Learning to Say No!

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Disclaimer

The opinions expressed in this talk are solely of the author and does not necessarily reflect the opinions or beliefs of NTU.
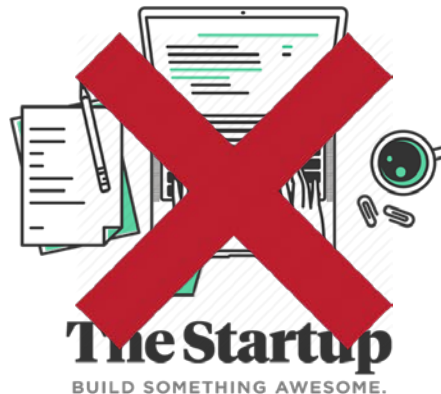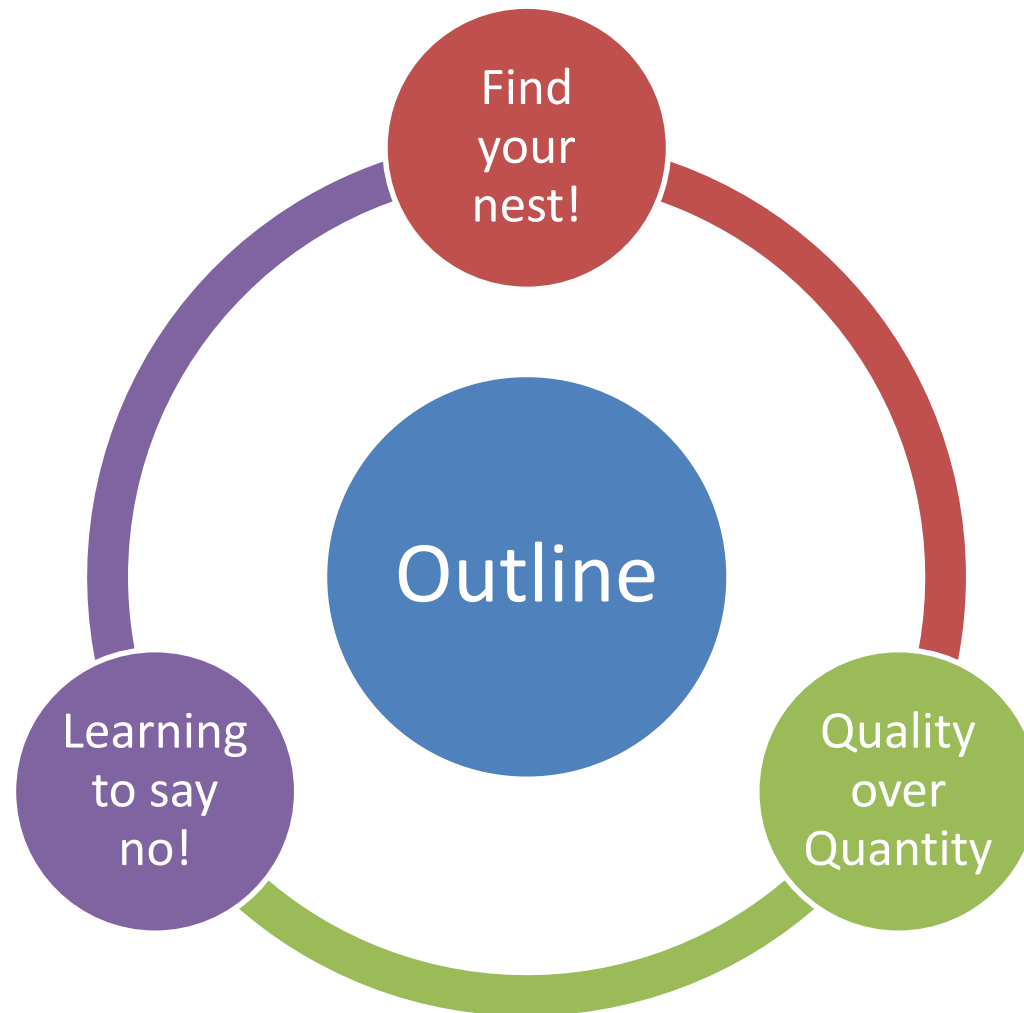
What is the goal of research?

" The **goal** of the **research** process is to produce new knowledge or deepen understanding of a topic or issue.

