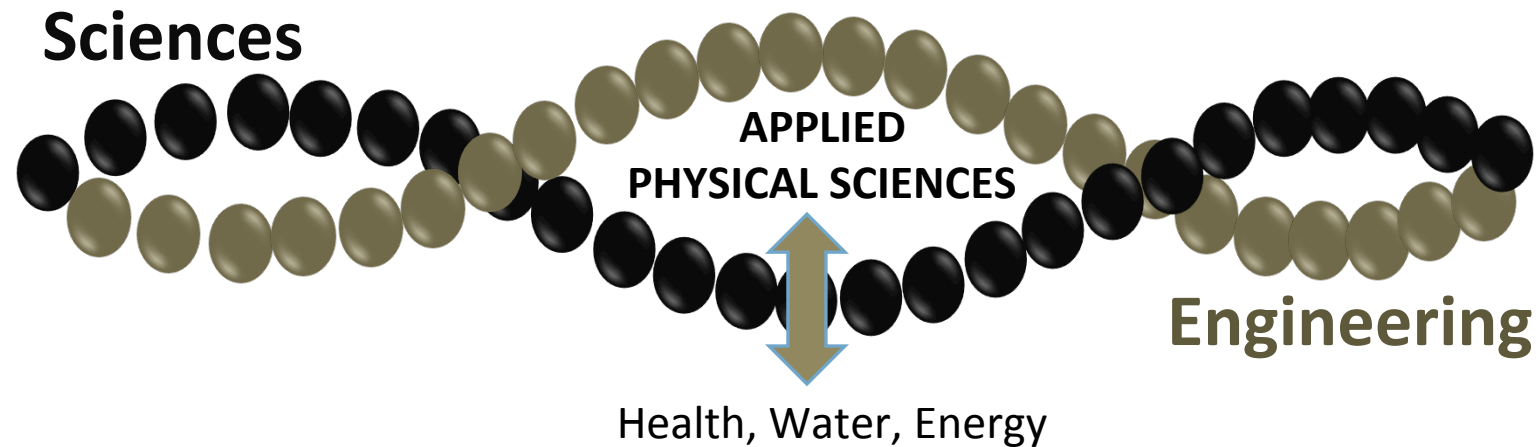
# What is Applied Physical Sciences?

