

Time Spent on Research with Undergraduate Students

Gender Differences among
STEM Faculty

Amber D. Lambert

Amy K. Garver

Allison BrckaLorenz

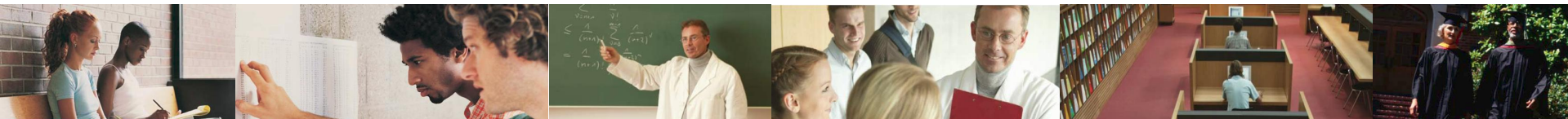
Antwione Haywood

Indiana University
Center for Postsecondary Research

Research Focus

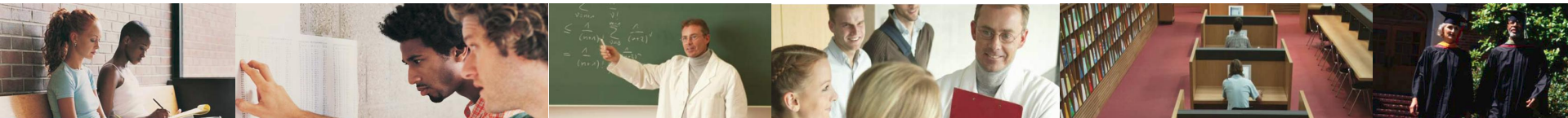
The aim of this study is to explore characteristics that contribute to faculty members spending more time mentoring undergraduate students in research

With a particular focus on disciplinary fields (STEM) where retention of underrepresented students groups are of a concern.



Review of Literature

- Undergraduate students participating in research tend to have higher intellectual gains, greater retention rates, and stronger mentoring relationships with faculty (e.g. American Council of Learned Societies, 2007; Bauer & Bennett, 2003; Eigren & Hensel, 2006)
- Also it leads to increased job interests in the STEM fields (e.g. Russell, Hancock, & McCullough, 2007).
- Particularly important as a way to sustain and attract minority population which are underrepresented in the STEM fields (e.g. Bauer & Bennett, 2003; Lopatto, 2004)

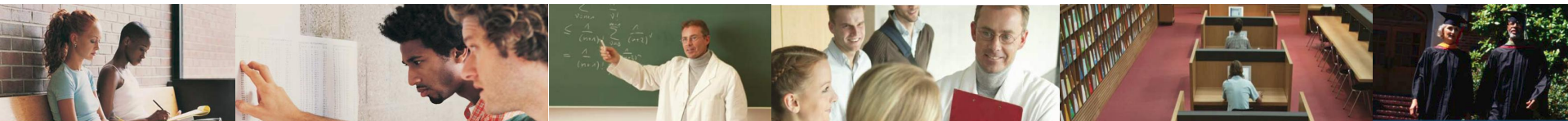


Guided Research Question

Does a difference exist between the time male and female faculty spend working with students on their research ?

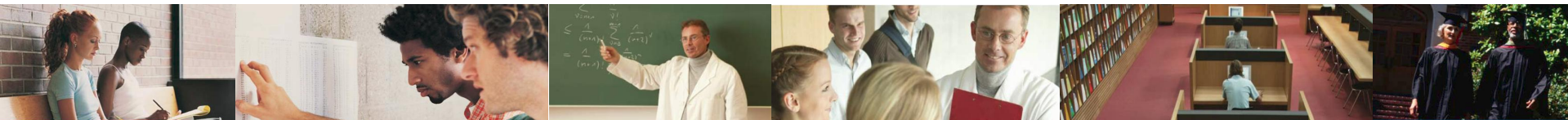
If so, does the gap vary by STEM and non-STEM fields?