Research (Wikipedia)

The Road Ahead

Finding Your Nest!

The Value Alignment Problem

Intellectually stimulating

Boring people

Count pape

Quality-focus

Count grant

Grants are means to the end

Mentorship

You-are-on-your-own

Gives resou

Find-your-own-resources

Good manp

NP-hard problem

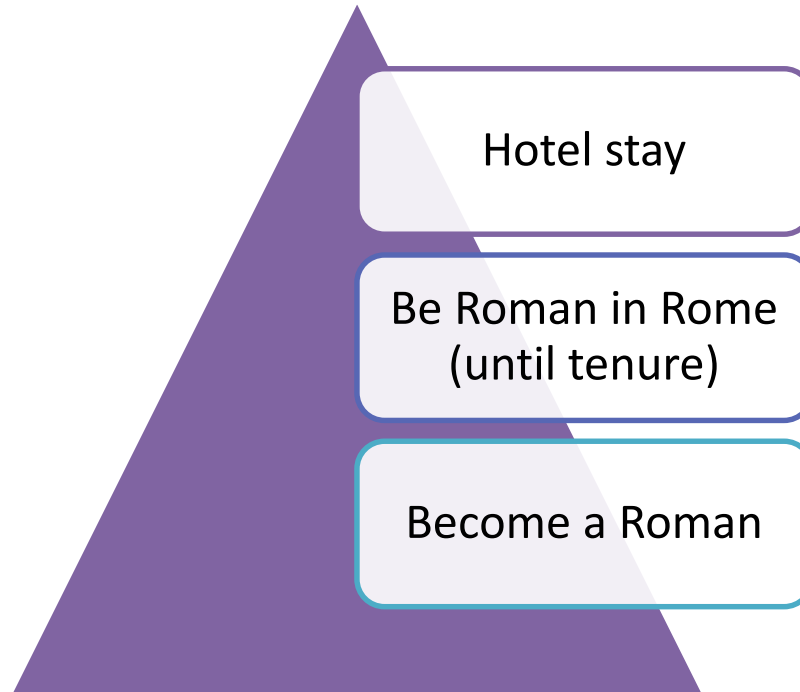**Basic Research**

Applied Research

Research

Teaching

Theory vs Practice

Reality

- Multi-objective optimization problem
- Choose a Pareto-optimal solution
- What if you cannot find the "right" nest?

Hotel stay

Be Roman in Rome (until tenure)

Become a Roman

Finding Right Problems

What Should You Work On?

- Work on problems that interest you!
- Not-too-hot-not-too-cold
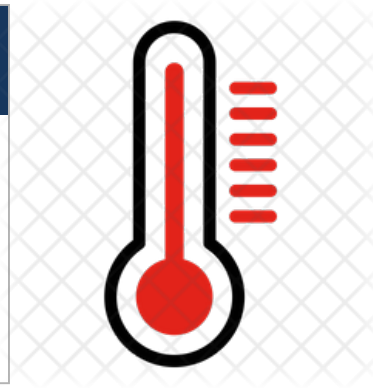- Personal mantra: Shorter the related work, the better

Avoid

- Very hot areas (numerous papers getting published)
- Problems advocated by Pied Piper Papers
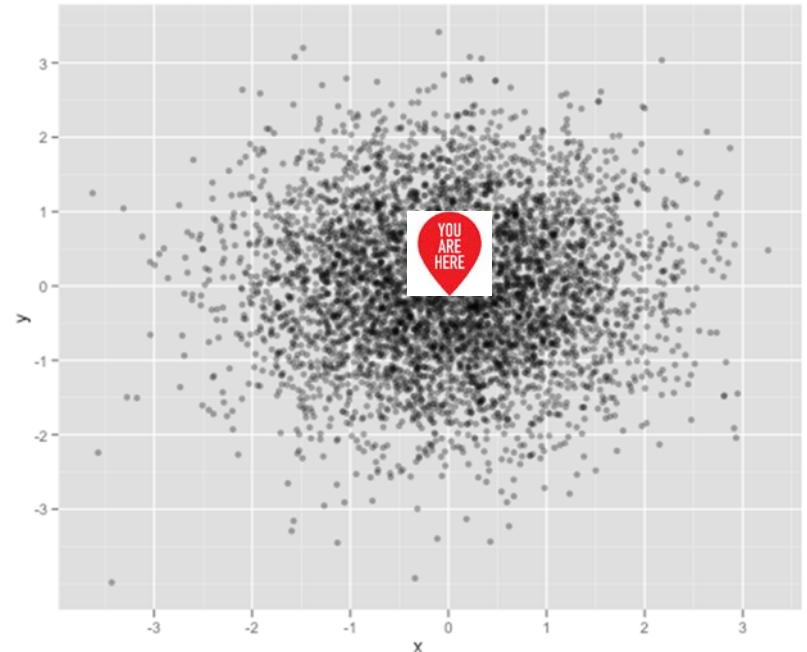
The Curse of Hot Topics

