

# Research at William and Mary

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February 4, 2016



WILLIAM & MARY

CHARTERED 1693

**Provost:**

**We are stronger because we do research,  
that universities do research in spite of cost  
that WM does a special blend (W&M Special Sauce)**

I want to reinforce and add evidence.

- Research is a public good
- University Roles (contentious)
  - Research is NOT “the problem”
  - Research is part of “the solution”

Research is a Public Good

Numerous studies of research productivity exist. The most recent, **Furthering America's Research** – NAS NAE NAM NRC 2014

We use the above report which cites dozens of econometric analysis along with

- Higher-order effects of “Social Return” and “Knowledge Banks” from **Center for American Progress** (2012)
- Macroeconomic analyses of ROI by C.I. Jones Stanford University and John C. Williams **Board of Governors Federal Reserve** (aggregated I/O)
- **Frontier Economics Ltd.** (2014) which did production function analyses by sectors along with preliminary thoughts from microeconomic views (disaggregated - STAR Metrics)

## NAS Results: Annualized Rate Of Return (ROR) **of Research to Industry**

**Privately (self) funded** ROR to industry (**rival, exclusive**) – **20-25% (median), 30% mean – short 2-3 year return times. Faster depreciation.**

**Public funded** ROR to private sector (non-rival, non exclusive) **-20% or greater**, for example , agriculture seeing 30-40% . **Depreciation is very slow**, if at all.

**Social benefits: smart communities** (mostly intangibles- training - organized capital - open information access – infrastructure – software, etc.) to industrial production and commerce - **ROR of >30-40%, and in some cases is 2-3 times higher.**

## Take away message from National Academies:

**“...three crucial pillars of the (output of the) research system: a talented and interconnected workforce, adequate and dependable resources, and world-class basic research ...”**

No mention of humanities here- but this is NAS NAE NAM

# University Role



## **MAJORITY REPORT: University is**

- **A place for deep thought and deep learning**
- **A stable place, a base that provides shelter from the drama of daily life**
- **A safe place to argue about everything**

## Minority Report

Michael Oakeshott :

“A university ...**whole intellectual capital which composes a civilization....**  
**recovering** what has been lost,  
**restoring** what has been neglected...  
**reconsidering, reshaping, reorganizing ...**  
**reissuing and reinvesting.** “

**Necessary but not sufficient.**

Universities are not just knowledge museums with good docents.

