TPSEMath

Transforming Post-Secondary Education in Mathematics

The State of Teaching-Focused Faculty at Research Institutions

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FAIN#2440012

Association of Public & Land-grant Universities

Association for Undergraduate Education at Research Universities

Project EMBER

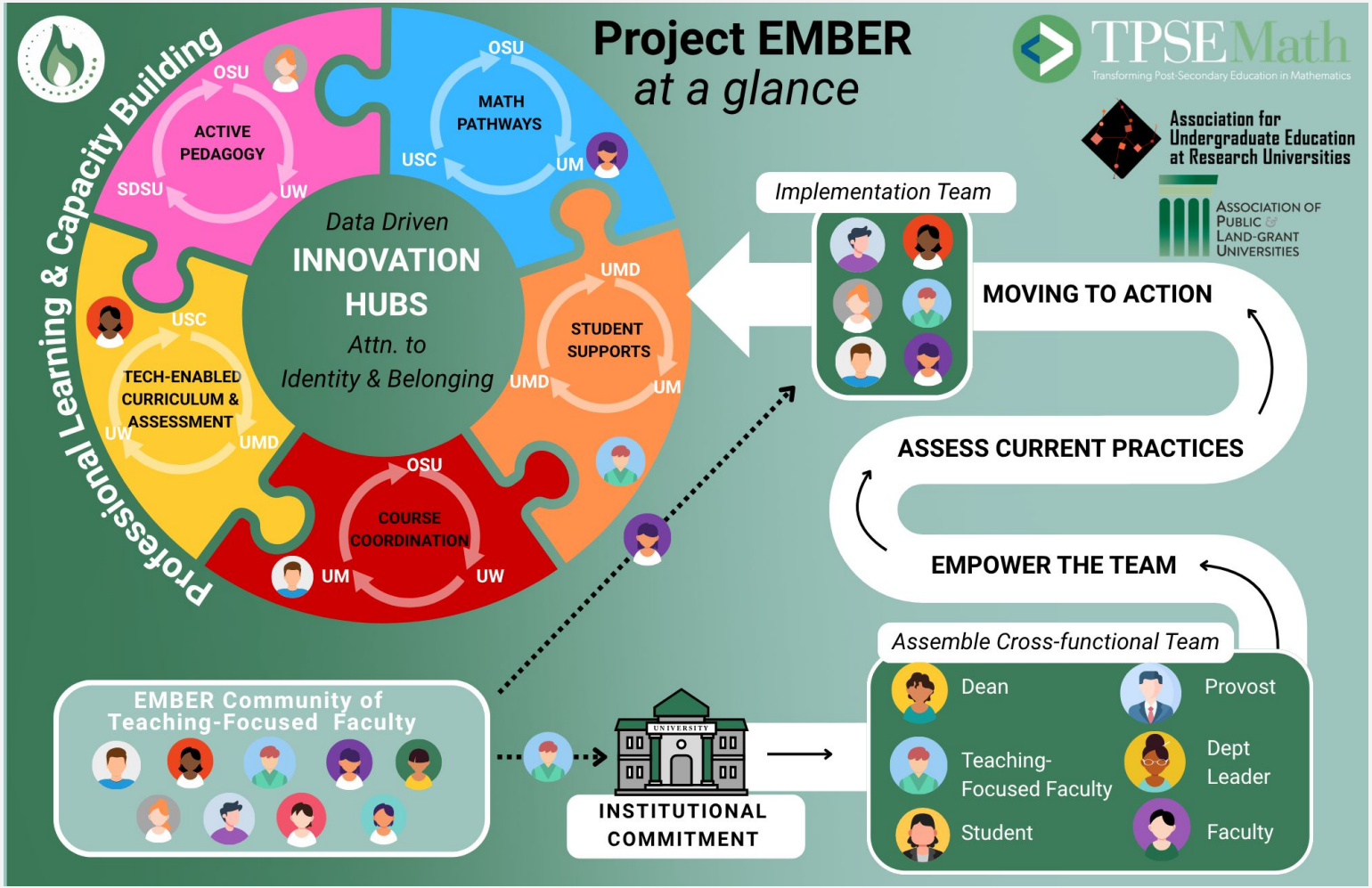
Eliminating Math Barriers through Evidence-Based Reforms

Project EMBER

Eliminating Math Barriers through Evidence-Based Reforms

BOLD VISION:

Every higher ed student succeeds in intro math aligned with their interests and aspirations.