Benefits

- Everybody knows the problem!
- Relatively easier to get published
- Rapid citation growth!

The Curse

- Too many folks have published!
- Potentially incremental work
- Low visibility
- You may not be known for that topic/problem – you are not one of the pioneers

Beware of Pied Piper Papers (P³)

Pied Piper Papers

- On hot or well-established problems
- Introduce a new way which is supposed to be better than the old way
- Rapid citation growth – many followers
- Eventually demonstrated that old way is actually better!

Road to Success

" What's important is you develop an area of science, you make progressive discoveries, and you earn a reputation for solid work.

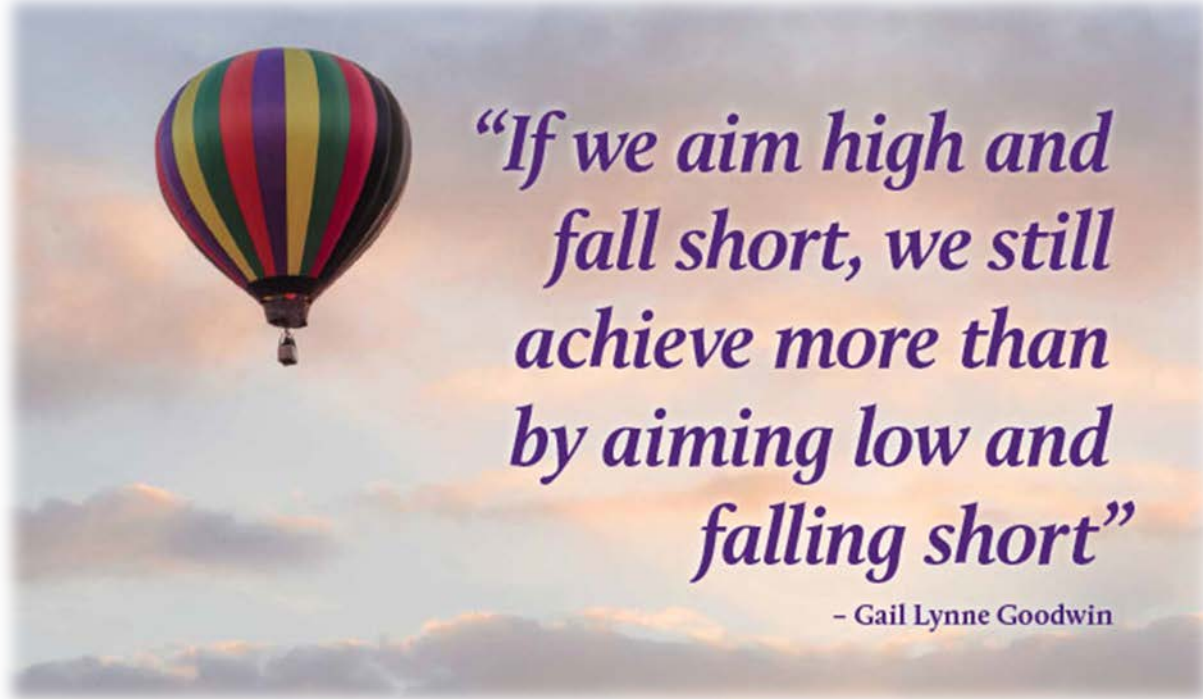" If you do good solid work consistently, you will be recognized

Bruce Beutler, Nobel Prize (Medicine, 2011)

Publishing Your Research

"If we aim high and fall short, we still achieve more than by aiming low and falling short"

– Gail Lynne Goodwin

You want to see how your ideas compete with those from the best in the world.