**Sciences**



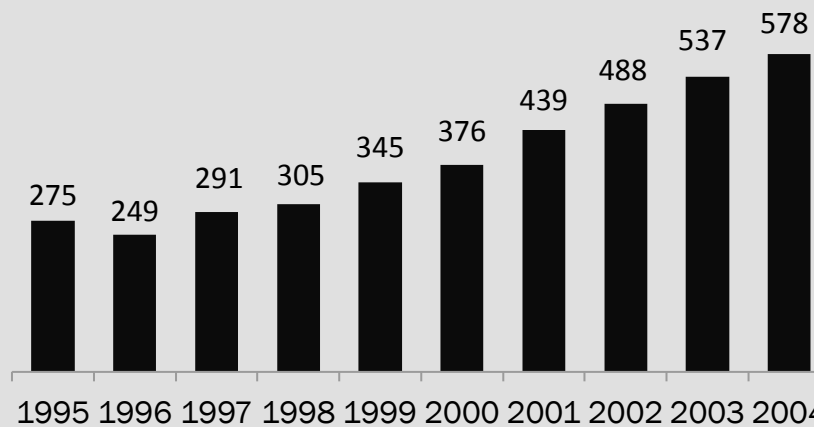
**Engineering**

# Discovery and Innovation Intertwined

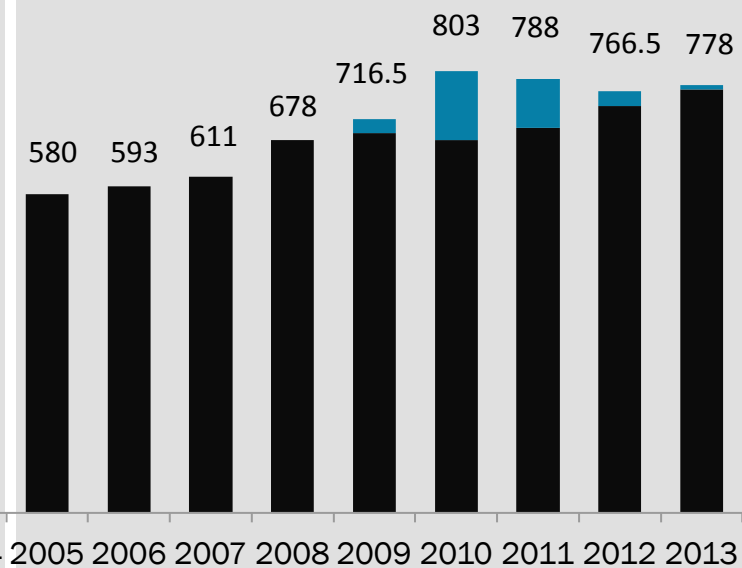


# We Must Be Positioned for Future Funding

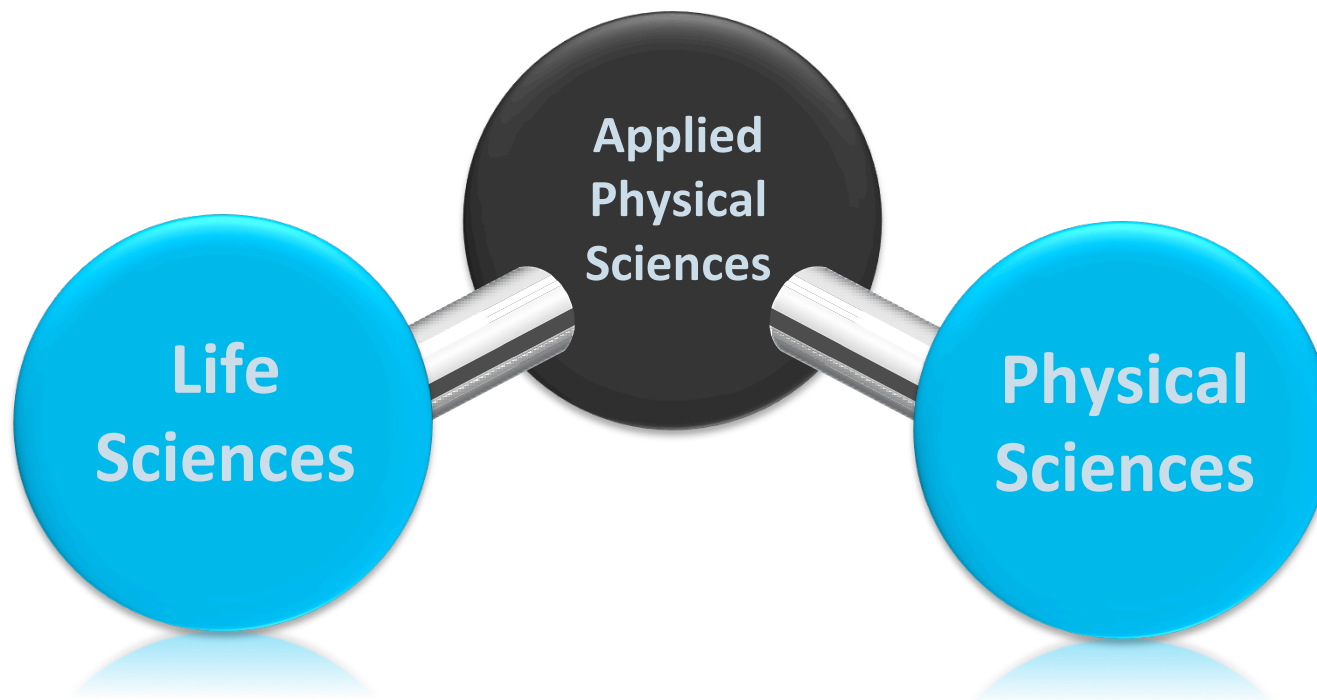
