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## Research Panel: Variation in Women Attaining Full Professorships at Research Universities and Non-Tenured Faculty Systems in the US and Abroad

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# STRUCTURAL/ ORGANIZATIONAL DETERMINANTS OF VARIATIONS IN WOMEN ATTAINING THE FULL PROFESSORSHIP AT RESEARCH UNIVERSITIES

Darkey: Research Panel: Variation in Women Attaining Full Professorships

Presentation by:

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Dr. Sandra Darkey

March 6th, 2019

# OUTLINE OF PRESENTATION

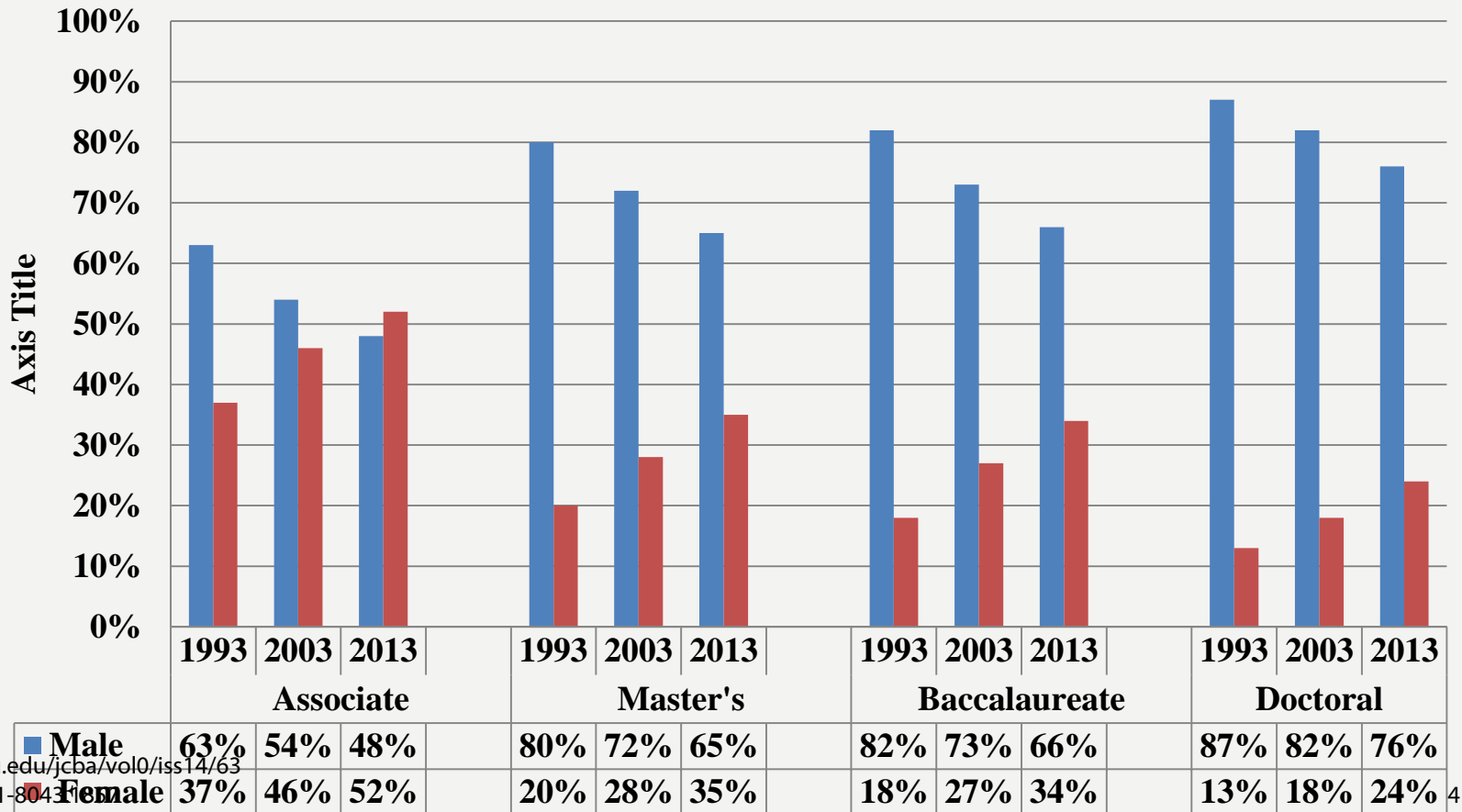
- Introduction and Problem Statement
- Research Question
- Conceptual Framework and Literature Review Overview
- Research Design
- Results
- Implications and Conclusions
- Questions/Feedback

