

Assessment of 21st Century Professional Competencies of Undergraduate Students

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**Plus - Houston Lester, Jim Bovaird, and Kate Lagerstrom
University of Nebraska-Lincoln**

CAREER READINESS

for the New College Graduate

A DEFINITION AND COMPETENCIES



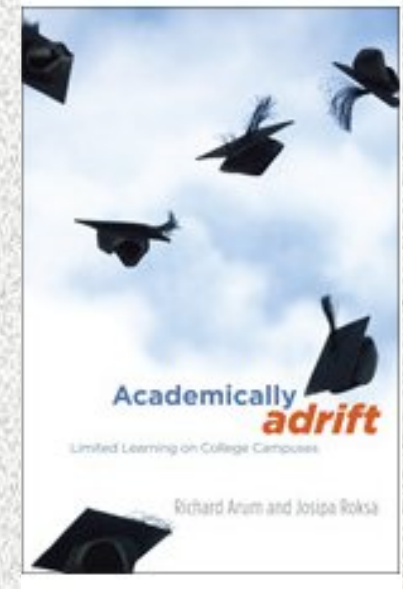
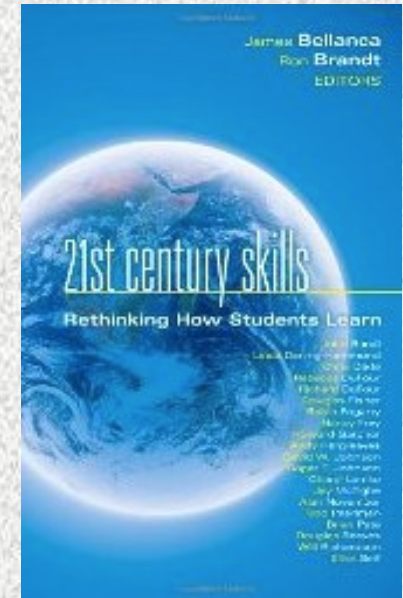
Question

**Comparative Analysis of Soft Skills:
What is Important for New Graduates?**
Perceptions of Employers, Alum, Faculty and Students

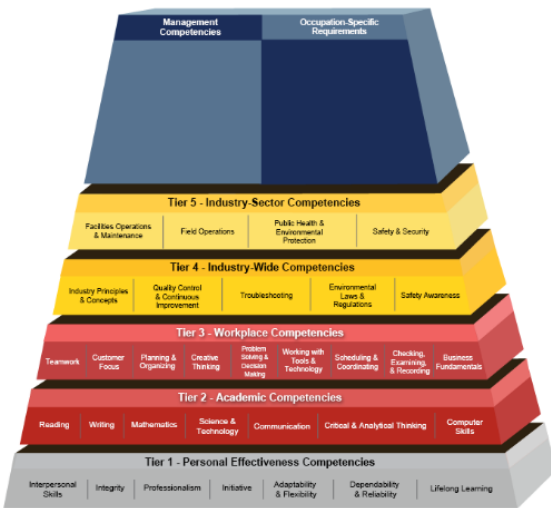
Michigan State University, College of Agriculture & Natural Resources, East Lansing, Michigan. 4 August 2011

A joint study with the Association of Public and Land-grant Universities (APLU) and the University Industry Consortium (UIC).

Pat Crawford, Suzanne Lang, Wendy Fink,
Robert Dalton & Laura Fielitz



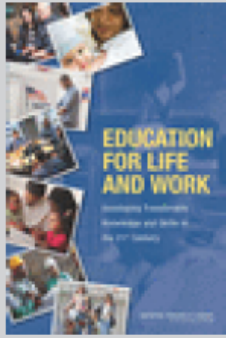
Water and Wastewater Competency Model



What skills will help new graduates perform well on the job and foster career development?

