

# Change and Adoption: Scaffolding Your New Faculty Workshop Experience

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Physics and Astronomy New Faculty Workshop

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# Why start here?

- Scaffolding
- Transparency



# Objectives:



**Build a useful  
structure for  
your NFW  
experience**

- Identify aspects of **your context and personal characteristics** that matter for instructional decisions
- Fit your work into a **bigger picture** of university science teaching **change and adoption**
- Tap in to **resources** that will help and deal with **barriers** that may hinder

## Plan:

1. RBISs, institutions, and people
2. Change and adoption
3. Barriers and resources

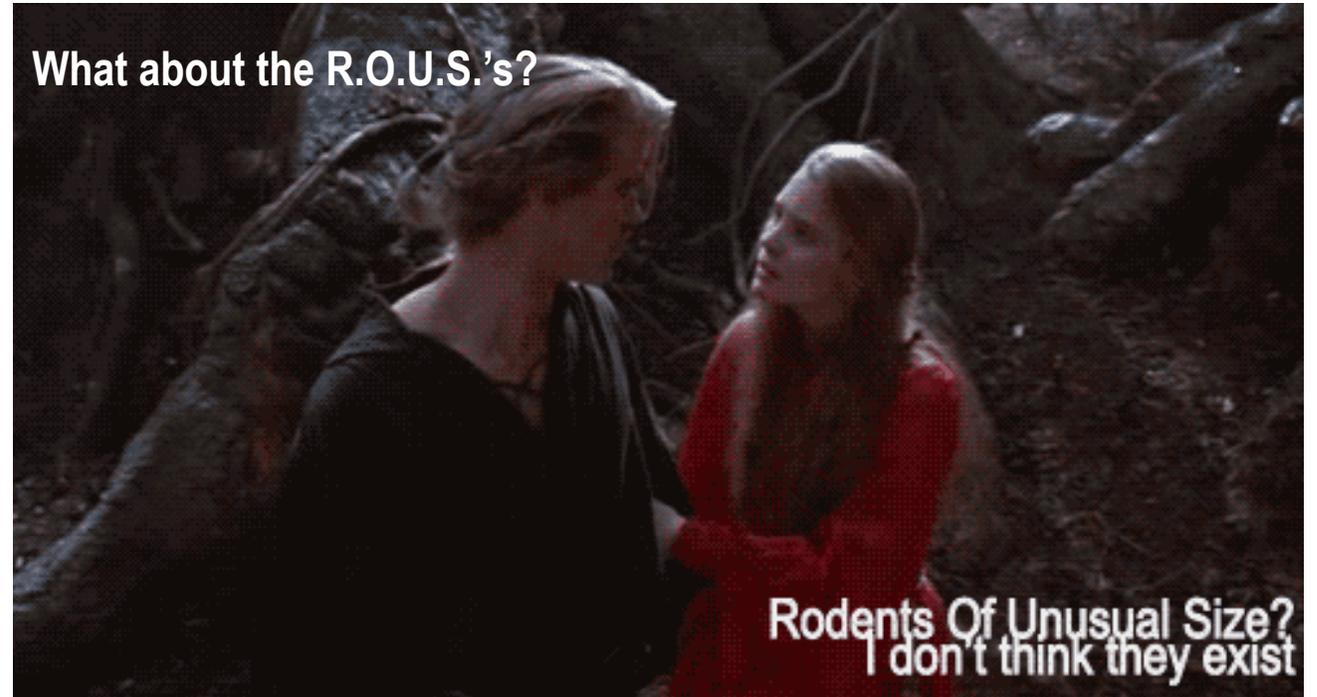
# RBISs

Research

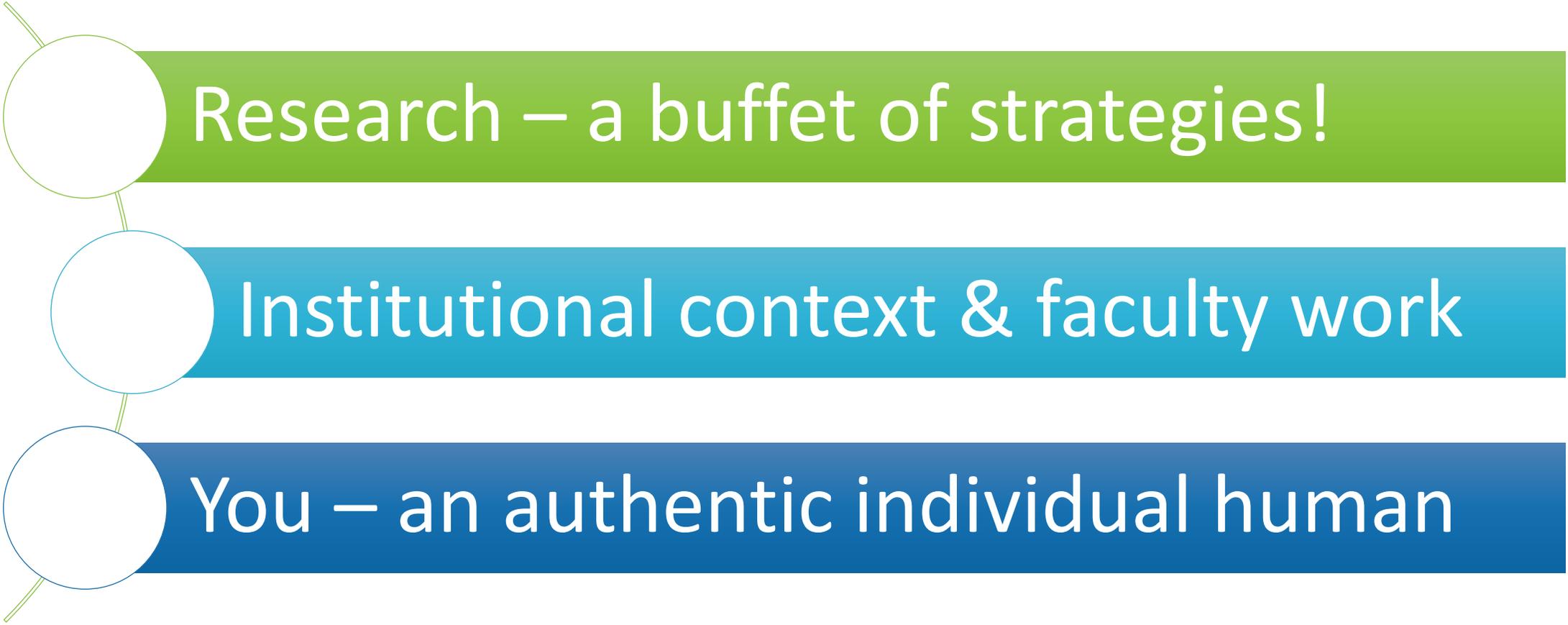
Based

Instructional

Strategies



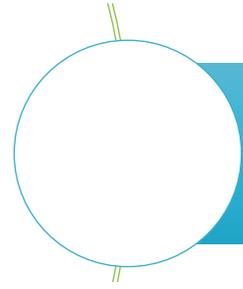
# RBIS Decision-making



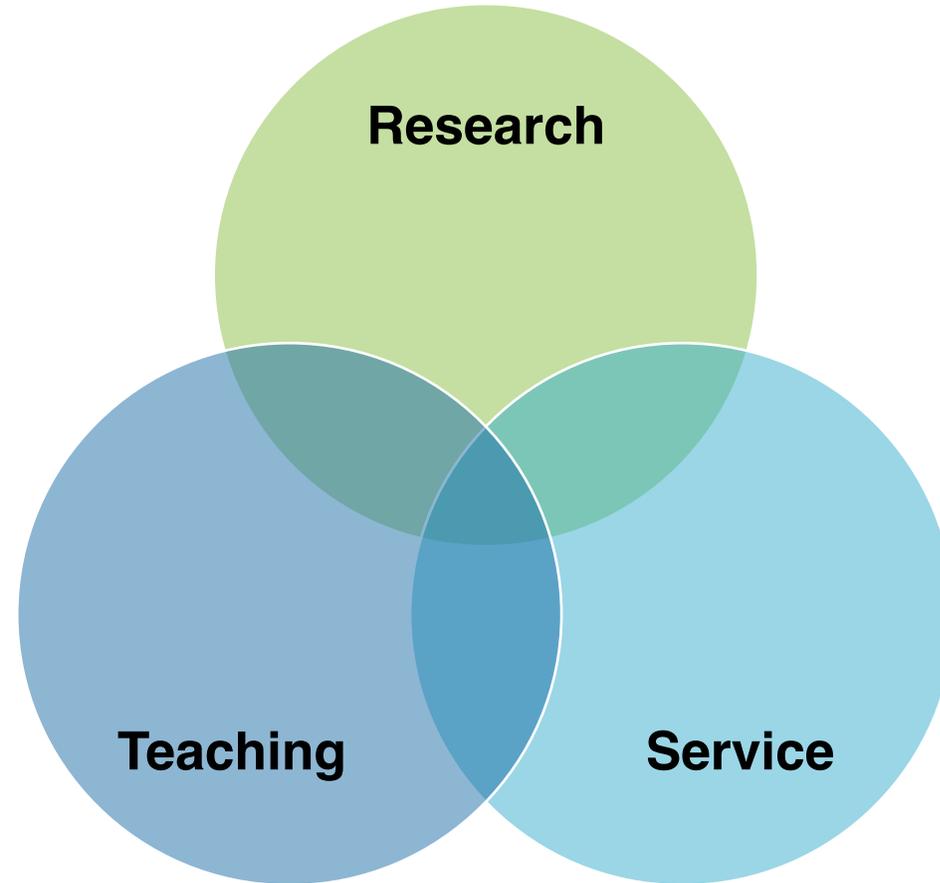
Research – a buffet of strategies!