Researchers do take notice on where you publish and not only what you publish.

Quality Over Quantity

http://sciencenordic.com/crisis-basic-research-scientists-publish-too-much

You may be ghost authors

Incremental work
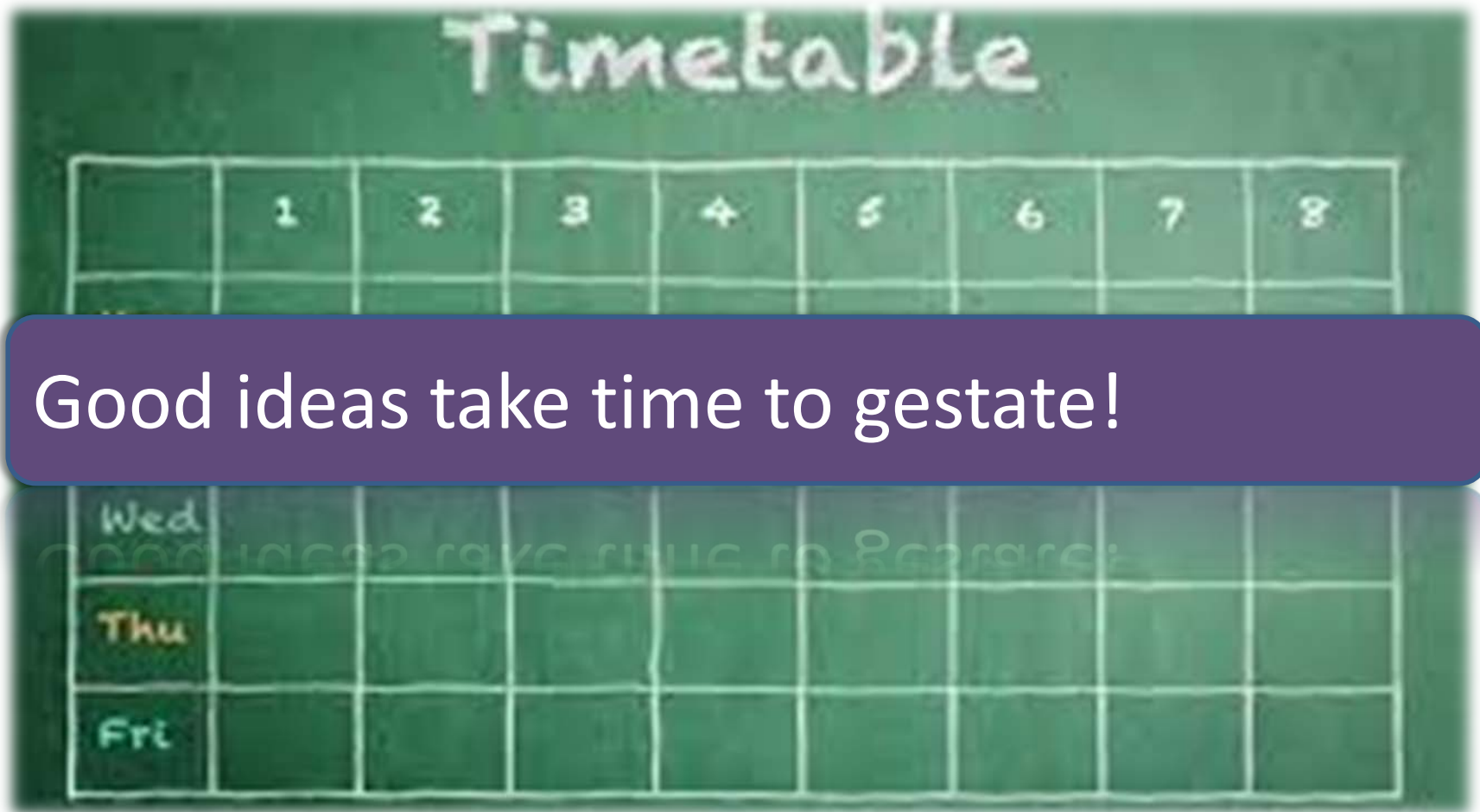
Compromising quality

Review manipulation

Not a serious scientist

Keep Your Timetable Sparse!

Good ideas take time to gestate!