Question

This PDF is available from The National Academies Press at http://www.nap.edu/catalog.php?record_id=13398



Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century

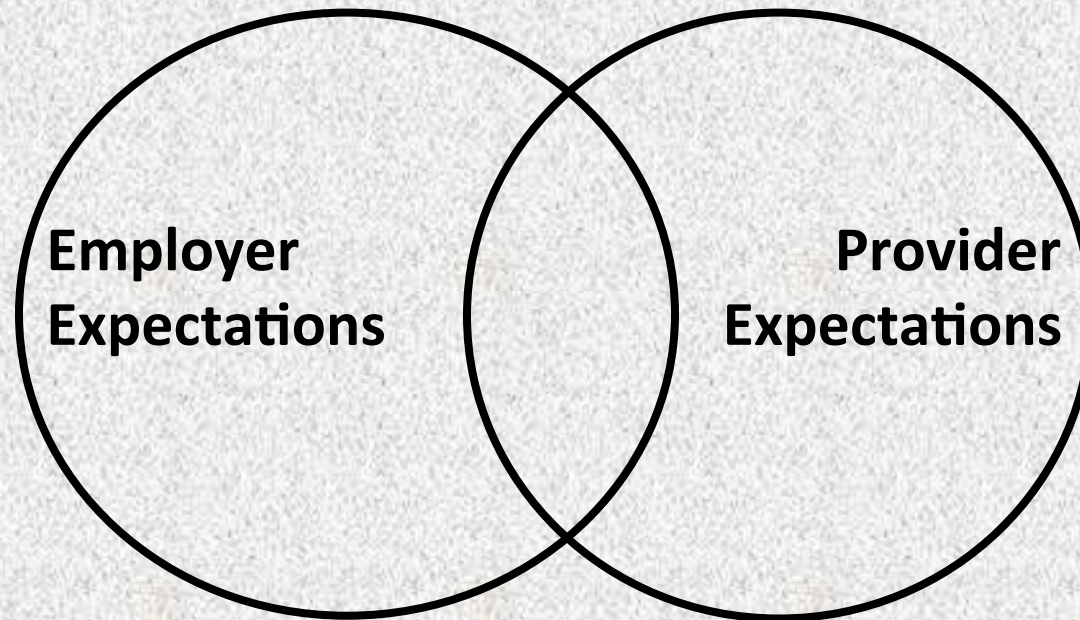
ISBN
978-0-309-25649-0

300 pages
6 x 9
PAPERBACK (2012)

James W. Pellegrino and Margaret L. Hilton, Editors; Committee on Defining Deeper Learning and 21st Century Skills; Center for Education; Division on Behavioral and Social Sciences and Education; National Research Council

To what extent are we helping our students develop 21st Century Skill Sets?

Question: To what extent do we, as employee providers, meet employer expectations?



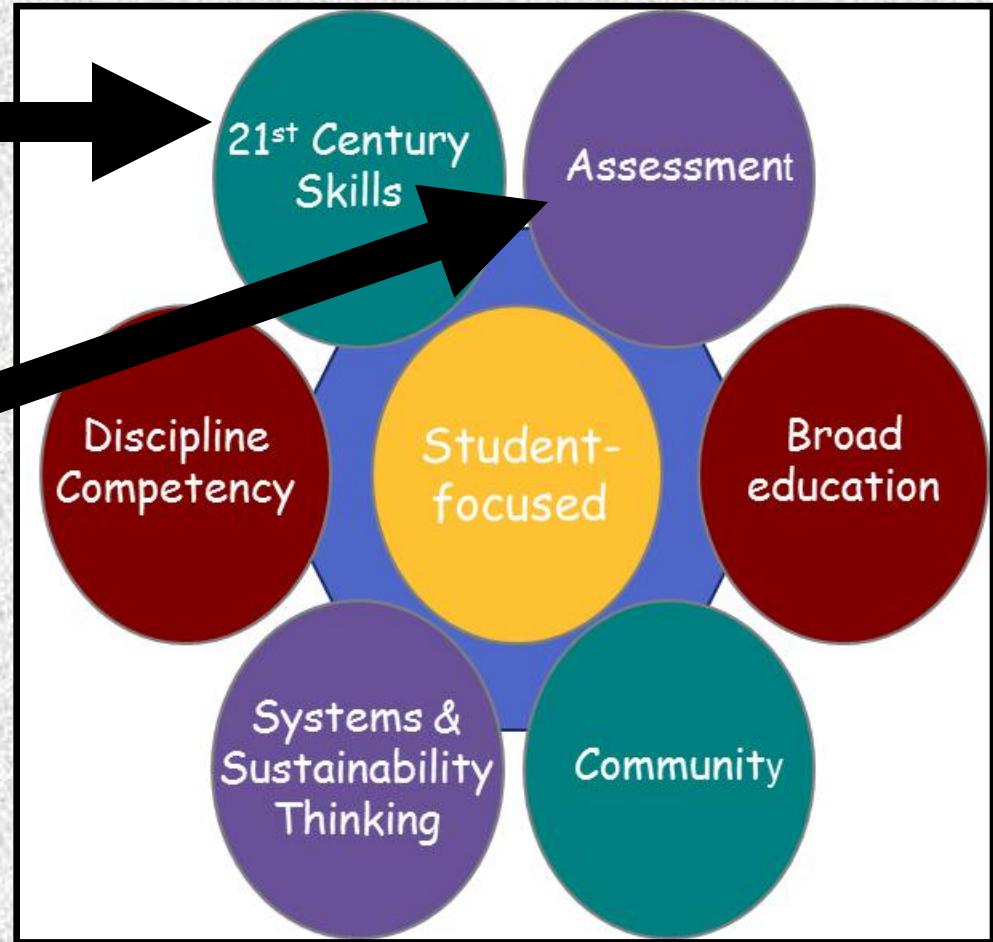
Question: Are we connected or disconnected?