Institutional context & faculty work

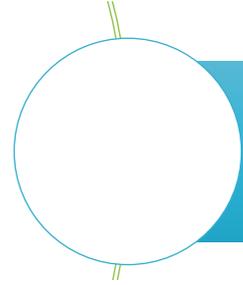
You – an authentic individual human



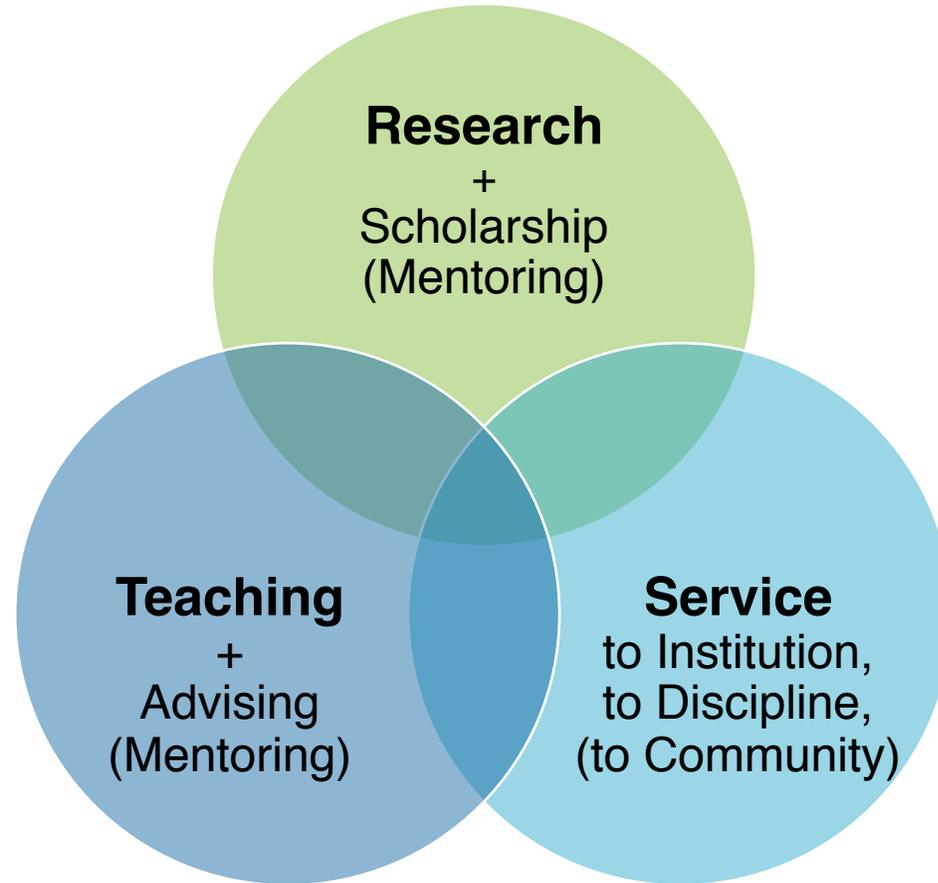
# Institutional context & faculty work



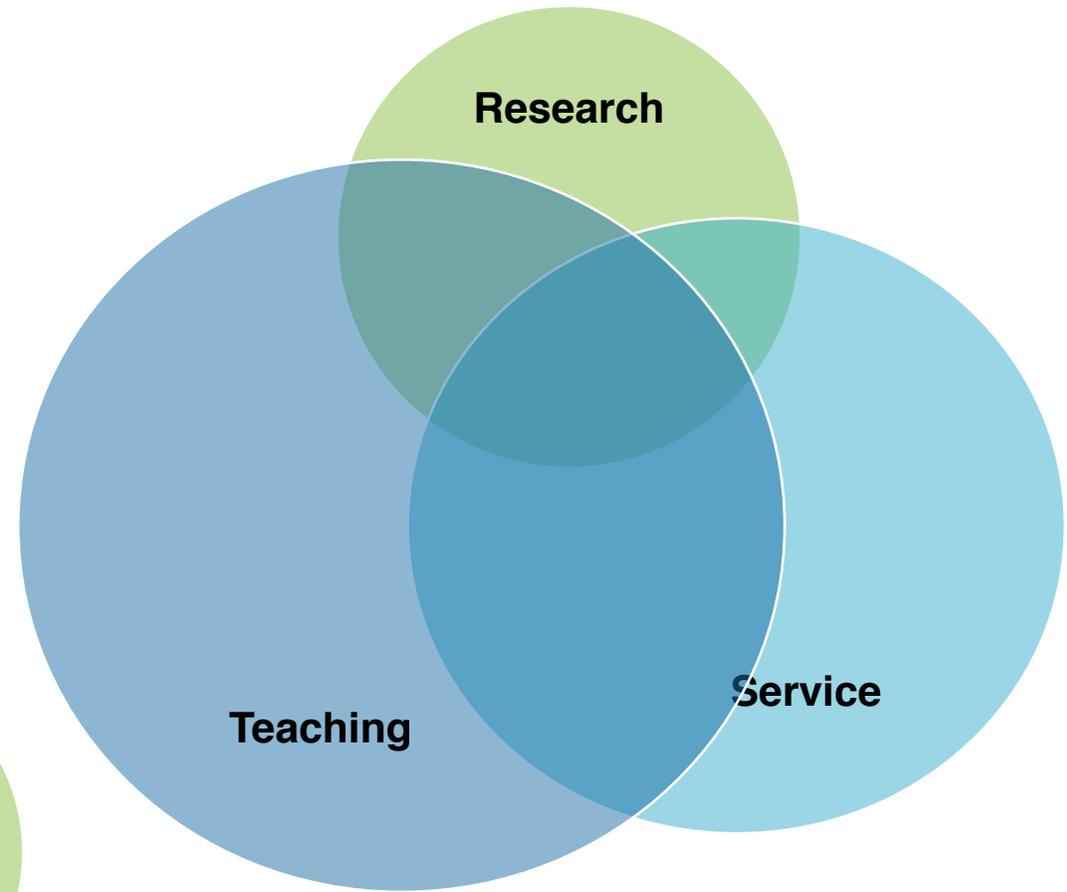
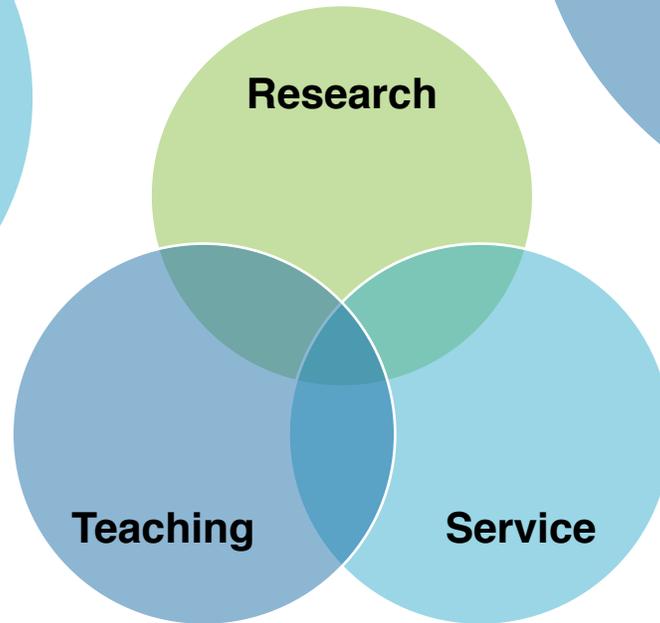
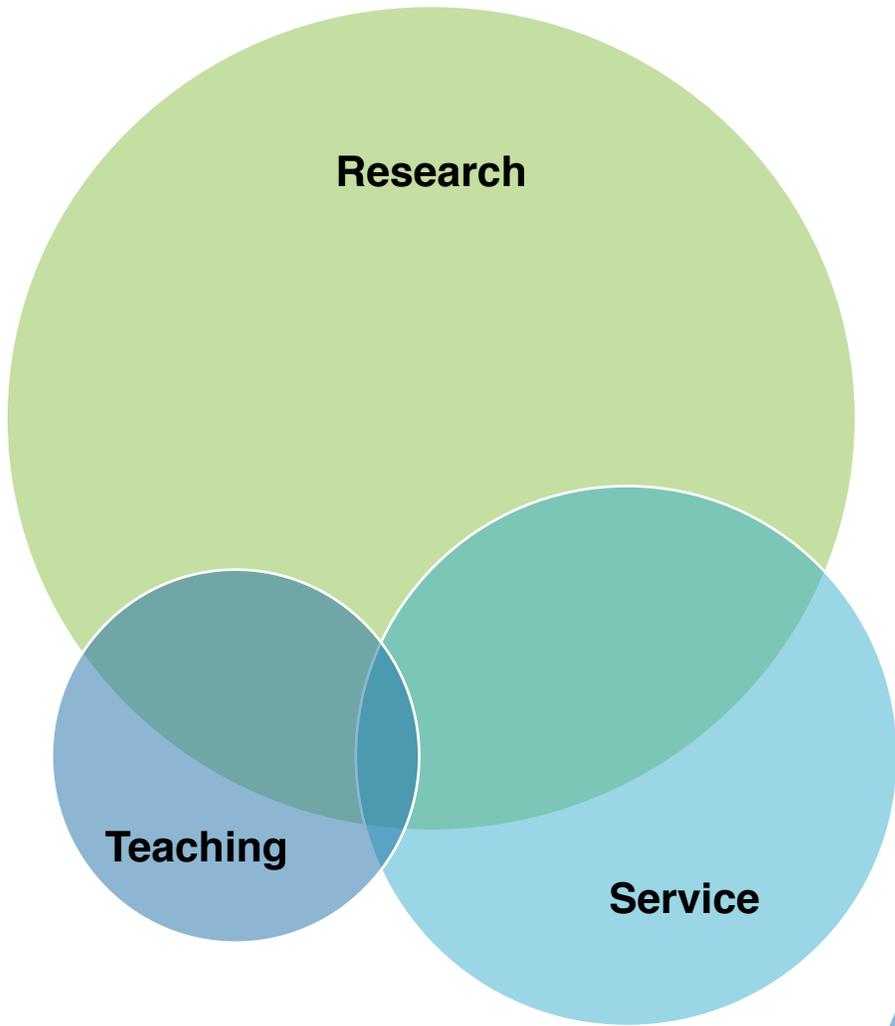
1. RBIs, Institutions, and People