8.6% Annual Growth



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

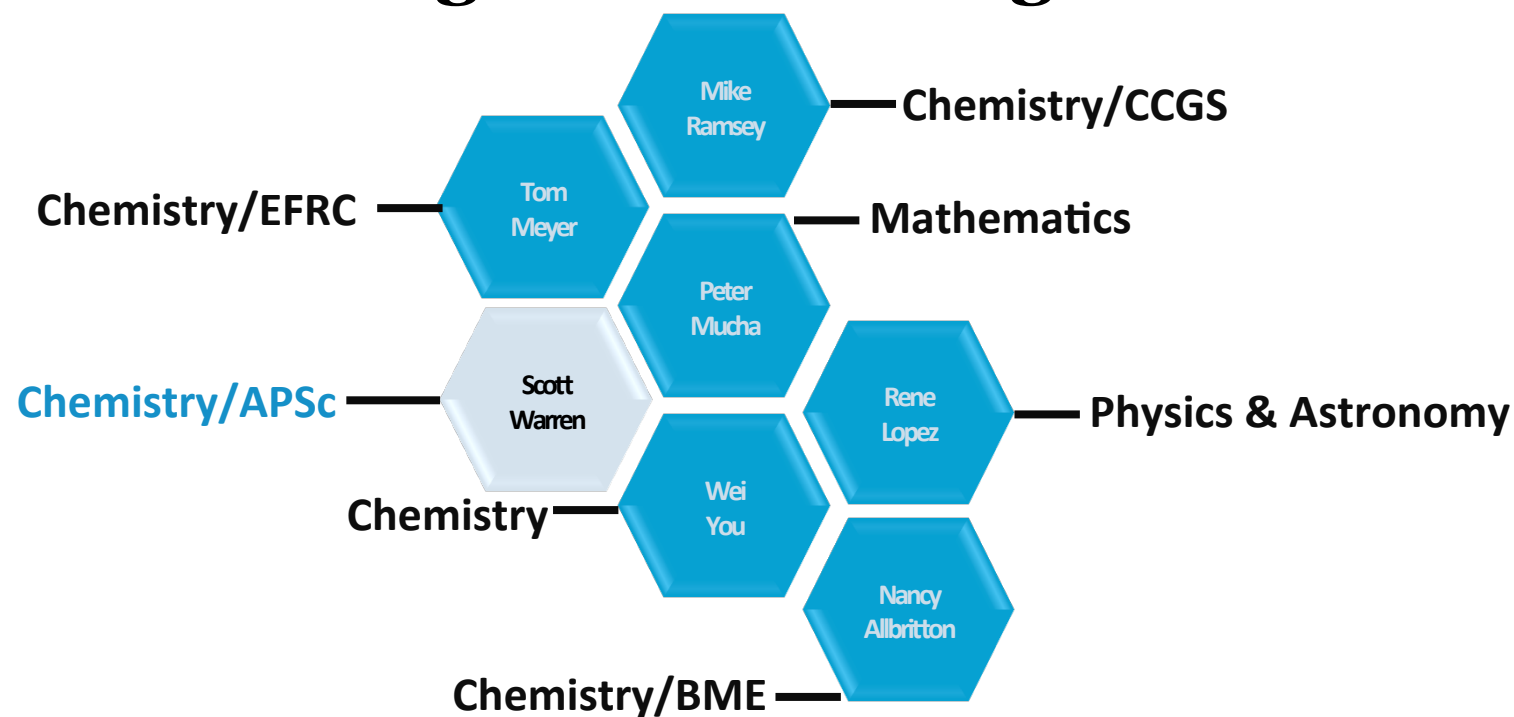
Submitted to Dean Karen Gil  
The Applied Sciences Task Force  
July 2012