What other faculty characteristics might explain any differences?



FSSE Instrument

- Online survey
- General topics
 - Faculty perceptions of student engagement
 - Importance or emphasis faculty place on various activities and areas of learning and development
 - Faculty perceptions of the campus environment
 - How faculty members organize class time
- In 2008, over 23,000 faculty from 160 institutions
- Two survey options (course-based & typical student)



Sample characteristics

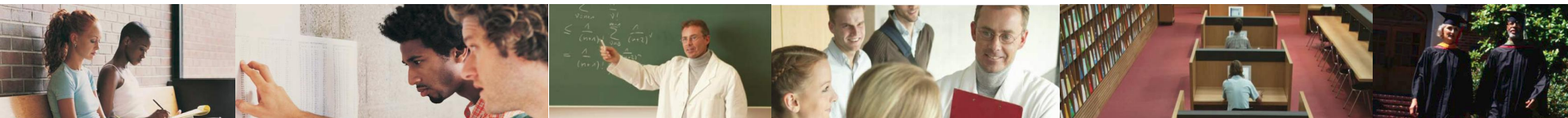
9,862 faculty members

- 48% Women
- 77% White
- 6% non-U.S. citizens
- 84% Full-time
- 22% Lect/Inst
- 27% Assist, 25% Assoc
- 27% Full Professor

- From 112 U.S. Inst
 - 36% from research/doc
 - 42% from master's
 - 22% from baccalaureate
- 33% from private inst

Discipline

- 34% STEM
- 66% Non-STEM



Analyses

- Hierarchical, OLS regression
- Dependent measure
 - Average hours per week faculty spent working with undergraduates on research
- Independent measures
 - Gender
 - Discipline (STEM and Non-Stem)
 - Other faculty, institutional controls
 - Interaction terms = disciplinary x gender
- Mean and adjusted mean differences reported

Results

OLS regression of Faculty time per week spent working with undergraduates on research