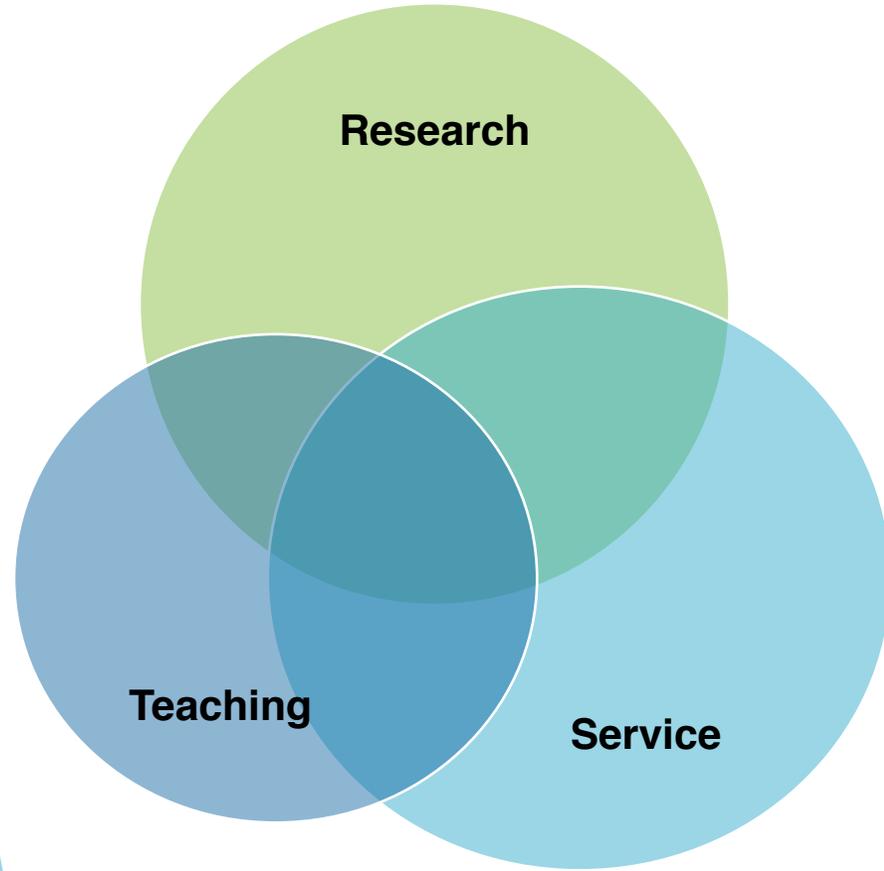
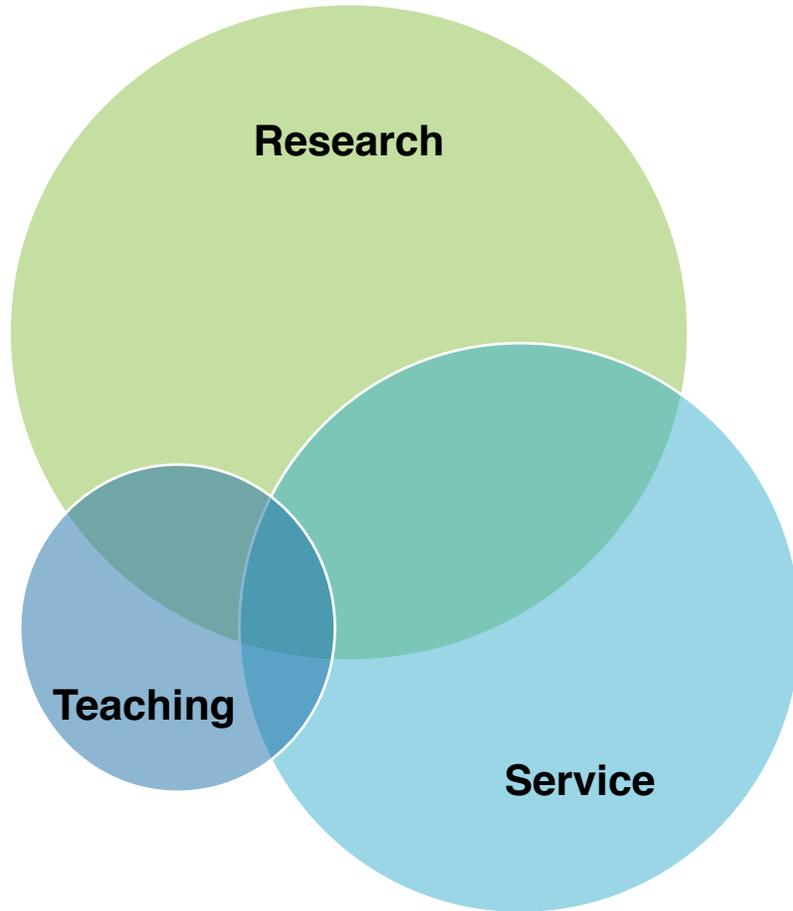
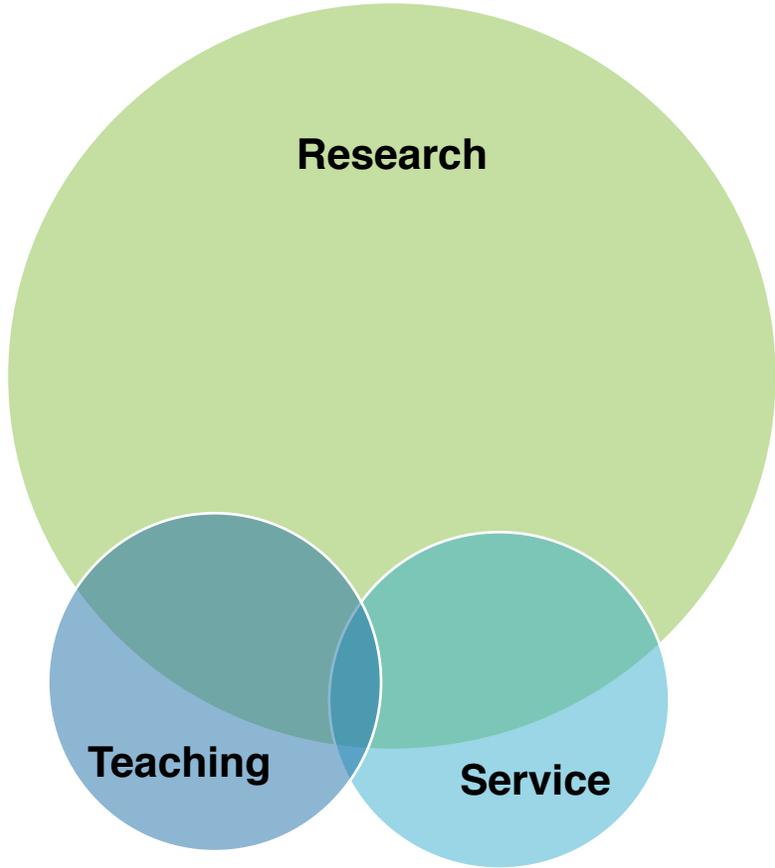
# Institutional context & faculty work