Majority view: Oxford Don left out

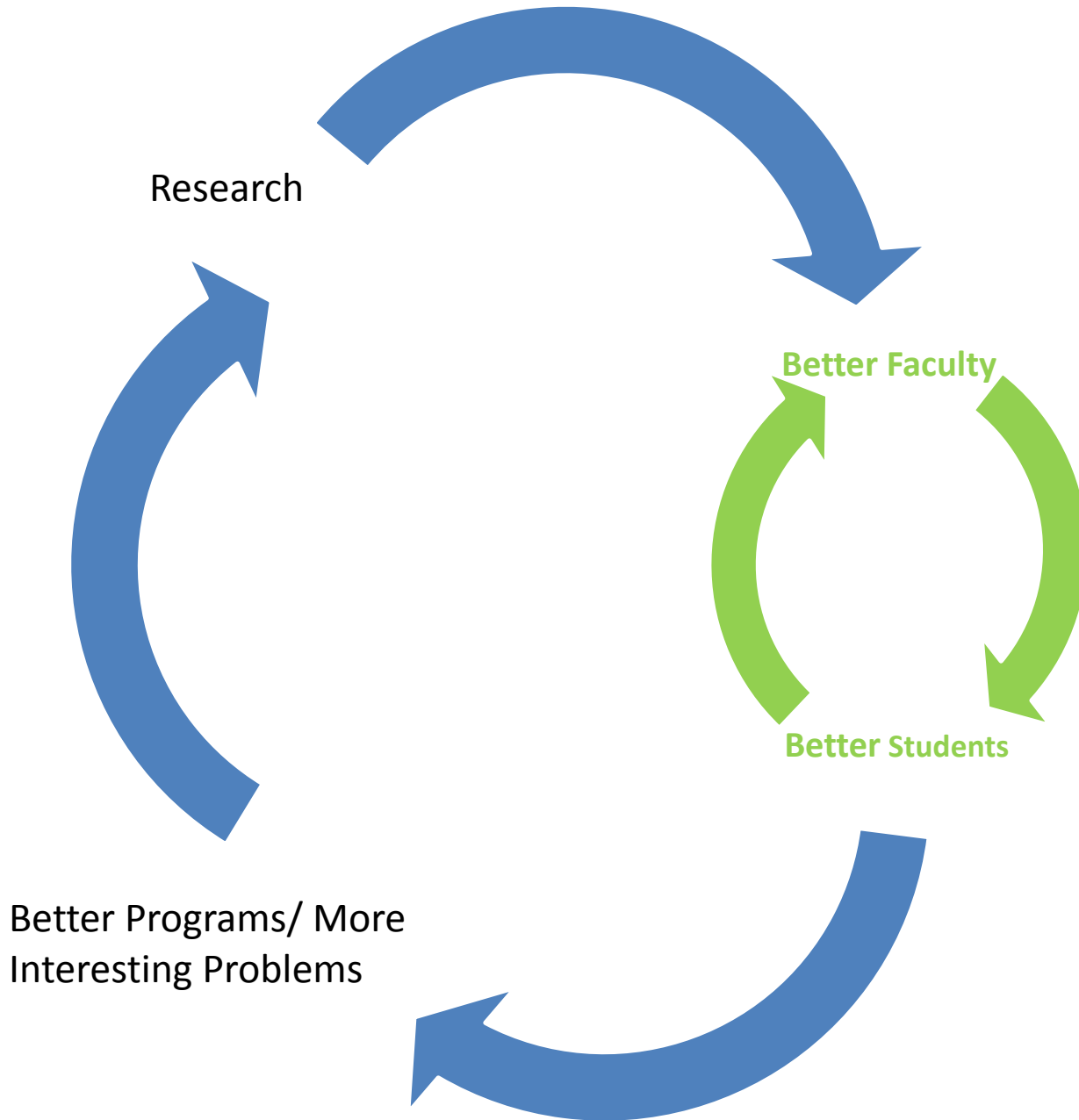
**Create** new knowledge, forms, expressions

**Discover** new phenomena and facts

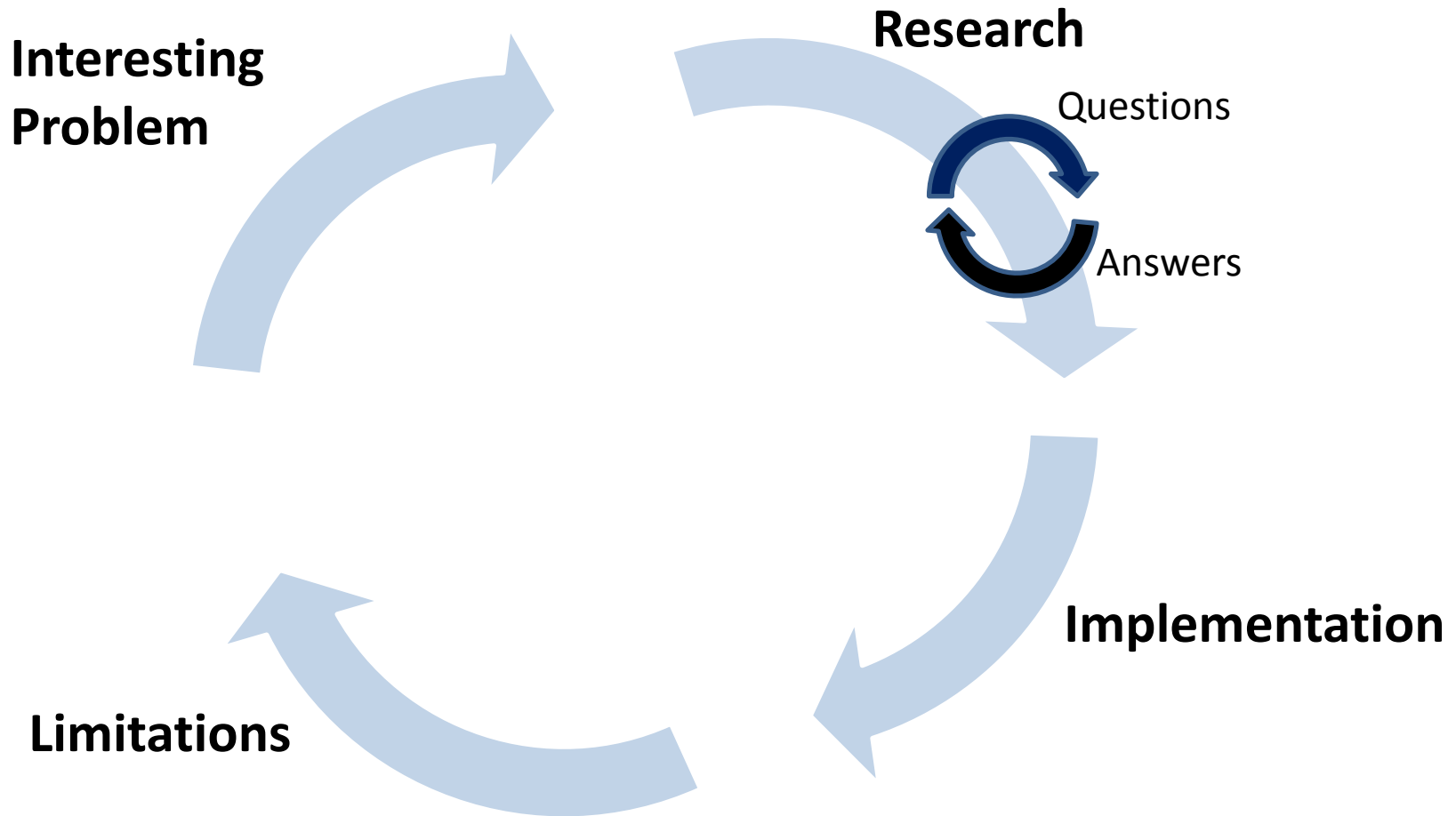
**Invent** new items, articles, processes