Project EMBER
at a glance
TPSEMath
Transforming Post-Secondary Education in Mathematics
Association for Undergraduate Education at Research Universities
Association of Public & Land-grant Universities
Professional Learning & Capacity Building
Data Driven
INNOVATION HUBS
Attn. to Identity & Belonging
ACTIVE PEDAGOGY
OSU
UW
SDSU
MATH PATHWAYS
OSU
UM
USC
STUDENT SUPPORTS
UMD
UM
UMD
COURSE COORDINATION
OSU
UM
UW
TECH-ENABLED CURRICULUM & ASSESSMENT
USC
UMD
UW
Implementation Team
MOVING TO ACTION
ASSESS CURRENT PRACTICES
EMPOWER THE TEAM
Assemble Cross-functional Team
Dean
Provost
Teaching-Focused Faculty
Dept Leader
Student
Faculty
EMBER Community of Teaching-Focused Faculty
INSTITUTIONAL COMMITMENT

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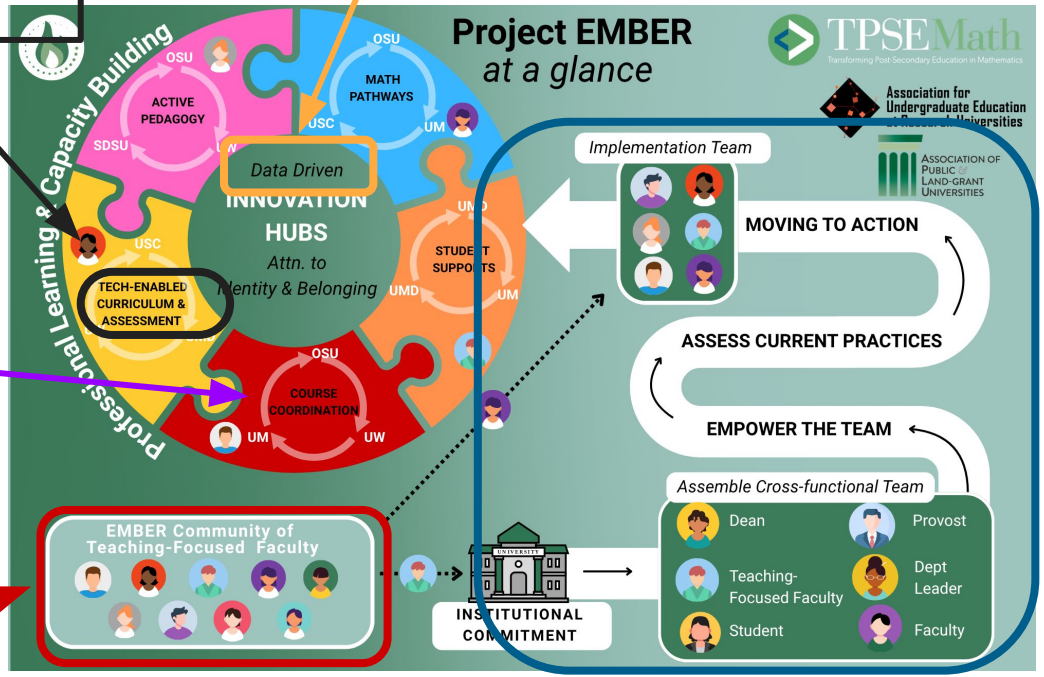
Implementing Learnvia's tech-enabled courseware (by invitation)

APLU's Research Study of DFWs (closed)

Moving 8 Research Institutions to Action (closed)

SDSU study of course coordination

EMBER Community of Teach-Focused Faculty (always open)