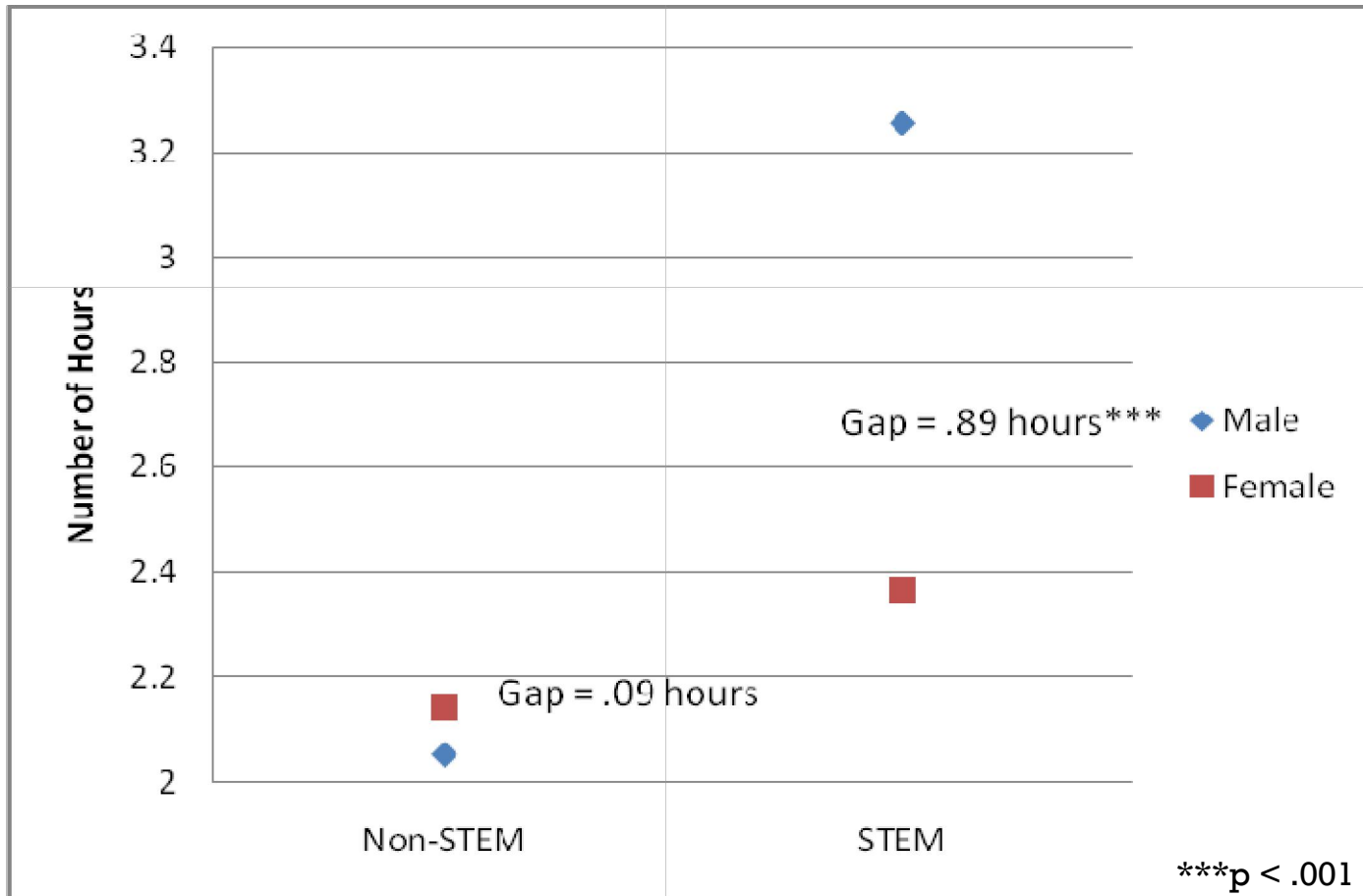
	Time on Undergraduate Research
Variance due to:	
Faculty Characteristics	.109***
Institutional Characteristics	.011***
Interaction Terms	.001***
Total Variance Explained	.121***
Adjusted R ²	.119***

***p < .001

Results

Faculty time per week spent working with undergraduates on research by discipline and gender