## UNC APSc: Strategic Planning Project

Advisory Committee Meeting #3  
September 24, 2013

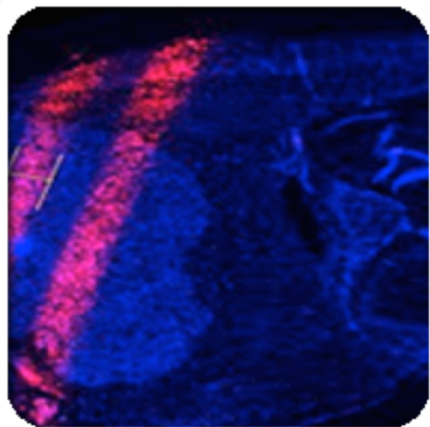


# Our Starting Team is Strong

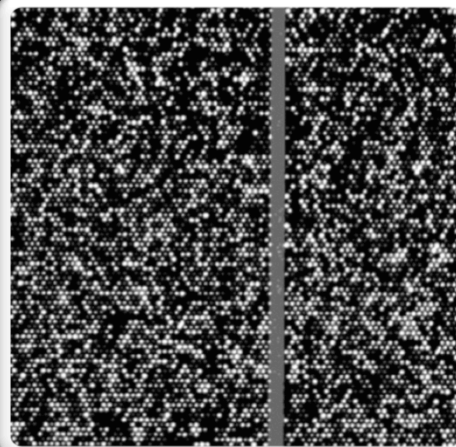


**\$40 Million** of Research Awards over 4 Year Period

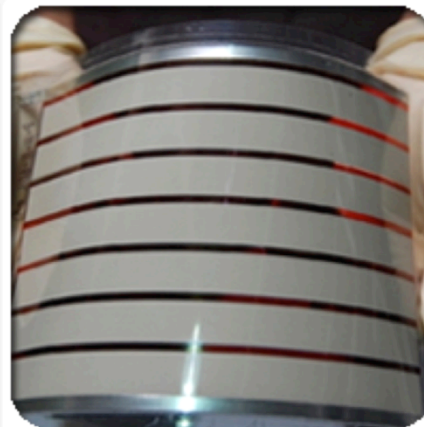




**Targeted drug  
delivery to  
cancer cells**



**Developing  
lab-on-a-chip  
applications**



**Making solar  
energy more  
accessible**

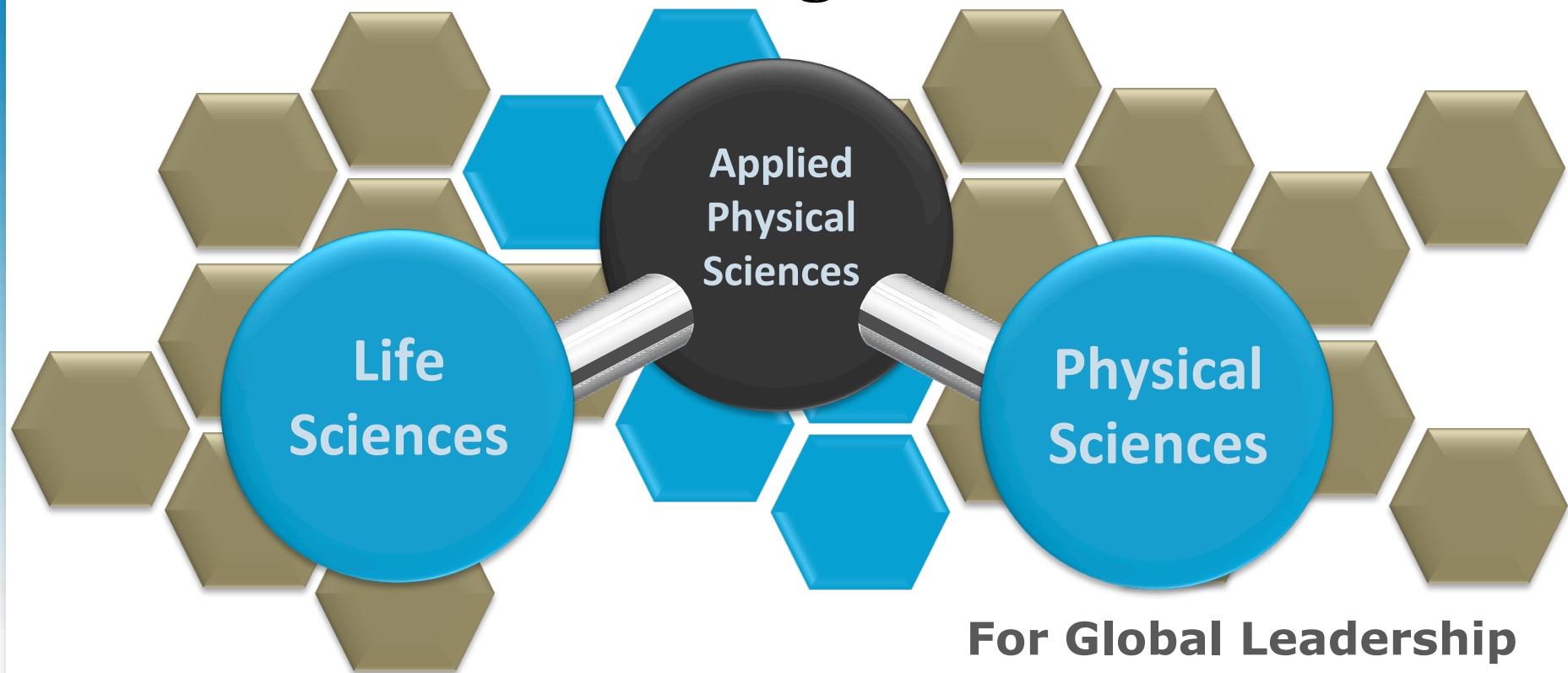
# **We Must Expand Our Team**



**To Be Positioned for the Future**

Applied Physical Sciences at UNC – Chapel Hill

## **And Focus on Convergence**



**For Global Leadership**

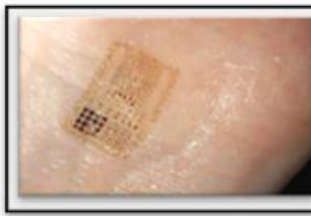
# What If We Could Develop...