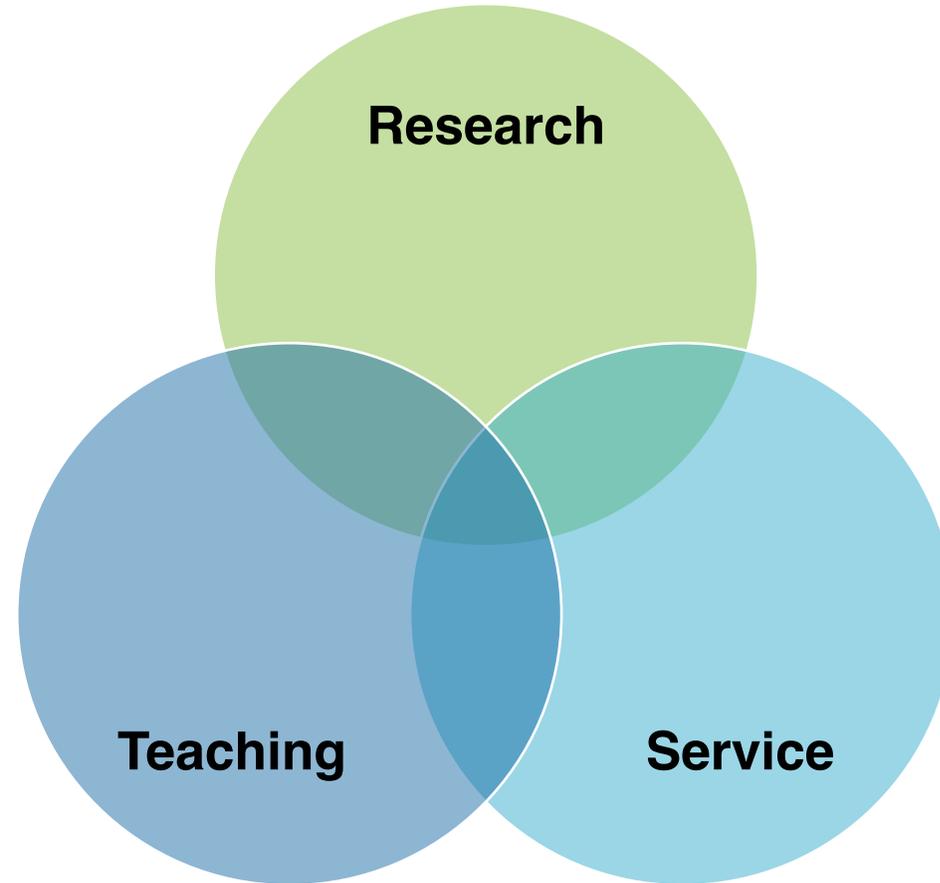
# Context: Institutional Differences



# Context: Career Stage Differences



# Evaluation and Criteria (P&T)



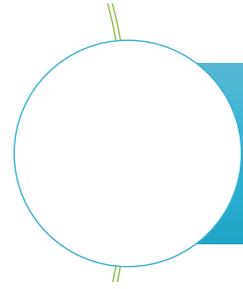
# What does your context look like?

- Sketch your research, teaching, service diagram
  - List specifics/questions in the three areas

## Consider:

- Institution
- Career stage
- Criteria (P&T)

5 minutes on your own, a moment to yourself



# Institutional context & faculty work

- Narrative of Constraint:

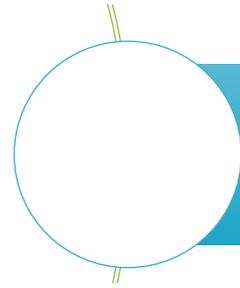
- Barriers
- Limited resources/time
- Survival; "treading water"
- Isolation

*Often how faculty work has been framed and discussed in the literature...*

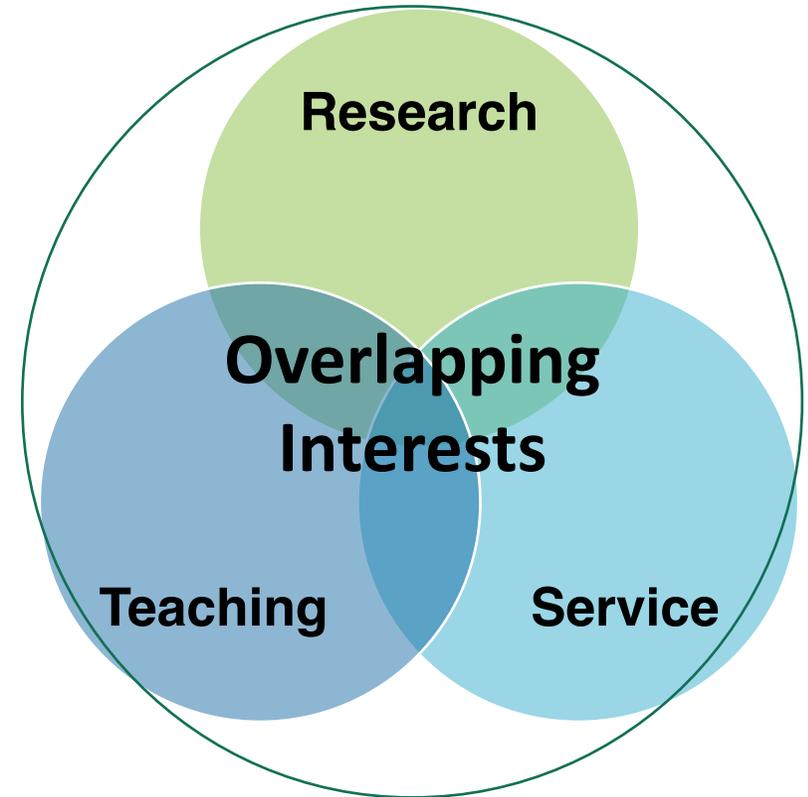
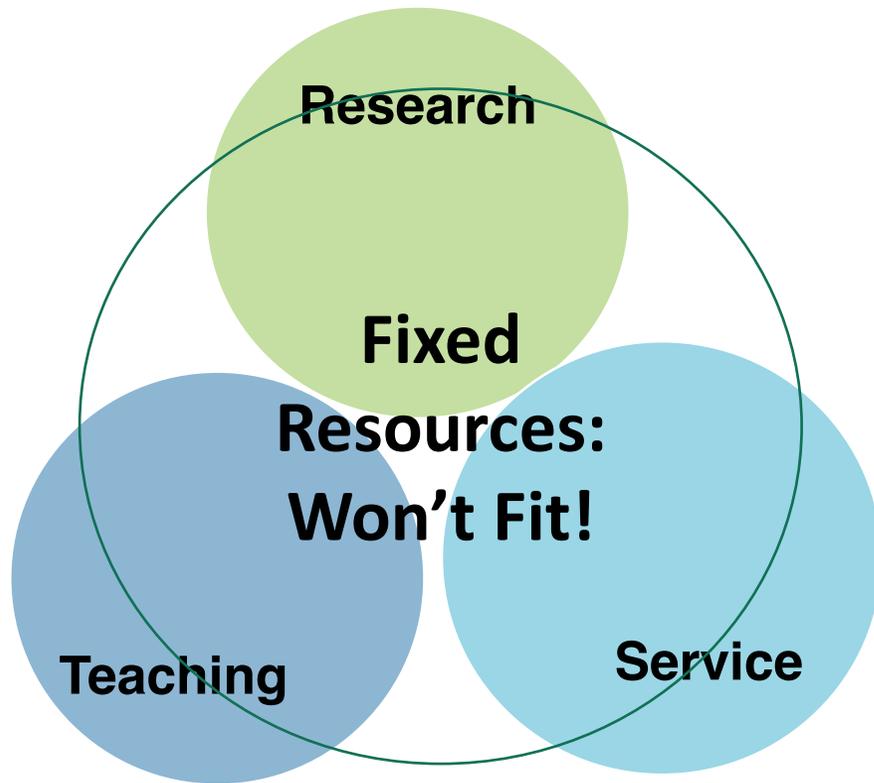
- Faculty Growth & Learning:

- Choice, commitment, agency
- Personal meaning
- Change and development
- Professional Networks

*...misses the underlying experience of/potential for meaning, connection, and collegiality.*

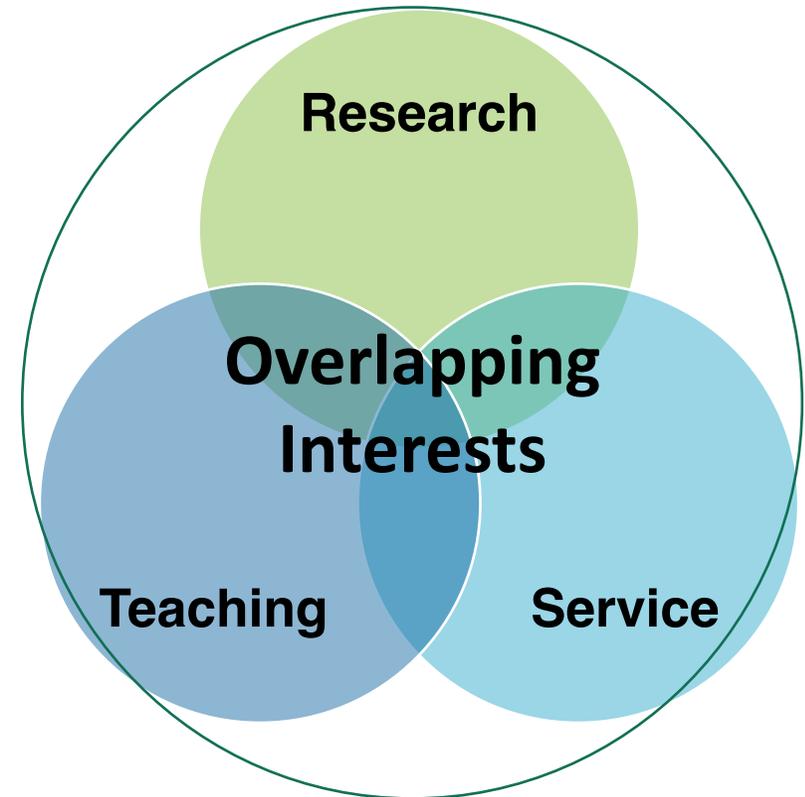


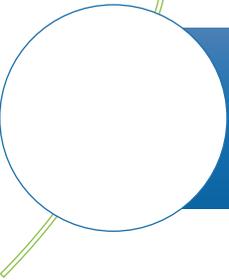
# Institutional context & faculty work



# Strategic + Meaningful Overlap:

- Choice of service/committees
  - Teaching & Research
  - Mentoring
- Commitments that fuel your sense of mission and purpose



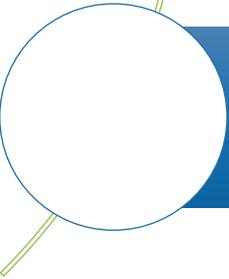


# You – an authentic individual human

## **Professional & Personal Identity Matters**

- Who do you want to be as a scientist, educator, mentor, colleague...?
- Under what circumstances do you best express your enthusiasm and passion?