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tpsemath.org/projectember

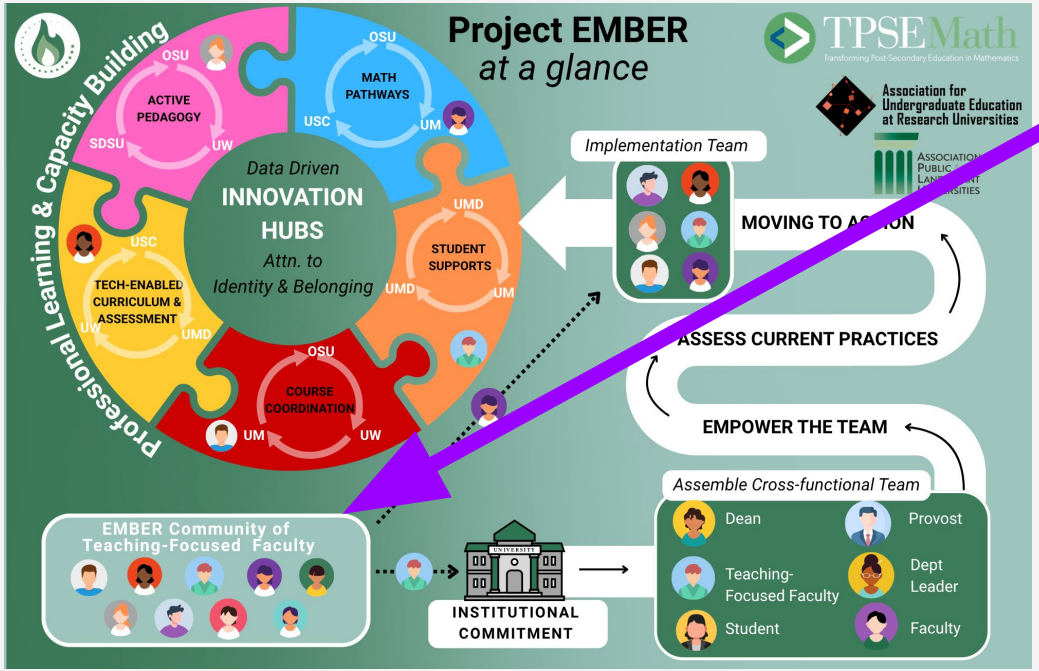
- EMBER Tools
- Join the EMBER Community of Teaching-Focused Faculty
- Learn more about TPSE

EMBER Interest Form

tinyurl.com/EMBERInterestForm

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YOU ARE HERE!

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Characterizing Teaching-Focused Faculty positions

Highly variable!

- Range of position titles
- Range of professional responsibilities
- Lesser than research faculty

University of California

- Research faculty (TT)
- Unit-18 Lecturer
- Professor of Teaching (TT)



Academic Personnel Manual

Members of the faculty…whose primary responsibility is **teaching and teaching-related tasks** and secondary responsibility is **professional and/or scholarly achievement and activity**, including creative activity, especially as they relate to instruction and pedagogy. The faculty in this series also have responsibility for **University and public service**.

Brian Sato (bsato@uci.edu)
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Characterizing the UC Professor of Teaching (PoT)

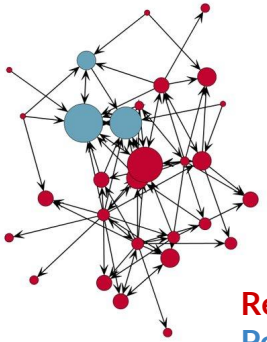
- 5-10% of TT faculty in UC system
- Present across all disciplines
- Spend ⅔ time on teaching w/ remainder split between research/service
- Research = disciplinary research, DBER, program assessment, curriculum dissemination

Impacts?

DUE 1612258
DUE 1821724

Faculty Interviews re: Conceptions of Teaching & Learning

- **Research faculty** - Instructor role is to convey info to students so they can eventually use on their own
- **PoTs** - Instructor role is to create a learning environment where students can develop their own understanding



Social Network Survey
Who do you go to for advice or whom do you consider to be influential on your teaching?