How we are approaching the challenge?

UNL's Undergraduate Environmental Studies Program

The Bigger Question

How do we know if we are meeting the challenge?



Cooper 2011

Our Approach



Target Training International

PIONEERING THE SCIENCE OF SUPERIOR PERFORMANCE SINCE 1984

**“....assessment tools to hire, retain, develop
and manage the best talent in the market.**

**Our assessments are at work
for many Fortune 500
companies in 90 countries
in 40 languages**



Partner with Business



Data Collection

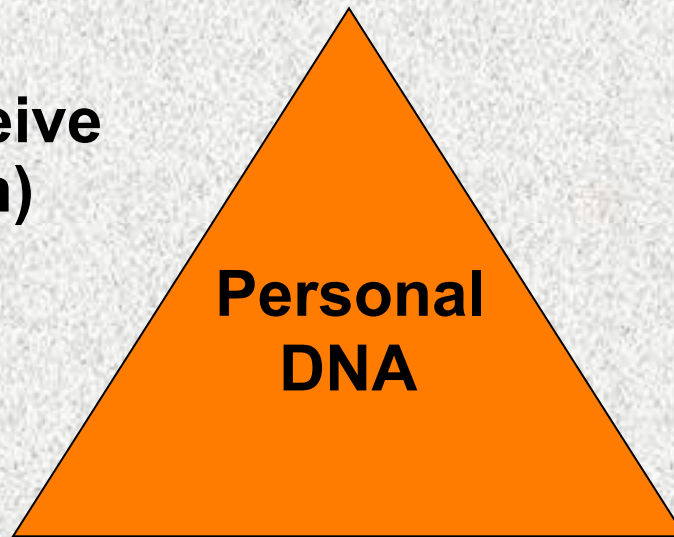
Target Training International's TriMetric™ Assessment

Dispositional Attributes

How
(Give and Receive
Information)

Behavior

DISC



Why
(Time & Energy)

Attitudes

Motivational

Drivers

What

Personal Competencies

(23 or 25)

DNA INDEX



Workforce Context

Competencies

- are a way of talking about what helps people get results in their jobs.
- refer to skills or knowledge that lead to superior performance.
- are not "fixed"—they can usually be developed with effort and support.

Modified from: http://www.carltonglobal.com/samplelesson_HR.pdf



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Our Challenge



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Competency Domains	Skills
Cognitive	Planning and Organizing Problem Solving Ability Decision Making Conceptual Thinking Creativity Futuristic Thinking
Intrapersonal	Continuous Learning Goal Achievement Resiliency Self- Management Flexibility Personal Accountability
Interpersonal	Employee Development/Coaching Presenting Diplomacy and Tact Understanding and Evaluating Others Customer Focus Interpersonal Skills Leadership Teamwork Conflict Management Empathy Persuasion Written Communication Negotiation

Data Set and Analysis

- **Pre- and Post-program Approach**
- **170 Students (includes 129 matched pairs)**
- **2009 to 2015**
- **Multilevel Modeling Framework to Account for Dependence (Generalized ANOVA)**

Personal Competencies and Skills (What?)