*Talk with a neighbor! Each of you will talk for 2 minutes; ok if it's not well-formed/thought out.*



# You – an authentic individual human

Take a moment:

Capture any insights/thoughts in writing.

# RBIS Decision-making



Research – a buffet of strategies!

Institutional context & faculty work

You – an authentic individual human

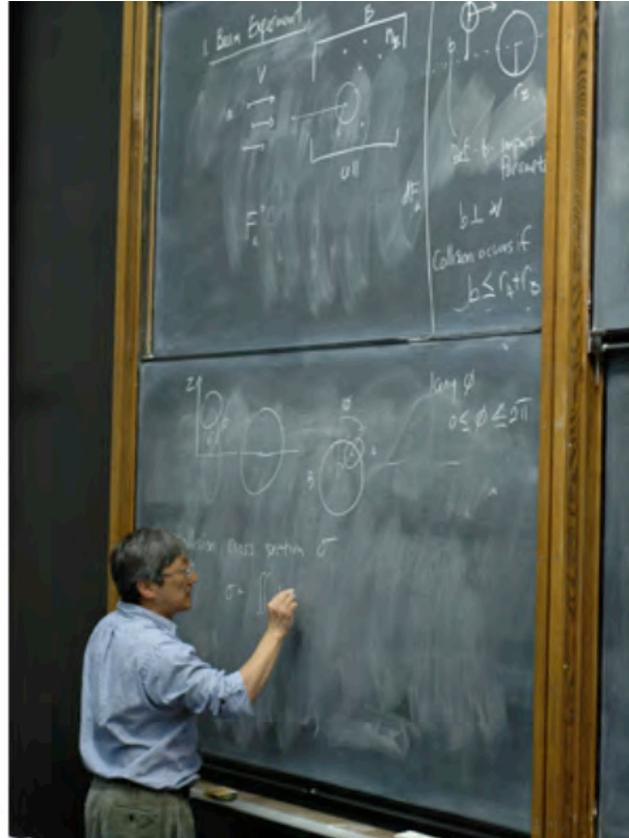
**NFW:**

Which RBISs align with your context?

With your personality, values, & goals?

1. RBISs, institutions, and people
2. **Change and adoption**
3. Barriers and resources

# Why is university science teaching changing?



## 2. Change and Adoption

# Why is university science teaching changing?



Why is university science teaching changing?

**What do you think?**

# Research: Change Strategies

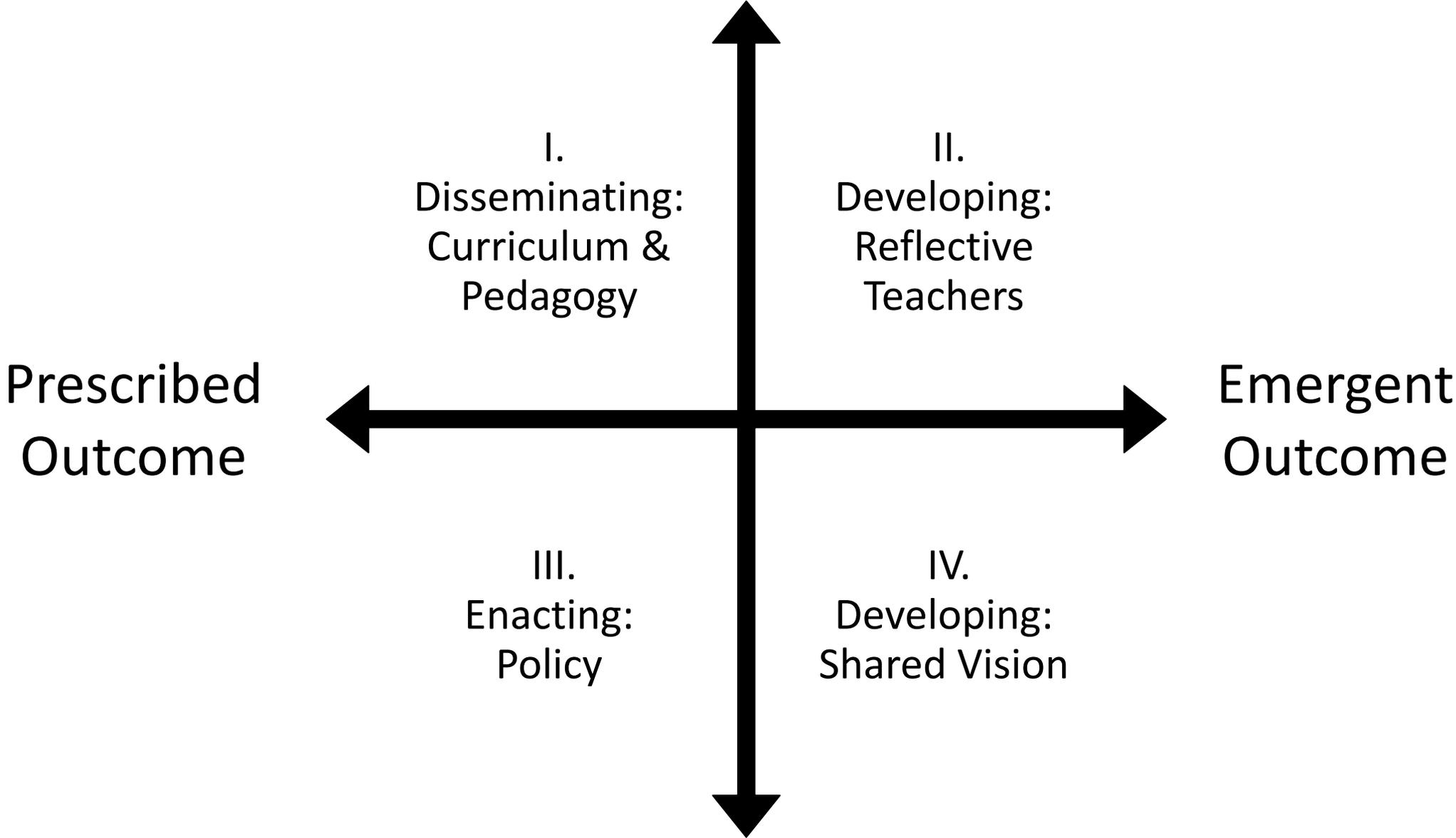
Location for change?

- Change individuals  
or
- Change environments  
& structures

Nature of change?

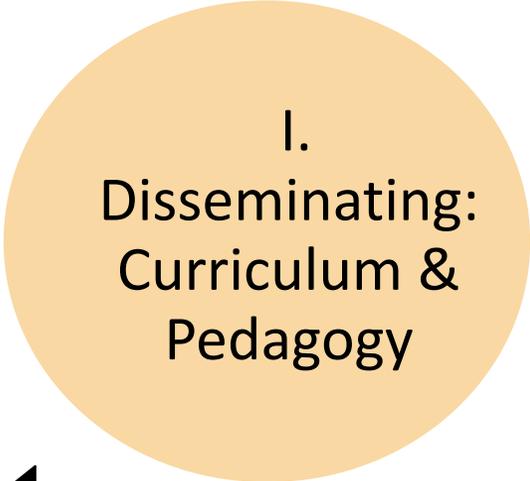
- Prescribed outcome  
or
- Emergent outcome