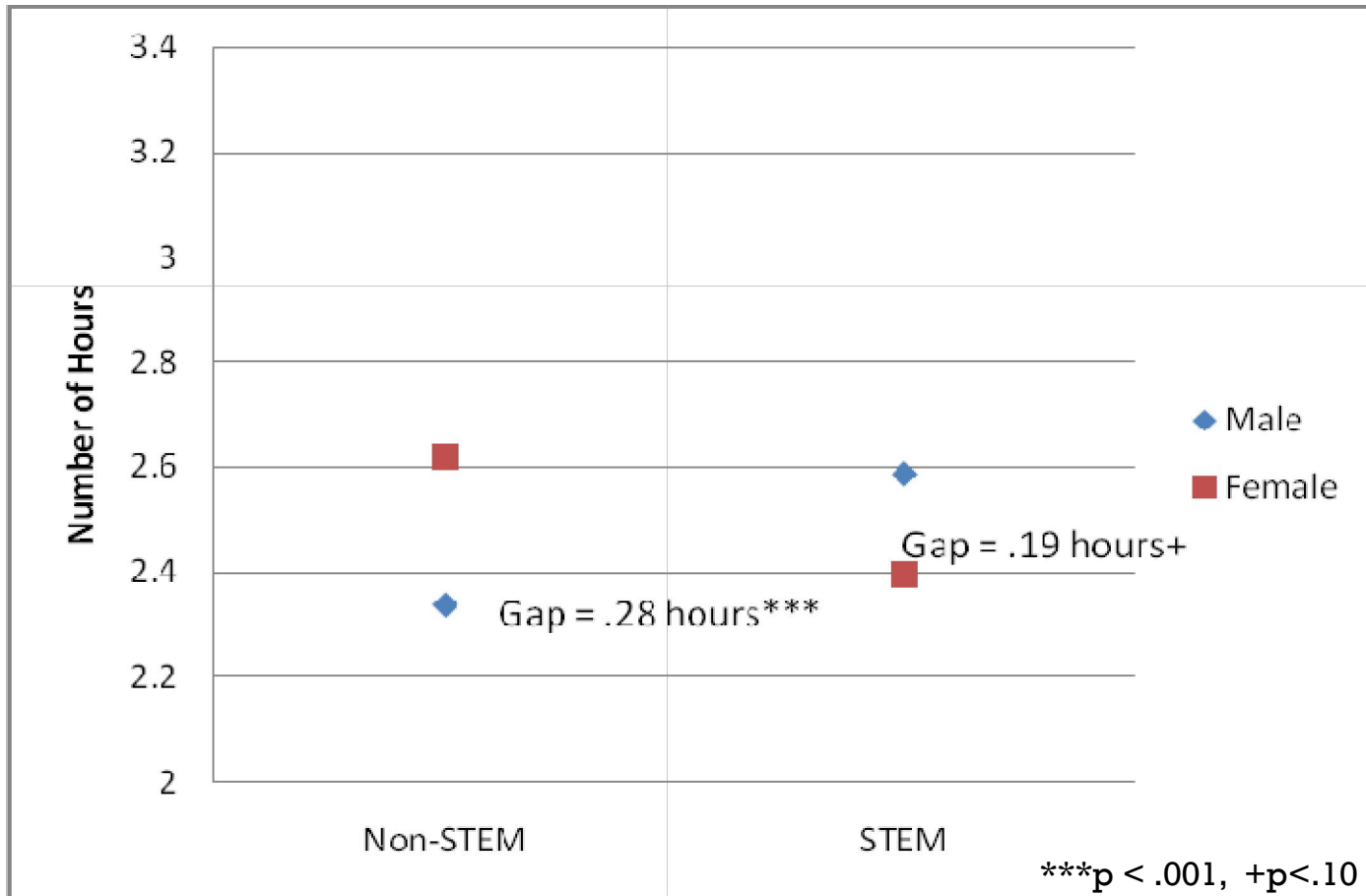
Mean Differences



Results

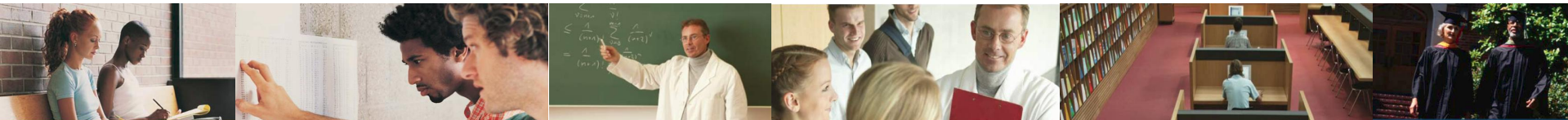
Faculty time per week spent working with undergraduates on research by discipline and gender

Adjusted Mean Differences



Implications/Conclusions

- Remove any organizational barriers that might keep female STEM faculty from having time to do research with undergraduate research (e.g. the level of courses they teach, course loads)
- Extra support/incentive for faculty who have been teaching in STEM fields for many years to do undergraduate research
- In non-STEM fields make sure participation in undergraduate research is part of promotion and tenure to ensure faculty along all spectrum of faculty rank participate



For More Information

Email: adlamber@indiana.edu
agarver@indiana.edu
abrckalo@indiana.edu
amhaywoo@indiana.edu

FSSE website: www.fsse.iub.edu

NSSE website: www.nsse.iub.edu

To download copies of our paper and presentation, please visit:
<http://nsse.iub.edu/links/presentations>