PERSONAL SKILLS RANKING	
1	Continuous Learning
2	Employee Development/Coaching
3	Goal Achievement
4	Planning & Organizing
5	Diplomacy & Tact
6	Presenting
7	Problem Solving Ability
8	Resiliency
9	Self-Management
10	Personal Accountability
11	Decision Making
12	Conflict Management
13	Empathy
14	Flexibility
15	Conceptual Thinking
16	Customer Focus
17	Interpersonal Skills
18	Leadership
19	Teamwork
20	Persuasion
21	Written Communication
22	Creativity
23	Futuristic Thinking
24	Understanding & Evaluating Others
25	Negotiation

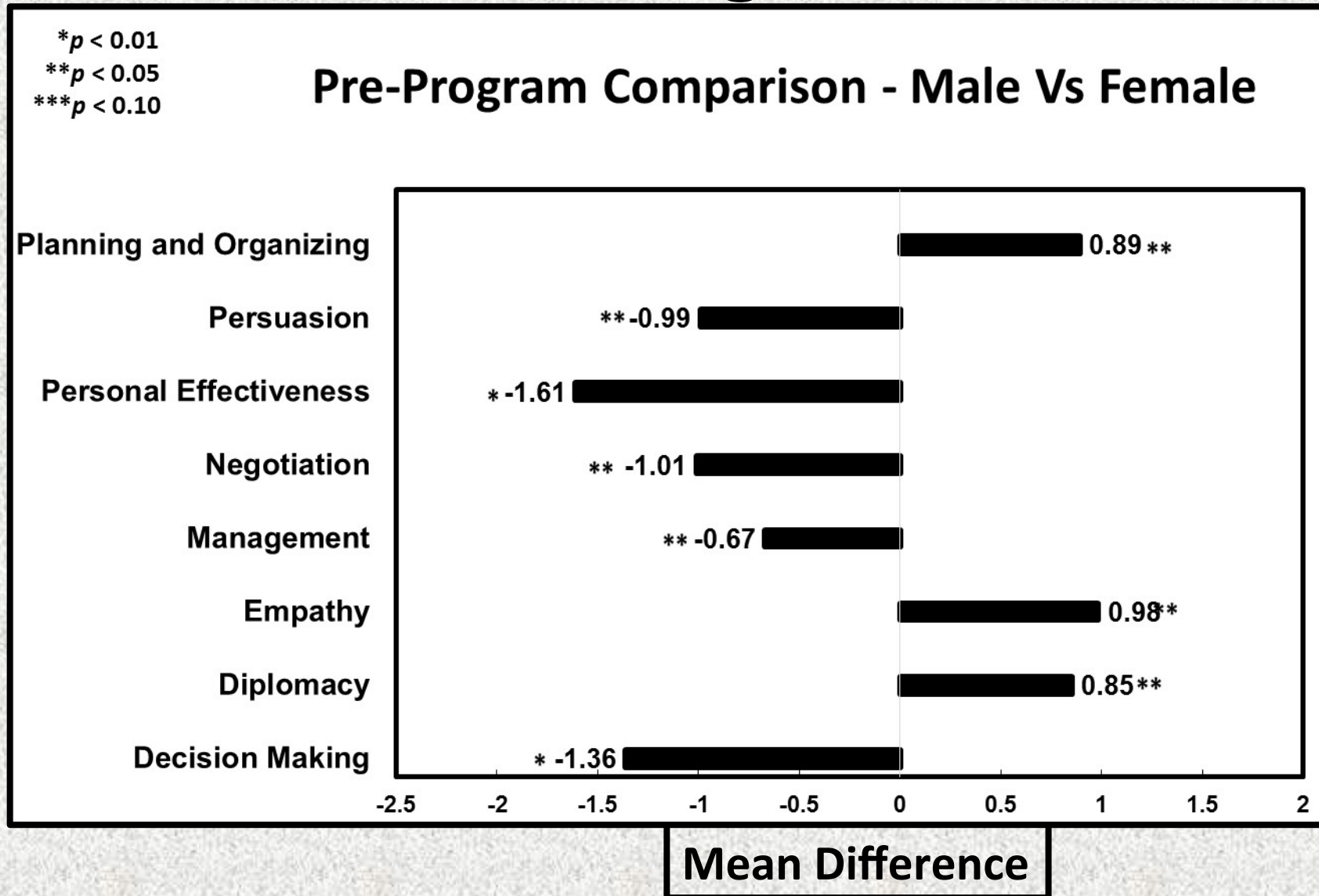
Note: Don't be concerned if you have not developed all 25 personal skills. Research has proven that individuals seldom develop all 25. Development of the most important personal skills needed for your personal and professional life is what is critical.