# Change Individuals



# Change Structures

Change Individuals



II.  
Developing:  
Reflective  
Teachers

Prescribed  
Outcome

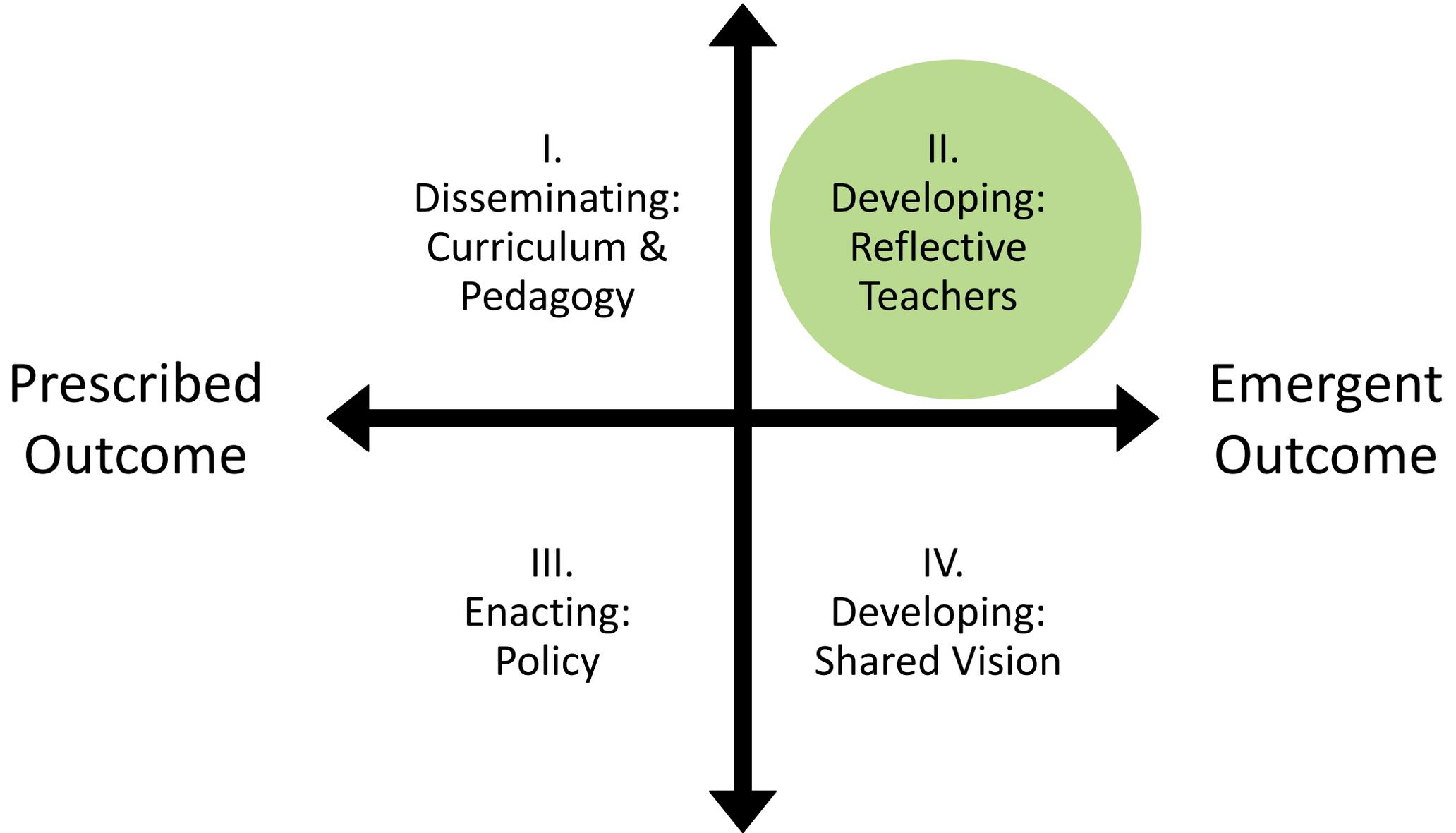
Emergent  
Outcome

III.  
Enacting:  
Policy

IV.  
Developing:  
Shared Vision

Change Structures

Change Individuals



Change Structures

Change Individuals

I.  
Disseminating:  
Curriculum &  
Pedagogy

II.  
Developing:  
Reflective  
Teachers

Prescribed  
Outcome

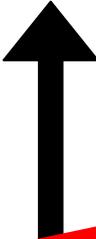
Emergent  
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Change Structures

Change Individuals



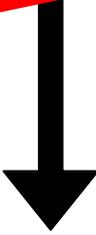
Who is the change agent?  
(Should it be you?)



Prescribed Outcome



Emergent Outcome

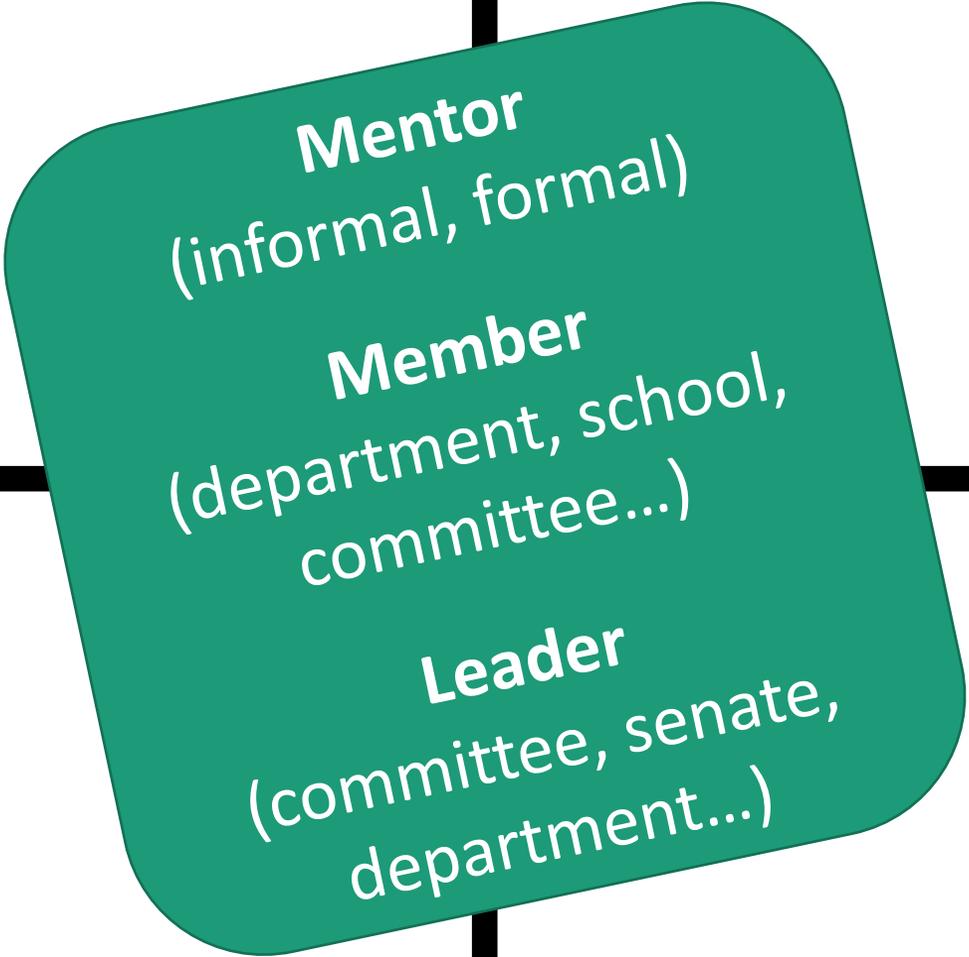


Change Structures

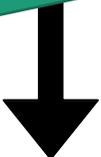


LOSS OF THIS CARD MUST BE REPORTED IMMEDIATELY

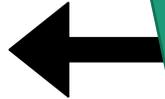
Change Individuals



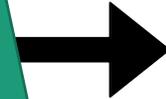
Change Structures



Prescribed Outcome



Emergent Outcome



1. RBISs, institutions, and people
2. Change and adoption
- 3. Barriers and resources**

# Barriers to changing teaching:

- **Training**
- **Time**
- **Incentives**
- **Tensions with professional identity**

# Barriers to changing teaching:

- **Training**

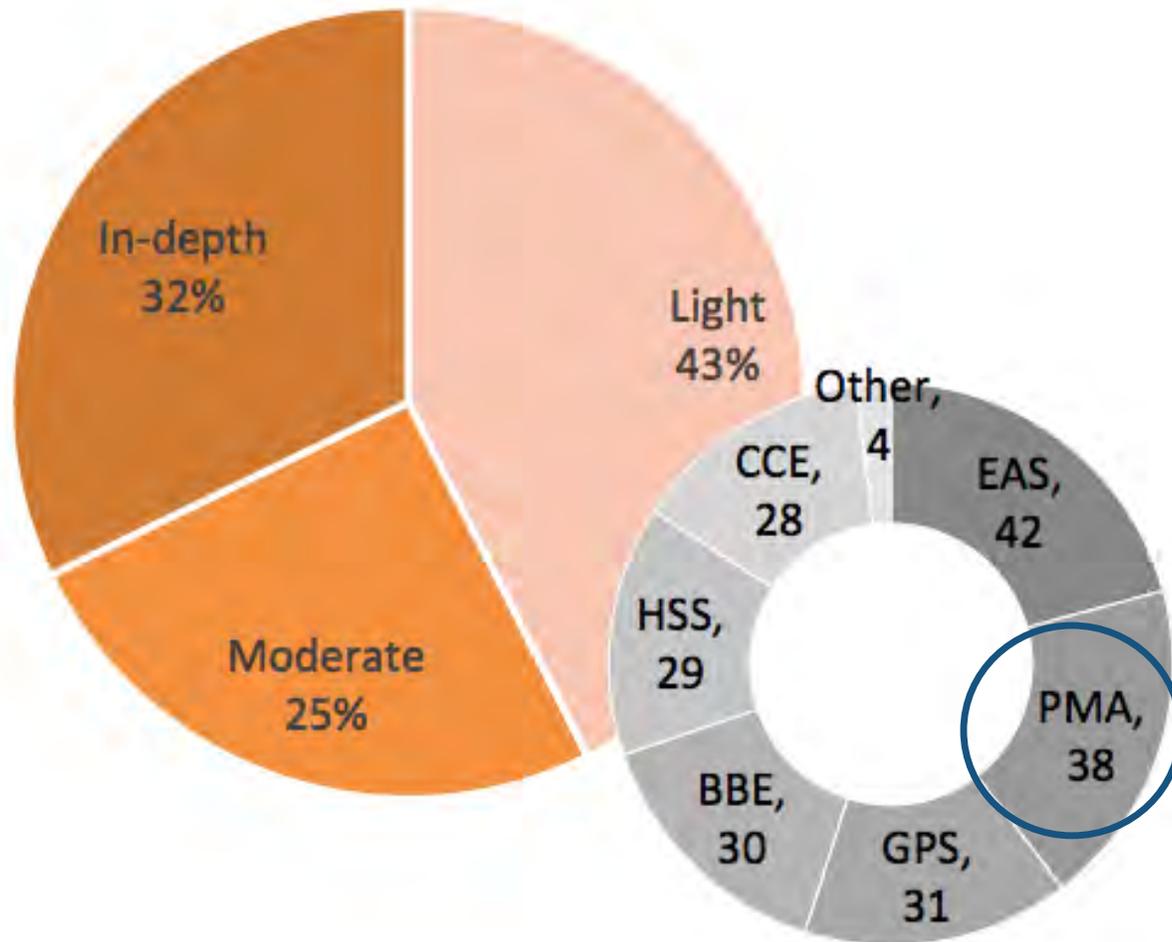
- New Faculty Workshop!