# PROBLEM STATEMENT

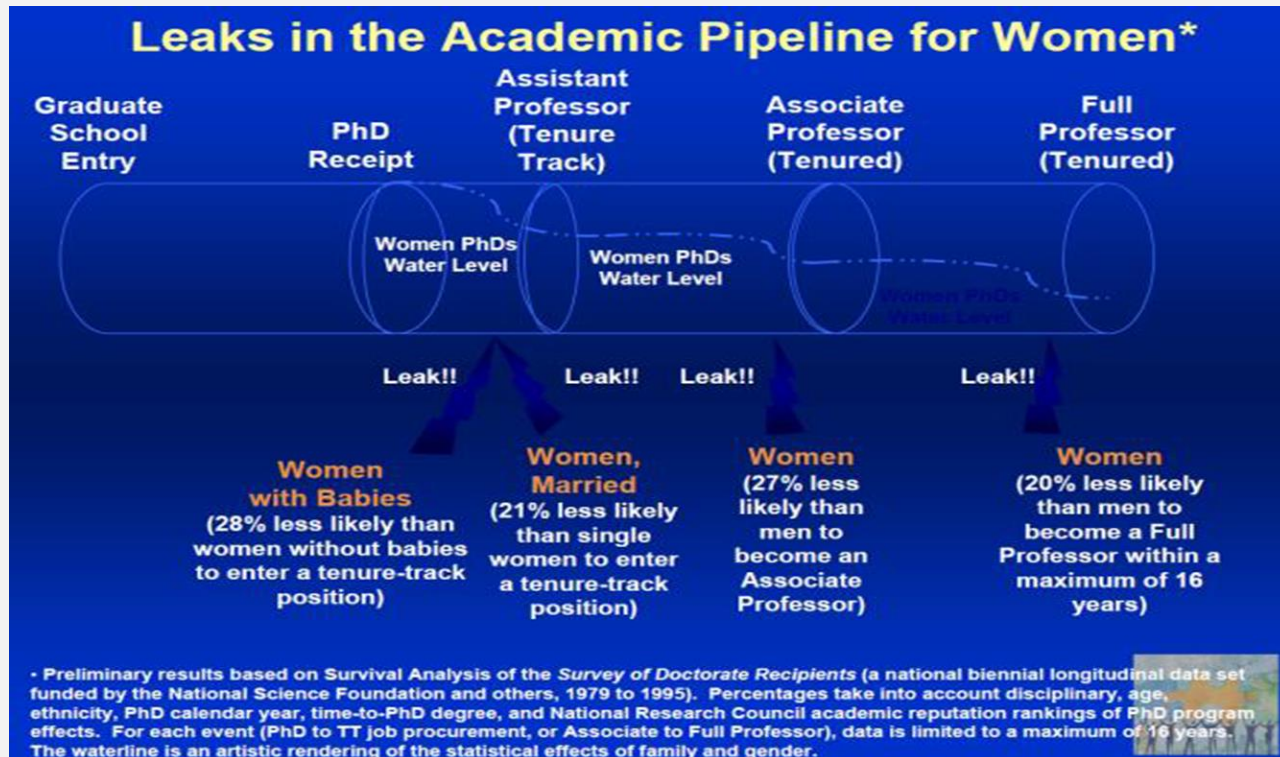
- There has been a highly significant influx in the last half century of women and racial minorities into U.S graduate education (Connolly, Lee, & Savoy, 2015)
- Measures put in place by US Legislature in the 1970's to increase females and minorities in higher education proved successful looking at the data. (Luke, 2001)
- Promotion to full professor is an area where inequities persist in the career growth of faculty women.
- This dilemma is at its worst in the Doctoral/Research Universities. (The next slide will present a breakdown of the gender gap by institution type)