**\$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**

# Complement and Enhance Basic Strengths

## Examples of UNC Basic Research Strengths

Biology #24	Chemistry #13	Statistics #10
Psychology #12	Biophysics #9	Computer Science #20
Public Health #2	Pharmacy #2	Medicine Primary Care #1

## Translational Role of New Unit

Strong established  
tradition of  
cross-disciplinary  
collaboration

Patents  
Start-Ups  
Corporate Sponsors  
Corporate Partners  
Federal Funding

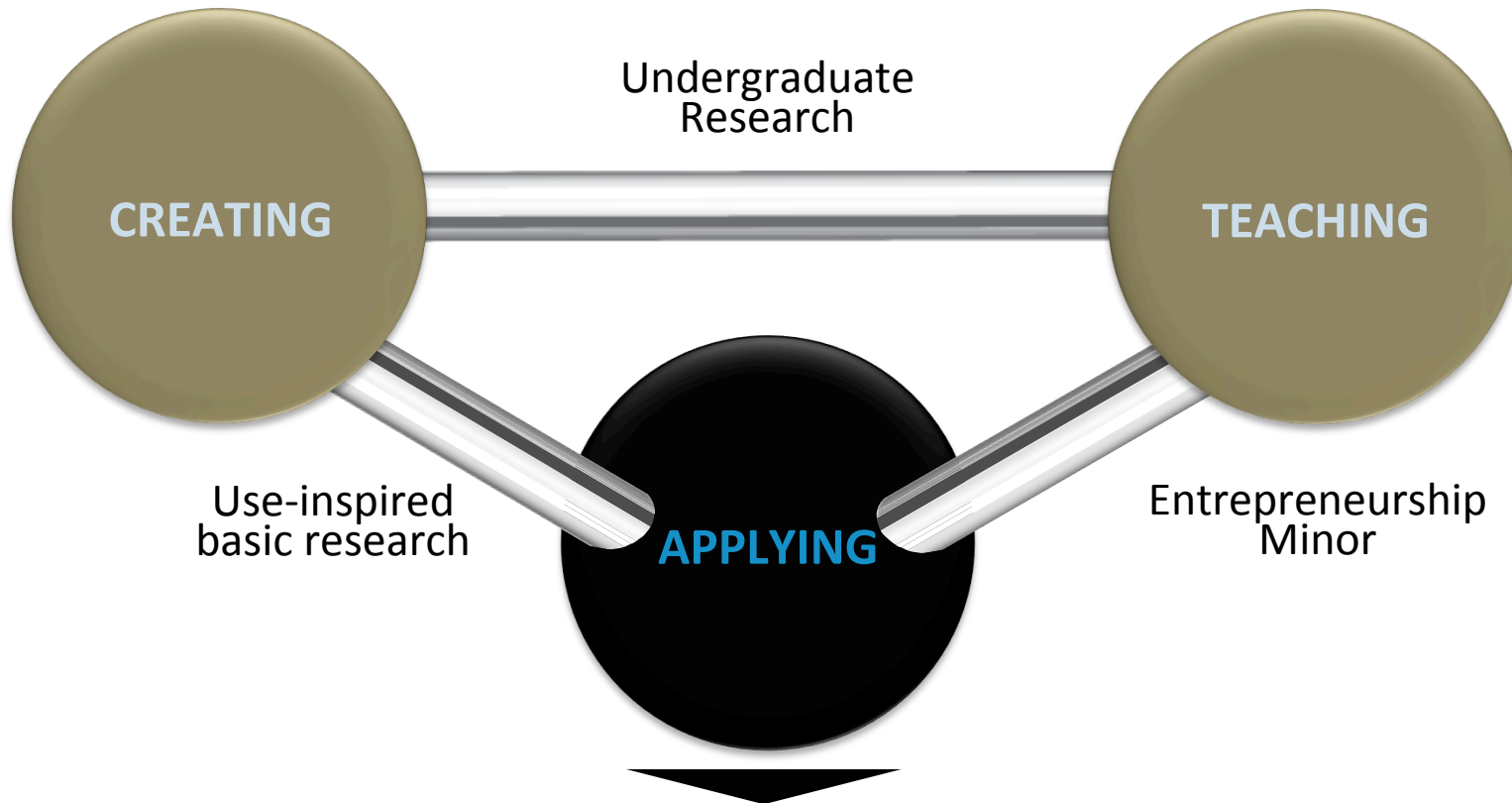
## Non Building Funds \$100 Million

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

## Building Funds ~\$150 Million



**Investment Across 10 Years**



**Startups, Corporate Partnerships, Licensing  
“Ideas to Impact”**





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## Campus Mission

**“...foster the  
success and  
prosperity of  
each rising  
generation...”**



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**Thank You**