Research Professor
PoT

Classroom Observations
PoTs 3x as likely as **research faculty** to implement active learning practices

Barriers to UC Professor of Teaching Success

- Lack of clarity in the merit and promotion process
- Lack of departmental integration
- Variable rights (e.g. voting, PhD committee head, sabbatical, etc)

tpn.ucop.edu

The UC Teaching Professor Network (TPN) is a community for Professor of Teaching faculty at all UC campuses that aims to:

1. Facilitate collaborations on teaching, educational programming, curricular design, and pedagogical research
2. Develop leadership capacities in equity, diversity, and inclusion initiatives related to education
3. Establish formal mentorship structures
4. Provide opportunities to disseminate accomplishments
5. Advocate for the Professor of Teaching position across multiple levels of the UC system

What do Teaching-Focused Faculty positions look like more broadly?

Outline:

- High-level takeaways
- Survey methods
- Mathematics department faculty composition
- Teaching-Focused Faculty (TFF): Rights and Responsibilities
- Teaching-Focused Faculty (TFF): Impacts
- Introductory mathematics courses
- Conclusions

Introductory Mathematics at Research Institutions

High-level takeaways

- Teaching-Focused Faculty (TFF) make up 26% of full-time faculty
- Many TFF have similar rights and responsibilities as research faculty
- Intro math courses are nearly all coordinated, many tightly coordinated.

Introductory Mathematics at Research Institutions

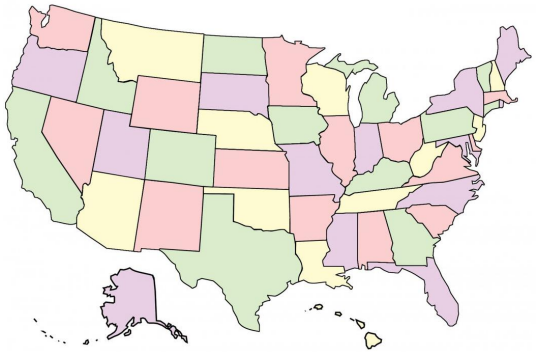
Survey methods

Survey captures:

- Faculty contributions to undergraduate education
- Faculty roles & responsibilities
- Structure of introductory mathematics courses

Distribution

- Identified institutions with PhD granting Mathematics programs
- Survey sent to 185 Mathematics dept chairs
- Responses from 89 depts (48% completion rate)



Data Analysis

- Data were cleaned and a descriptive analyses of all items ($\bar{X}$, SD, frequencies, etc) were performed

UC Irvine
The PERI Institute

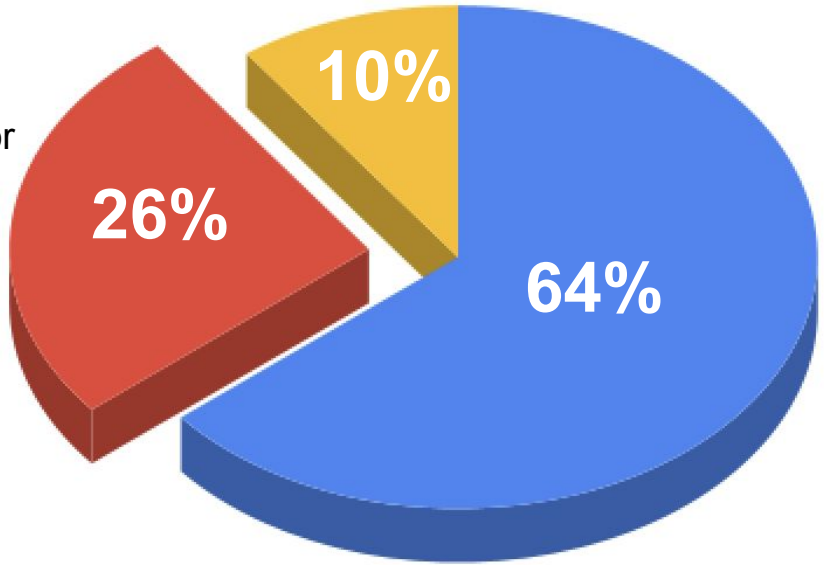
Introductory Mathematics at Research Institutions

What is the full-time faculty composition in Mathematics departments?