- ONGOING: Center for teaching/faculty,  
*in situ, on campus resources*

# 3 Years at Caltech CTLO

## Over 200 out of ~300 Faculty

(2012-13 thru 2014-15)



Professor 62%

Asst. + Assoc. Prof. 24%

Non-tenure track 14%

Physics, Mathematics, & Astronomy

# Barriers to changing teaching:

- **Time**

- Aligned w/ context & personal values

- INCREMENTAL ADOPTION:

- a little at a time; not all at once*

# Barriers to changing teaching:

- **Incentives**

- MOVING TARGET

- Teaching generally mattering more:

- stay in sync with your campus*

- Ask: e.g., exclude teaching evals,

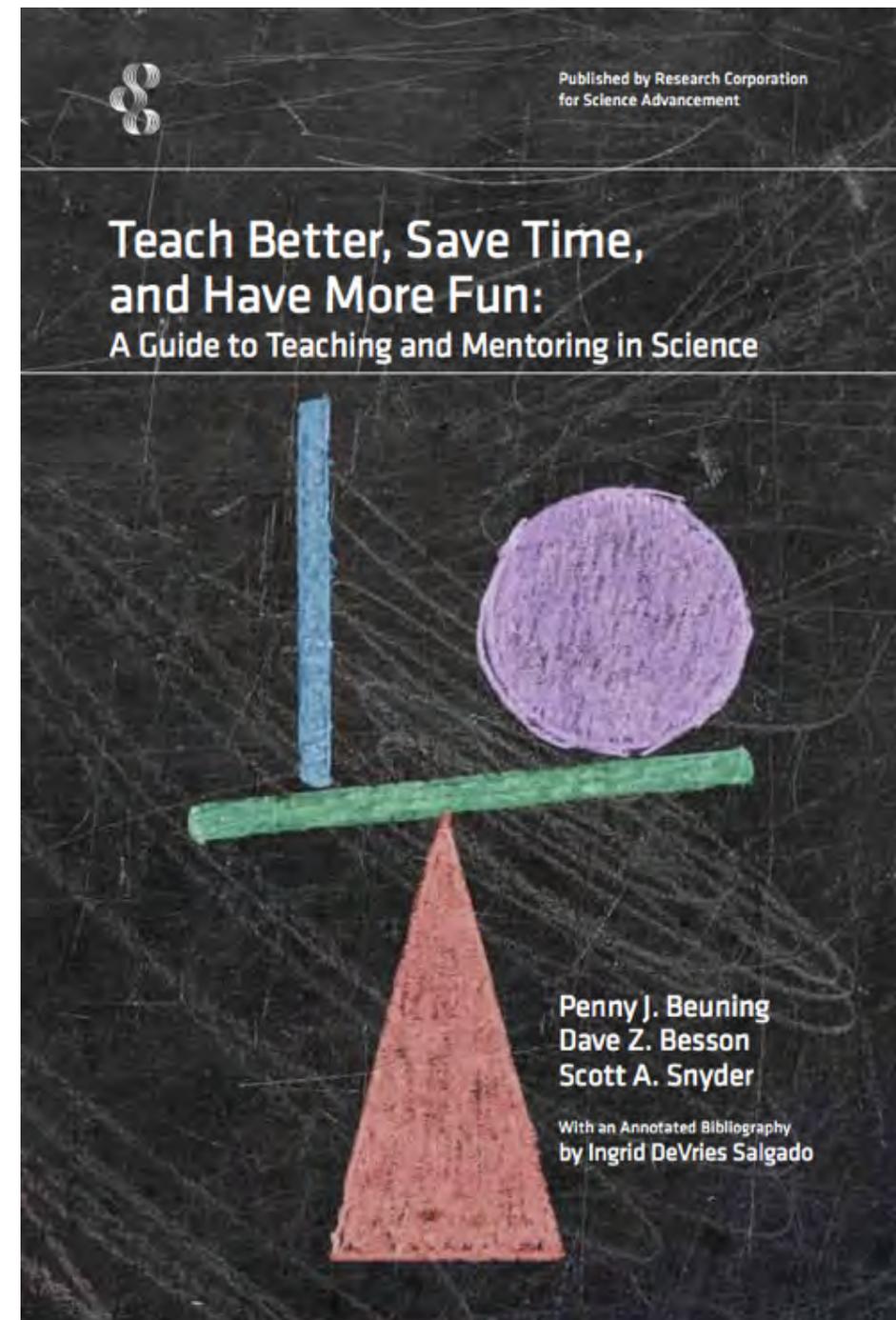
- first term teaching or major change

# Barriers to changing teaching:

- **Tensions with professional identity**
  - Socialization & role models
  - Classroom: traditionally “closed door”
  - Different kind of achievement  
*originality vs. collective impact*

# Resources:

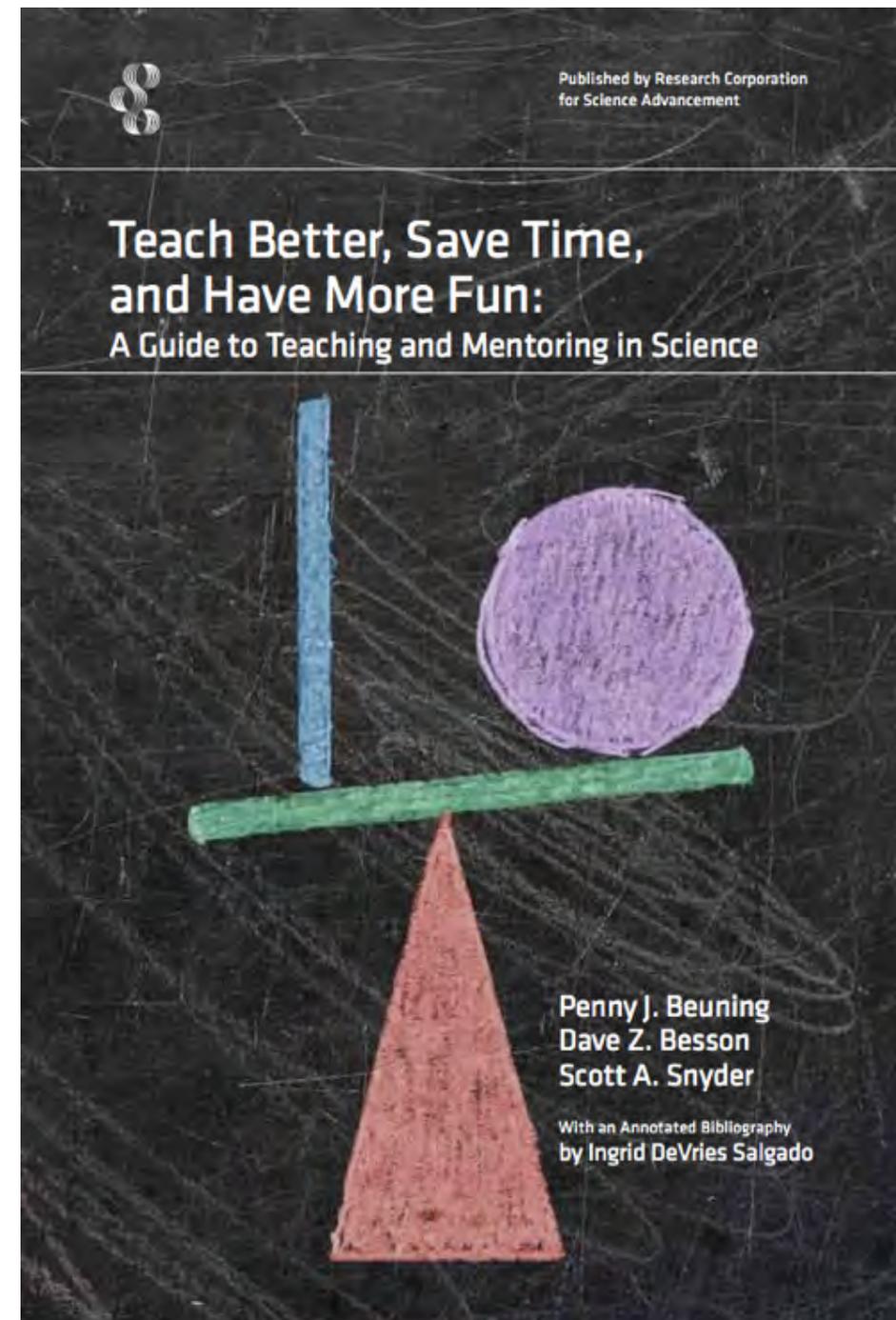
- **Colleagues:**  
Observe!  
Borrow!  
Steal!
- **+ Mentoring Network**



