

# Good Jobs in Science

work organization and work satisfaction in a large  
research laboratory

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# Acknowledgements

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# Good Jobs

Defined by:

- Steady work
- Benefits: health insurance; sick leave; paid vacation; retirement
- Wages, salary
- Hours: daytime Monday to Friday

# STAR in NOAA

- By the objective criteria, the jobs at STAR are good jobs
- Government research laboratory
- Produces data for public use and analyses to inform public policy
- Data come from weather satellites
- Scientists develop algorithms and predictive models, design instruments

# Labor Markets for Scientists

- Scientists are the “s” in STEM workers -- occupations related to science, technology, engineering, mathematics
- The number of STEM workers is expected to grow more quickly than other workers in the next decade
- There has been little study of how STEM workers might be different from other workers

# Data Collection

- Data collection in 2005, 2007 and 2009
- All scientists recruited to participate
- 133 responses representing 84 distinct individuals; response rates from 50% to 79%
- Important areas identified in 15 focus groups
- Questions developed of the form “What percent of the time is it true that .... 10-20%, 20-40%....

# Work Satisfaction

- Common question is “Overall, how satisfied are you with your work?”
- We have 2 questions
  - “Overall, I would rate my research/work environment as ... very poor ... excellent
  - Overall, I believe my research/work environment is ... getting worse ... improving

# Work Satisfaction

## General Labor Force

	Regression coefficient
Job security	0.65***
Learn skills	0.57***
Participation	0.50***
Work intensity	-0.45***
Benefits	0.28***
Promotion opportunities	0.12
Work freedom	-0.06



# Work Satisfaction

	Regression coefficients	
	Labor Force	STAR Scientists
Job security	0.65***	0.61*
Learn skills	0.57***	0.35
Participation	0.50***	0.96***
Work intensity	-0.45***	
Benefits	0.28***	-0.38
Promotion	0.12	0.56*
Work freedom	-0.06	0.58**

Source: Kalleberg 2011, Table 9.1. Ordered logistic regression of 2006 GSS data with demographic and work characteristic controls, and NOAA survey with controls for years in STAR, percent time on research, manager.

# Determinants of Job Satisfaction

- External rewards: salary and benefits, career advancement, education and prof. development, rewards and recognizes merit
- Internal rewards: challenge, time to think creatively, resources to pursue new ideas, authority to make decisions
- Learning: critical thinking, teamwork and collaboration, cross-fertilization of ideas, communication

# Determinants of Job Satisfaction

- Quality of management: integrity, informed and decisive, adds value, planning and execution of projects, allocation of internal funds
- Management strategy: champions foundational research, identification of new opportunities, vision and strategy, investment in future capabilities
- Respect for individuals: trust each other, open to each other's ideas

# Correlation with Work Satisfaction

Intrinsic	0.64
Extrinsic	0.43
Learning	0.56
Respect	0.50
Management	0.76
Strategy	0.70

Control variables: years in STAR, percent time on research, manager.

# Work Satisfaction

## Regression coefficients

Intrinsic	0.97***		0.55***
Extrinsic	-0.01		-0.30*
Learning	0.25		-0.11
Respect	0.41***		0.28**
Management		0.93***	0.79***
Strategy		0.47**	0.34
Adjusted R <sup>2</sup>	0.57	0.60	0.67

Control variables: years in STAR, percent time on research, manager.

# Conclusions

- Scientists look for job satisfaction in different places than workers in general
- They are more driven by internal rewards than external rewards
- The quality of management has a strong influence on the work satisfaction of scientists