Get Relevant Resources

" **Funding** is a **means to an end**, not an **end** in and of itself. Whereas people should get **grants** in order to do **research**, too often nowadays people do **research** in order to get **grants**

https://www.insidehighered.com/views/2016/07/25/undesirable-consequences-growing-pressure-faculty-get-grants-essay

Maintain High Professional Integrity
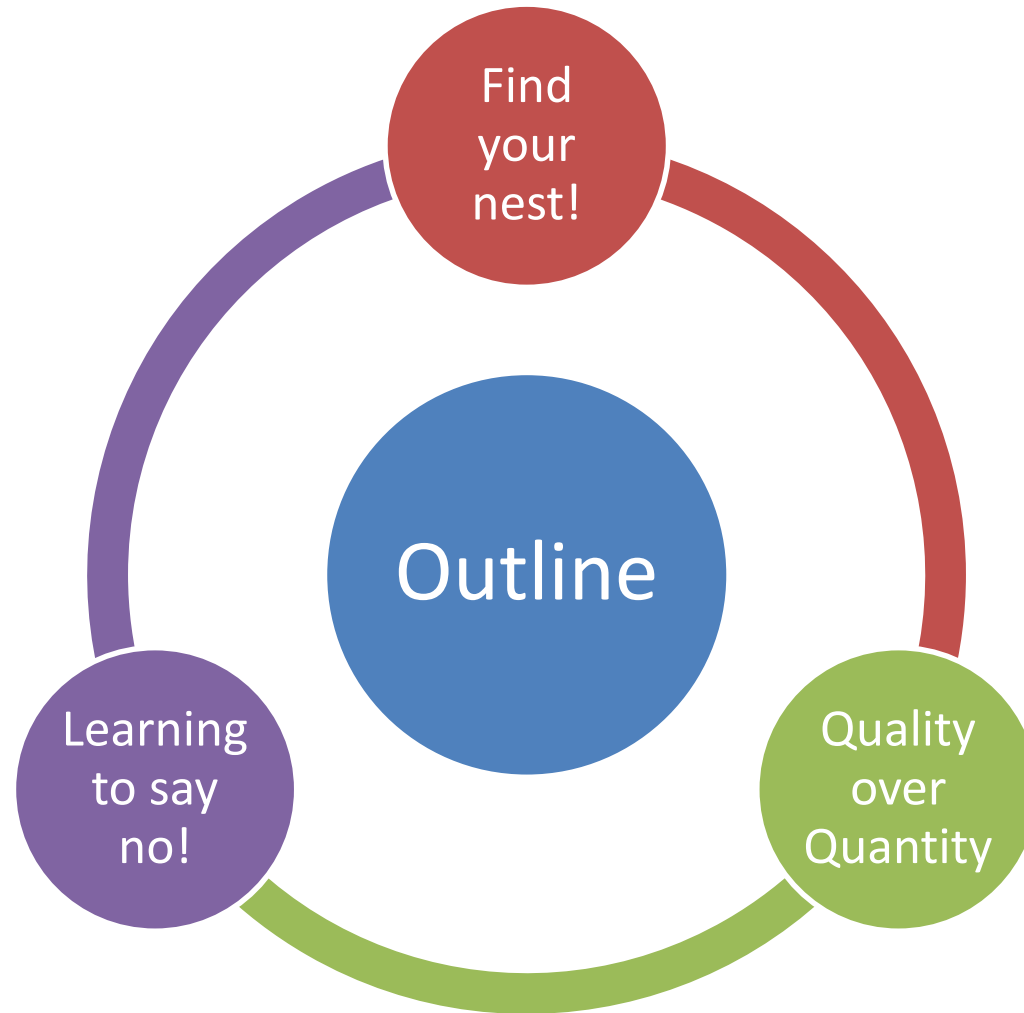
"Ghost" authorship

Own your work!

Fabrication and manipulation

Review process manipulation

How Can You Implement All These?

Find Your Nest

Mismatched values!