Teaching-Focused Faculty (TFF):

- Primary focus: **classroom instruction**
- Contributions to **research** and/or other teaching activities (e.g. course coordination)
- Predominantly on long-term contracts
- Common titles: Teaching Professor, Professor of Teaching, Professor of Practice

Lecturers: Sole focus on **classroom instruction**



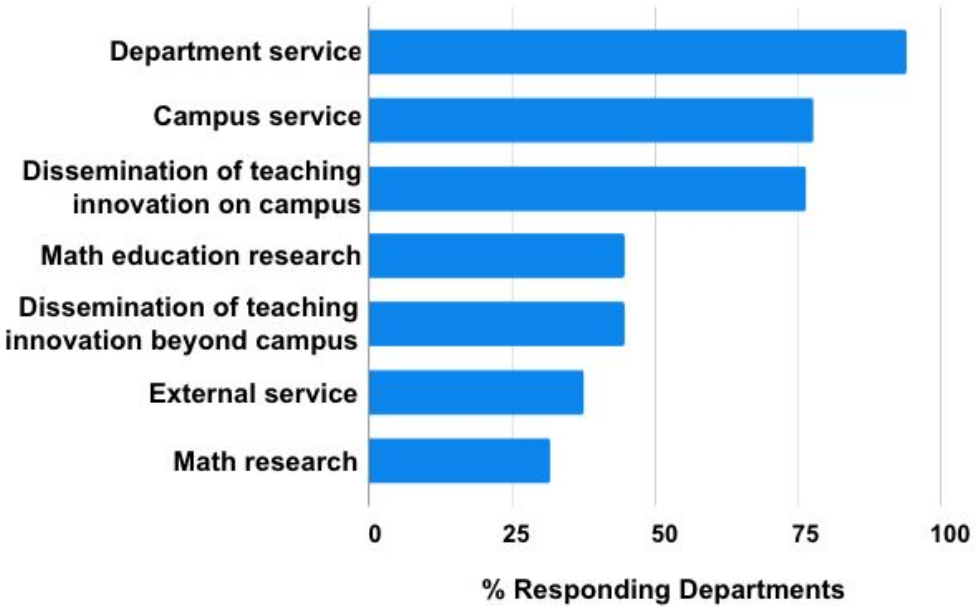
Research faculty:

- **Research** and **teaching** responsibilities w/ emphasis on research
- Predominantly tenure-track

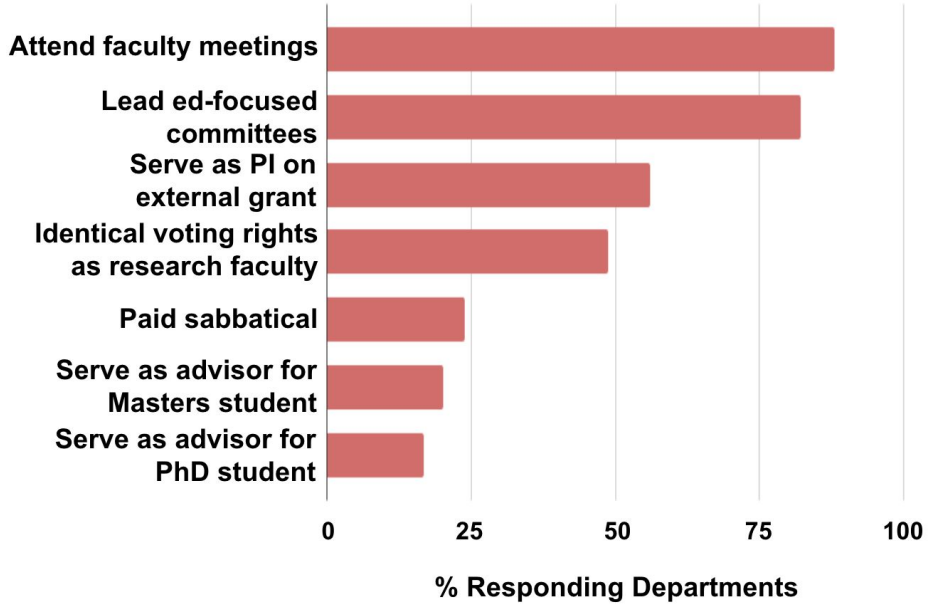
Introductory Mathematics at Research Institutions