# DATA – FEMALE FACULTY BY INSTITUTION TYPE

Full Professors by Gender and Institutional Type, 1993-2013



# INTRODUCTION : LEAKS IN THE ACADEMIC PIPELINE FOR WOMEN



# RESEARCH QUESTION

1. To what extent are there observed differences in the organizational / structural characteristics of the research universities with high and low proportionate representation of female full professors in 2013?
2. To what extent are there observed differences in being a member of a union or other bargaining association with the proportionate representation of female full professors in 2013?

# CONCEPTUAL FRAMEWORK

## Structural/Organizational Theory

- Focuses on the impact of the characteristics of the university where faculty was trained and is currently employed “including financial resources, student enrollment, the tenure system, and collective bargaining agreements”.
- Emphasizing structural and institutional factors and the discriminatory role of labor markets and employers (McBrier, 2003; Perna, 2001)

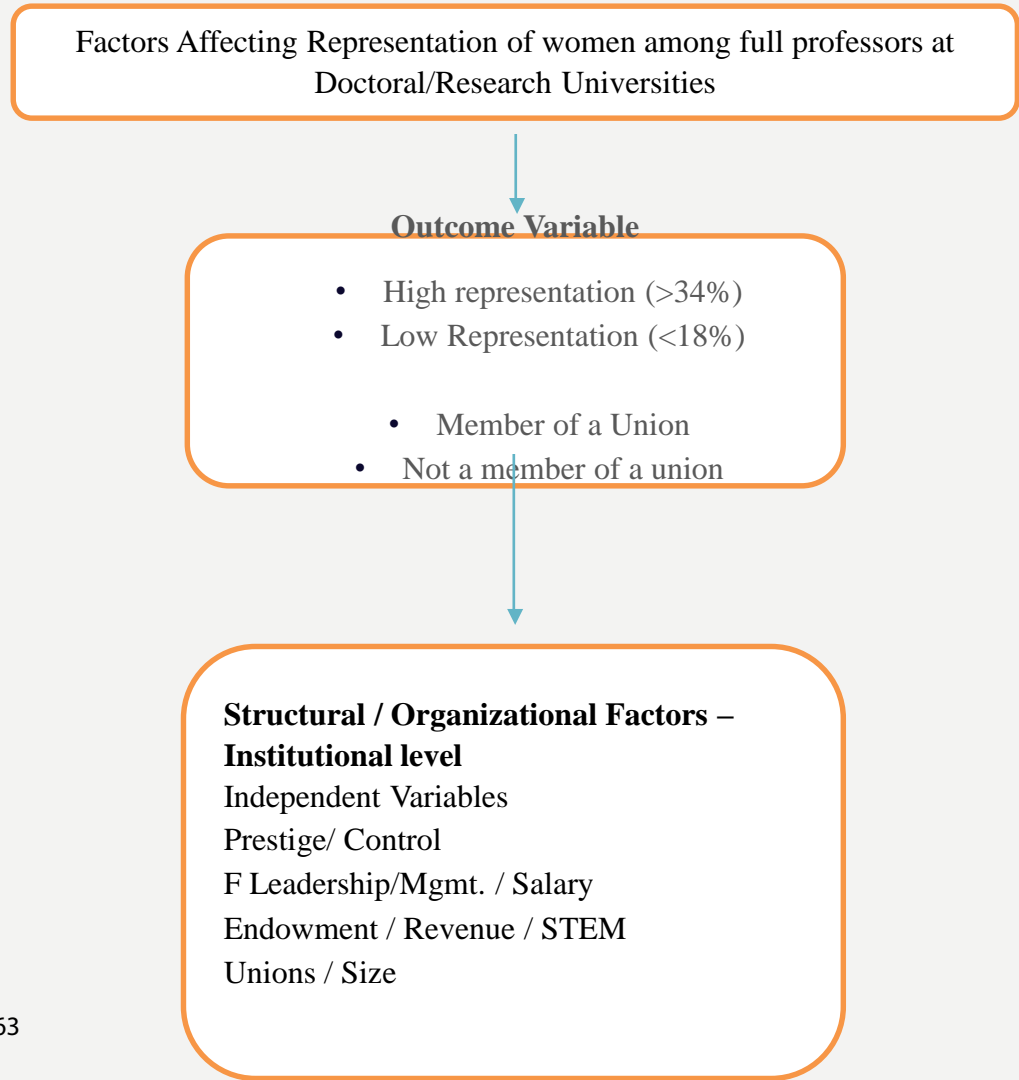


# OVERVIEW OF LITERATURE REVIEW – STRUCTURAL/ORGANIZATIONAL THEORY

- Institutions with female leadership have higher diversity growth ( Ehrenberg, Jakubson, Martin, Main & Eisenberg, 2012)
- Institutions with high females amongst faculty can be attributed to more women in top administrative jobs ( Szafran, 1984; Bach & Perrucci, 1984)
- Unionized public research universities have a higher proportion of women faculty at associate & full professor ranks ( May et al., 2010)
- Institutions with larger endowments more likely to have less tenured female faculty (Kulis, 1997)
- STEM oriented institutions report lower proportion of women among faculty ( May et al., 2010)

# RESEARCH DESIGN

# FRAMEWORK FOR THE STUDY



# DATA & ANALYSIS

## Data

- Integrated Postsecondary Education Data Systems (IPEDS)