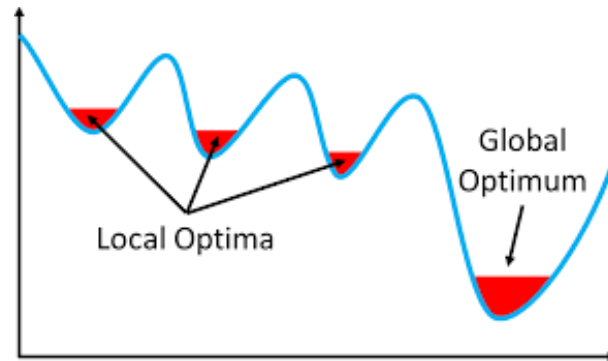# Quality over Quantity

Quantity over Quality

Low visibility areas

Manipulation!
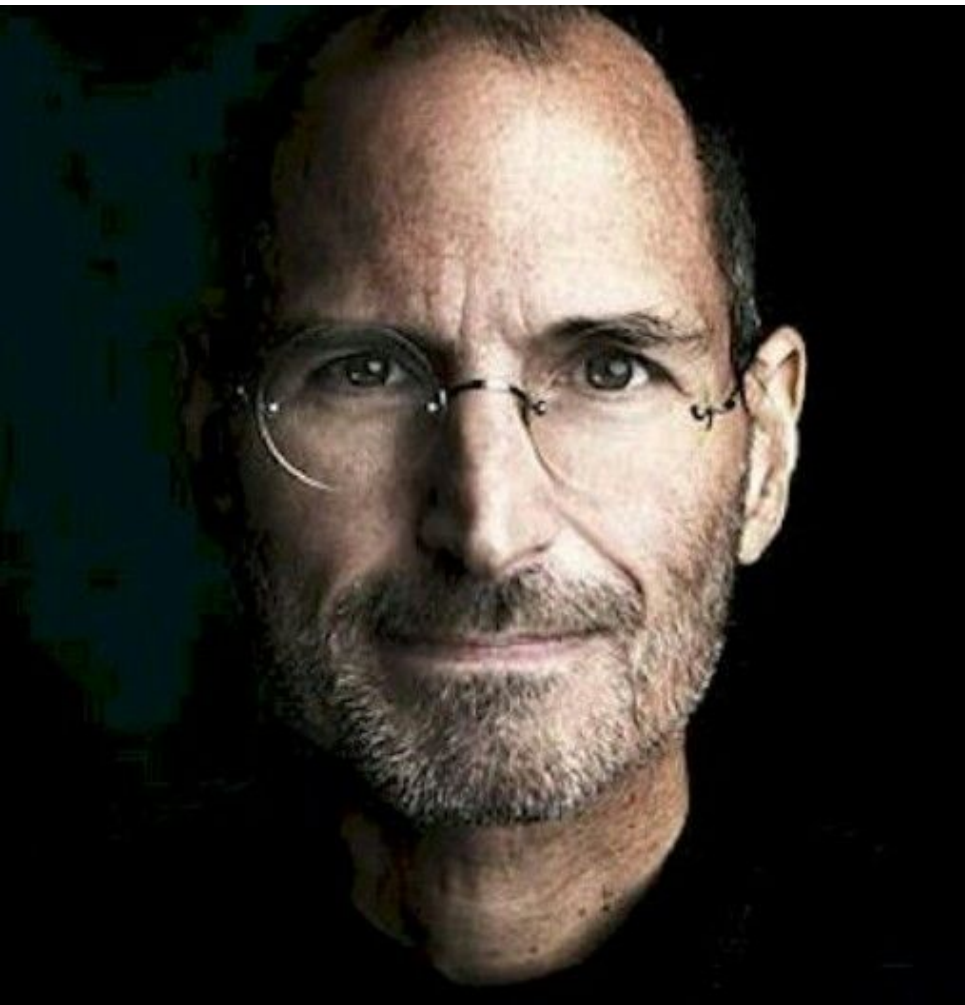
P³ papers!

Irrelevant "work"!

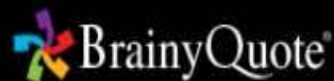# No! Has A Cost

Global Optimum

Local Optima

BENEFIT

COST

"If you want to make everyone happy, don't be a scientist — sell ice cream."

Steve Jobs

The secret to success is to offend the greatest number of people.

George Bernard Shaw

Final Words

" *..it's very important to realize what kind of a researcher you think you are best suited to be, and follow it. Don't look at some superstar and say, "I want to be like her, and she has a big group building lots of systems, so that's what I'm going to do." If that's what your calling is, that's wonderful, go do it, more power to you. But don't get confused by trying to emulate someone who doesn't fit your working pattern.*

Prof Jeffrey Naughton, Univ of Wisconsin