Teaching-Focused Faculty (TFF): Rights and Responsibilities:

TFF Responsibilities (beyond classroom instruction)



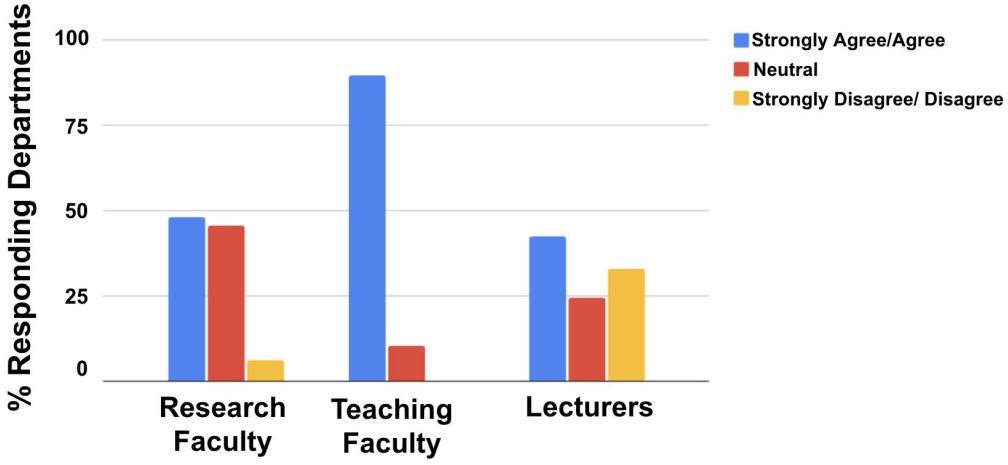
TFF Rights



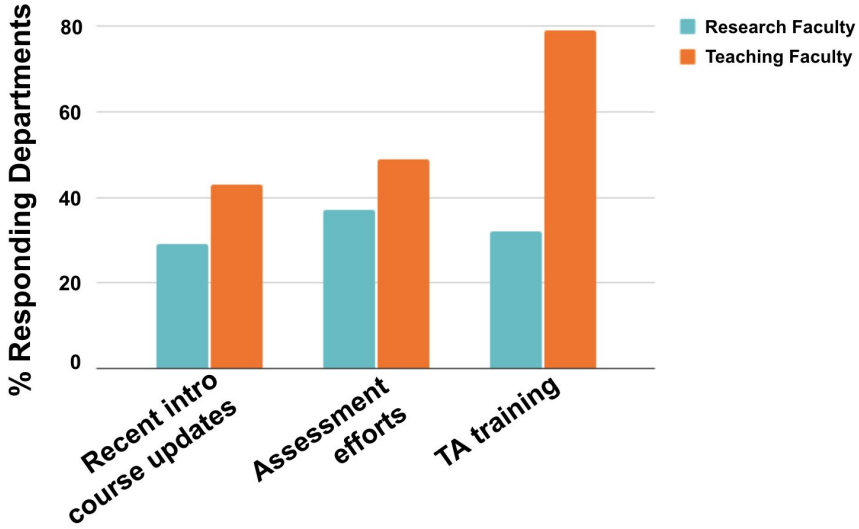
Introductory Mathematics at Research Institutions

Teaching-Focused Faculty (TFF) Impacts

Agreement with the statement: _____ *are driving educational innovation within our department*