# Resources:

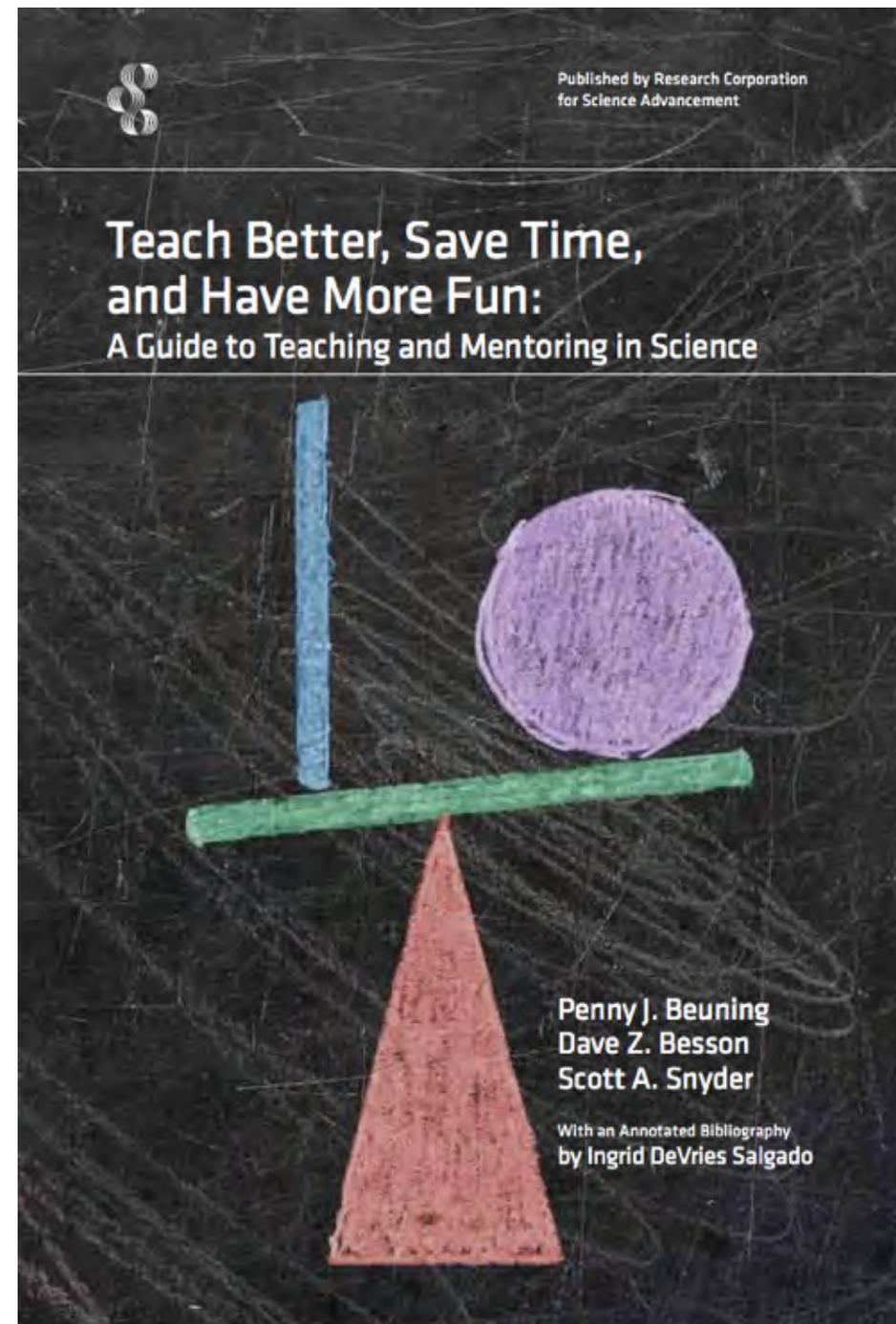
## Feedback!

- Learn from student work
- Early, informal surveys
- + Have someone visit (teaching center; colleague)
  - Observation + consultation
  - Focus group
  - Quantitative tools



# Closing thoughts:

“Your students are most likely not like you, but then again, you may not have been who you remember.”





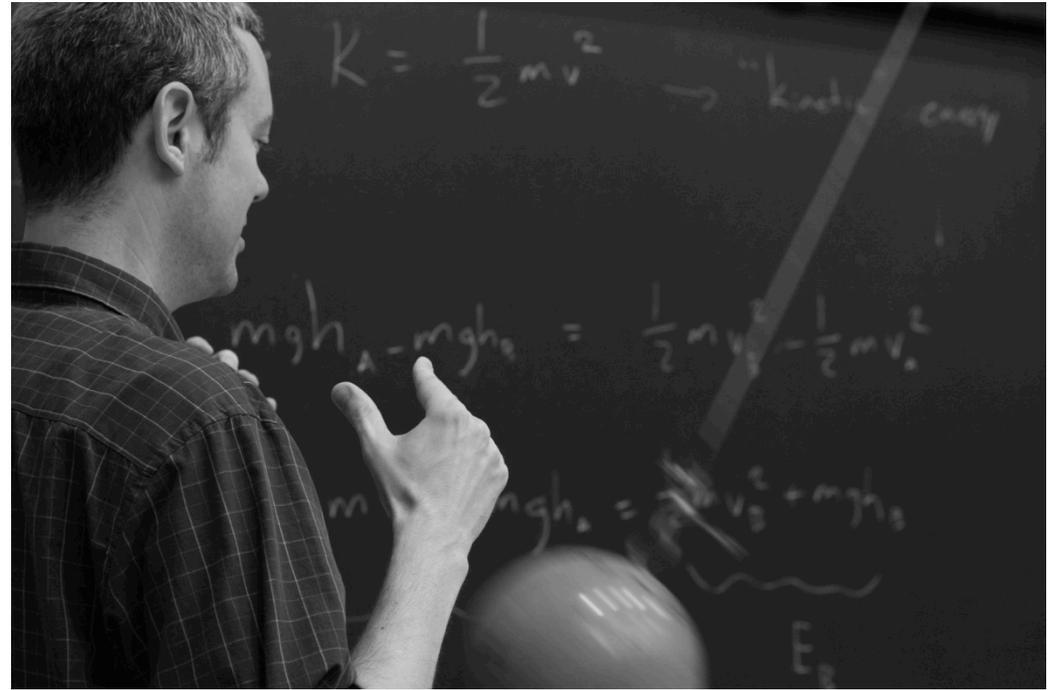
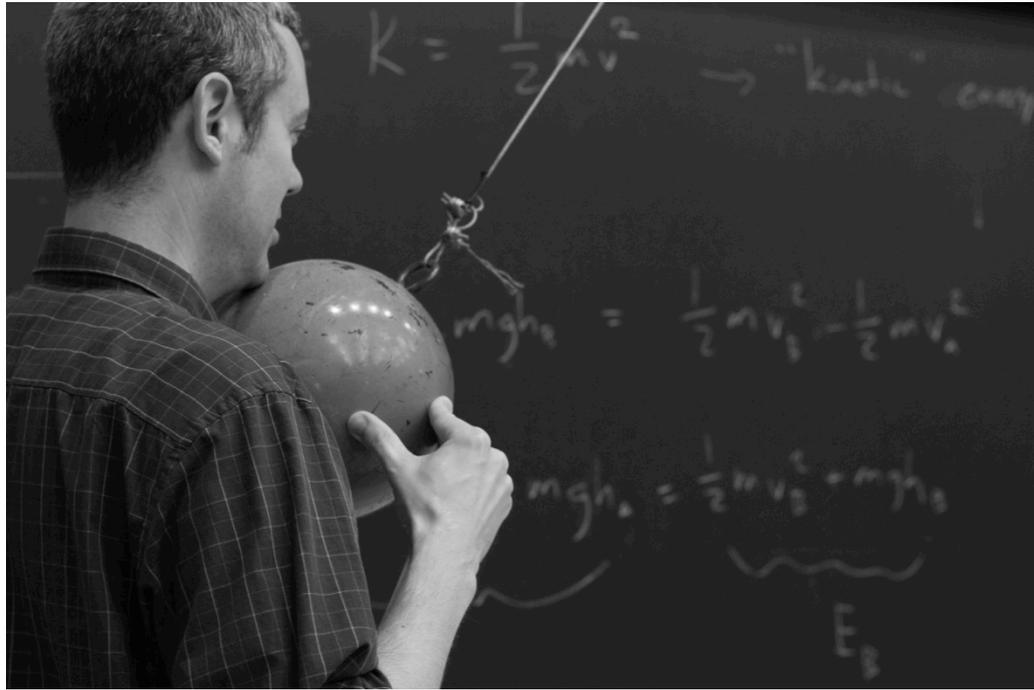
**and Have More Fun:**  
A Guide to Teaching and Mentoring in Science



*Martin Springborg*



*Martin Springborg*



*Martin Springborg*

# How did we do?



Build a useful  
structure for  
your NFW  
experience

- Identify aspects of **your context and personal characteristics** that matter for instructional decisions
- Fit your work into a **bigger picture** of university science teaching **change and adoption**
- Tap in to **resources** that will help and deal with **barriers** that may hinder

Keep in touch! Email: [cvh@caltech.edu](mailto:cvh@caltech.edu), Twitter: [@cvhorii](https://twitter.com/cvhorii)

# References & Resources

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