- N=55 Research Universities
- 2013 Institutional level data

## Analysis

- Chi-Square
- T-Test

## Missing Data

- Casewise deletion

# DESCRIPTIVE STATISTICS OVERVIEW – INDIVIDUAL LEVEL

## By Rank

Full Professors – 619

Associate Professors – 661

Assistant Professors – 511

## Race & Ethnicity

89.1% - White Women

4.8% - Asian

3.5% - Black

0.6% - American Indian

0.1% - Native Hawaiian

## Latino Descent

Yes – 5.4%

No – 92.9%

## Age Range

28-32

## Years since PhD

1-55

## PhD granting Institutions

71% from highest prestige

## Geographic Mobility

72% - Yes

## Academic Discipline

70.5% - Soft Disciplines

## Primary Job Task

60.7% - Teaching

## Marital Status

70.9% - Married

## Parenthood

52.1% - No Children

# RESULTS

# DESCRIPTIVE STATISTICS OVERVIEW — INSTITUTION LEVEL

## Institutional Prestige

20 Doctoral/Research Universities

21 High Research Universities

14 Very High Research Universities

## Control

28 – Public

27 – Private – for – Profit

## STEM Oriented

6 – Yes

49 – No

## Unions

14- Yes

## Female Leadership

31/55 - 0 Years

## Females in Top Administration

13% - 66%

## Endowment Size

\$28 - \$980,404

## Institution Size

2,181 – 55,697

## Salary

\$74,151 - \$185,166

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# TO WHAT EXTENT ARE THERE OBSERVED DIFFERENCES IN THE ORGANIZATIONAL / STRUCTURAL CHARACTERISTICS OF THE RESEARCH UNIVERSITIES AND THE PROPORTIONATE REPRESENTATION OF FEMALE FULL PROFESSORS IN 2013?

## Chi-Square Test

- Prestige
- STEM
- Unions

## T-Test

- Years with Female Presidents
- % of Females in Mgmt
- Salary

Statistically Significant at  $P \leq .01$

## 2. TO WHAT EXTENT ARE THERE OBSERVED DIFFERENCES IN BEING A MEMBER OF A UNION OR OTHER BARGAINING ASSOCIATION WITH THE PROPORTIONATE REPRESENTATION OF FEMALE FULL PROFESSORS IN 2013?