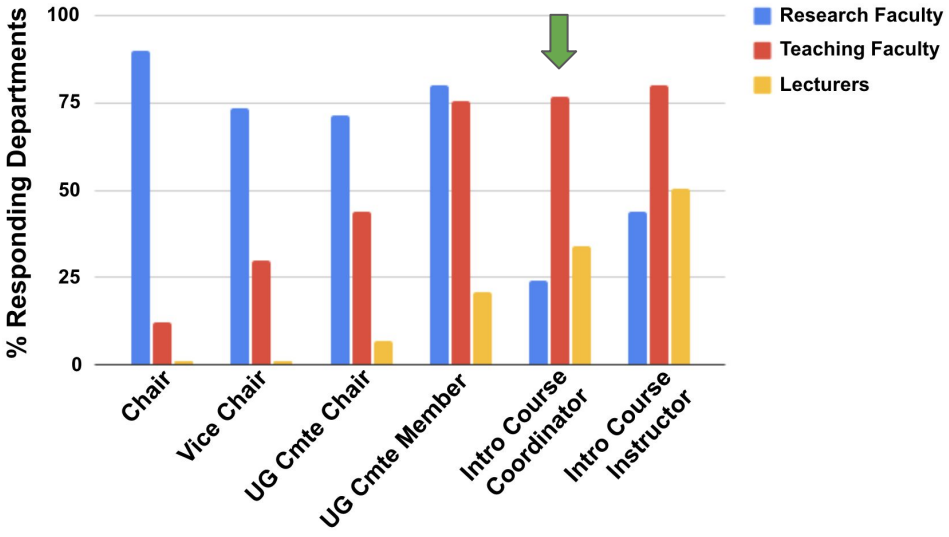
These faculty are leaders of the following department educational efforts:



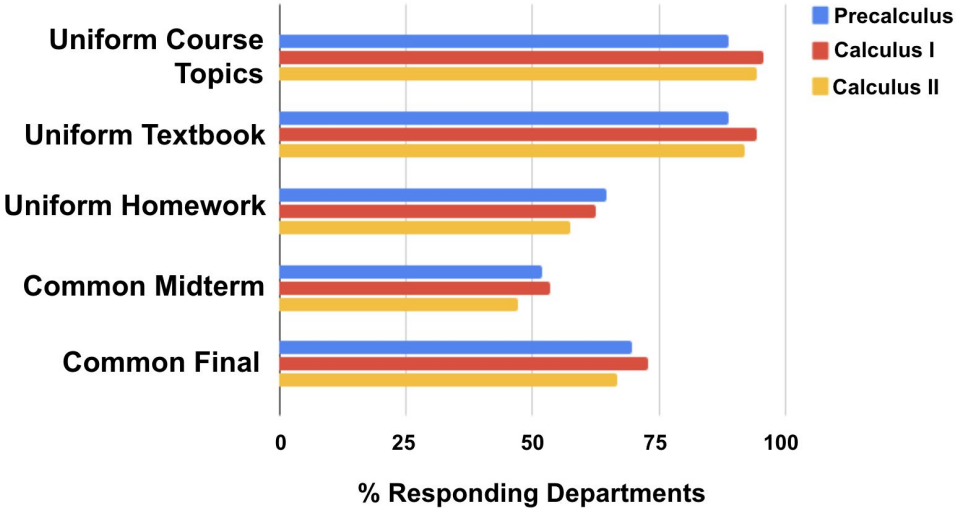
Introductory Mathematics at Research Institutions

TFF and course coordination

Administrative Roles by Faculty Type



Course Coordination



Discussion

Introductory Mathematics at Research Institutions

Conclusions:

- Teaching-Focused Faculty (TFF) make up 26% of full-time faculty
- Many TFF have similar rights and responsibilities as research faculty
- Intro math courses are nearly all coordinated at some level
    - Many are tightly coordinated.

Elevating TFF creates alignment between departmental decision-making and revenue-generating activities (intro math).

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LEADERSHIP

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- Howard Gobstein, APLU
- Joseph Glover, University of Florida
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- Gavin LaRose, University of Michigan
- Melissa Lindsey, University of Wisconsin, Madison
- Mary Pilgrim, SDSU
- Chris Rasmussen, SDSU
- Natasha Speer, University of Maine
- Megan Tesene, APLU
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Thanks!

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Today's Slides:
tinyurl.com/TFFWebinar

www.tpsemath.org/projectember