I would also add: **whenever possible contribute to the solution of important problems...so...**

**Universities are places to undertake major changes and incorporate new ideas – virtuous cycles to their benefit**



The best  
Universities  
create  
virtuous  
cycles



## Research Myths:

- **Learning Styles require research on campus**
- **Just having good faculty research leads to better learning outcomes**

Learning styles: Meta-analysis shows:

- 1) **“People have very strong preferences for modes and styles”**
- 2) **“There is little or no evidence that they learn more when they get their way.”**
- 3) **“If classification of students’ learning styles has practical utility, it remains to be demonstrated”**

Faculty Research: Meta-analysis shows

- 1) **“Faculty strongly believe that doing research improves their teaching”**
- 2) **“There is little evidence that people doing good research will cause students to learn more or better in their classrooms”**

## Learning Styles

- Expectations and engagement are the key
- **“Instilling an expectation to teach thus seems to be a simple, inexpensive intervention with the potential to increase learning efficiency at home and in the classroom.”**

High expectations in a demanding, varied curriculum that requires “deep processing”, and persistent teacher/student engagement is a big part of W&M “Secret Sauce.

## Integrating Teaching and Research

Study says having good research DOES HAVE the POTENTIAL to enhance learning  
Recommend SIX things that still need to be done in other Research Universities.

W&M has been doing this (for more than 20 years)

- 1) Recognize faculty who integrate teaching and research.
- 1) Develop faculty skills (seminars etc.) at integrating teaching and research.
- 2) Promote research among broad spectrum of undergraduates (not just scientists).
- 3) Promote four modes of scholarship: teaching/learning, discovery, integration, and application.
- 4) Promote inquiry-based, problem-based, project-based, & inductive learning
- 5) Reward departments that encourage the above.

Integrated research is very big part of the  
W&M Secret Sauce.



## Take Away Messages

- Research is a Public Good
- Economic success requires 1) a talented and interconnected workforce; 2) adequate and dependable resources; and 3) world-class basic research in all major areas (of science)
- Universities create new knowledge, forms, expressions; discover new phenomena and facts; invent new items, articles, processes; and whenever possible contribute to the solution of important problems

## Take Away Messages

- Communicate high expectations for learning
- Maintain rigorous, demanding, varied curriculum that includes research
- Persistent teacher/student engagement
- Integrate teaching and research  
reward departments that encourage this

**W&M Secret Sauce**