Member of a Union						
	Low Rep FFP		High Rep FFP		Total	
	N	%	N	%	N	%
No	632	94.0%	550	72.3%	496	82.5%
Yes	40	6.0%	211	27.7%	1288	17.5%
Total	672	100%	761	100%	1784	100%

# **IMPLICATIONS AND CONCLUSIONS**

# SUMMARY OF RESULTS

<b>Structural/ Organizational &amp; Human Capital Factors that account for:</b>	
<b>Low Representation of female Full Professors</b>	<b>High Representation of Female Full Professors</b>
<i>Higher Prestige</i>	<i>Lower Prestige</i>
<i>STEM Institutions</i>	<i>Non-STEM Institutions</i>
<i>No Unions</i>	<i>Unions</i>
<i>Less Years with Female Leadership</i>	<i>More Years with Female Leadership</i>
<i>Less Females in Management</i>	<i>More Females in Management</i>
<i>Higher average Salaries</i>	<i>Lower Average Salaries</i>
<i>Hard Disciplines</i>	

# Implications for Policy & Practice

- Institutions need to implement policies that ensure a diversified leadership
- Need for more research on gender gap in Research Universities

# Limitations

- Structural/organizational characteristics of research institutions from 2013 / Individual characteristics of female faculty within the intuitions was collected in 2017
- 15% Survey response rate
- 89% of survey respondents white female
- Failure to tailor survey to collect data from retired or inactive faculty

# FUTURE RESEARCH

- Further study on why smoother and shorter jump from assistant to associate than from associate to full professor
- Qualitative Study with background data on how creative measures women faculty employ to progress their career
- Develop and continue to use equity policies at the institutional level to overcome disparities in faculty hiring and promotion.

# CONCLUSION

- The purpose of this study was to determine the factors that account for some Doctoral/Research Universities having a high representation of female full professors and other Doctoral/ Research Universities having a low representation.
- This study compared institutional characteristics of female faculty to help determine observed differences between the two groups of institutions
- The results of Chi-Square and T-Test indicate unions, prestige, STEM orientation, female leadership, females in management, and average salaries had a significant correlation with high or low group of institutions

# QUESTIONS?





# APPENDIX TABLES

# List of Academic Disciplines categorized under hard and soft disciplines

Disciplinary Areas by Biglan Categories of Hard and Soft	
Hard	Soft
Agriculture/natural resources/related	Architecture and related services
Biological and biomedical sciences	Area/ethnic/cultural/gender studies
Computer/info sciences/support tech	Arts--visual and performing
Engineering technologies/technicians	Business/management/marketing/ related
Mathematics and statistics	Communication/journalism/comm.Tech
	Education
	English language and literature/letters
	Family/consumer sciences, human sciences
	Foreign languages/literature/linguistics
	Health professions/clinical sciences
	Legal professions and studies
	Library science
	Multi/interdisciplinary studies
	Parks/recreation/leisure/fitness studies
	Philosophy, religion & theology
	Physical sciences
	Psychology
	Public administration/social services
	Science technologies/technicians
	Social sciences (except psych) and history
	Teaching & educational studies

# Institutional categories of degree granting institutions

Prestige of highest granting degree - Variable Coding	
Carnegie Classification of Prestige	Doctoral/Research Universities - Low Prestige
	High research activity -Mid Prestige
	Very high research activity - High Prestige
Classified under Other	Not Applicable, not in Carnegie Universe (Not Accredited or nondegree-granting)
	Master's Colleges and Universities (Larger Programs)
	Master's Colleges and Universities (Medium Programs)
	Master's Colleges and Universities (Smaller Programs)
	Baccalaureate Colleges - Arts & Sciences
	Baccalaureate Colleges - Diverse Fields
	Theological Seminaries & Other Faith Related Institutions
	Medical Schools & Medical Centers
	Other Health Professions Schools
	Schools of Art, Music & Design
	Schools of Law
Foreign Institution	