Well Developed Developed Moderately Developed Needs Development

- **Experience**
- **Context**
- **Self-Report**
 - Perception of others
 - Self-perception
 - Self-efficacy

Dave's Data

Data Set 1: Pre-Program Differences

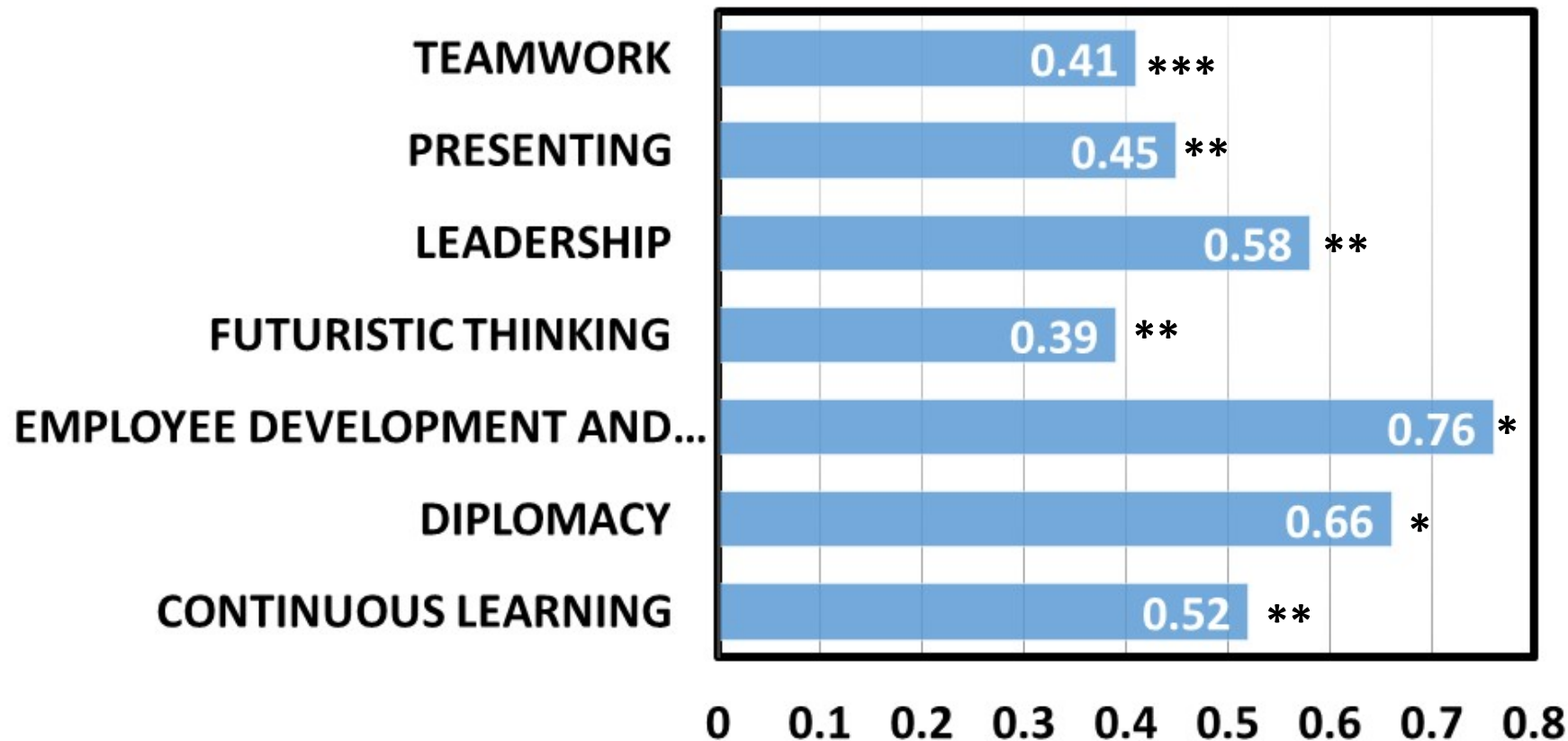


Data Set 2: Pre- and Post Change

* $p < 0.01$
** $p < 0.05$
*** $p < 0.10$

Pre- to Post-Program Changes

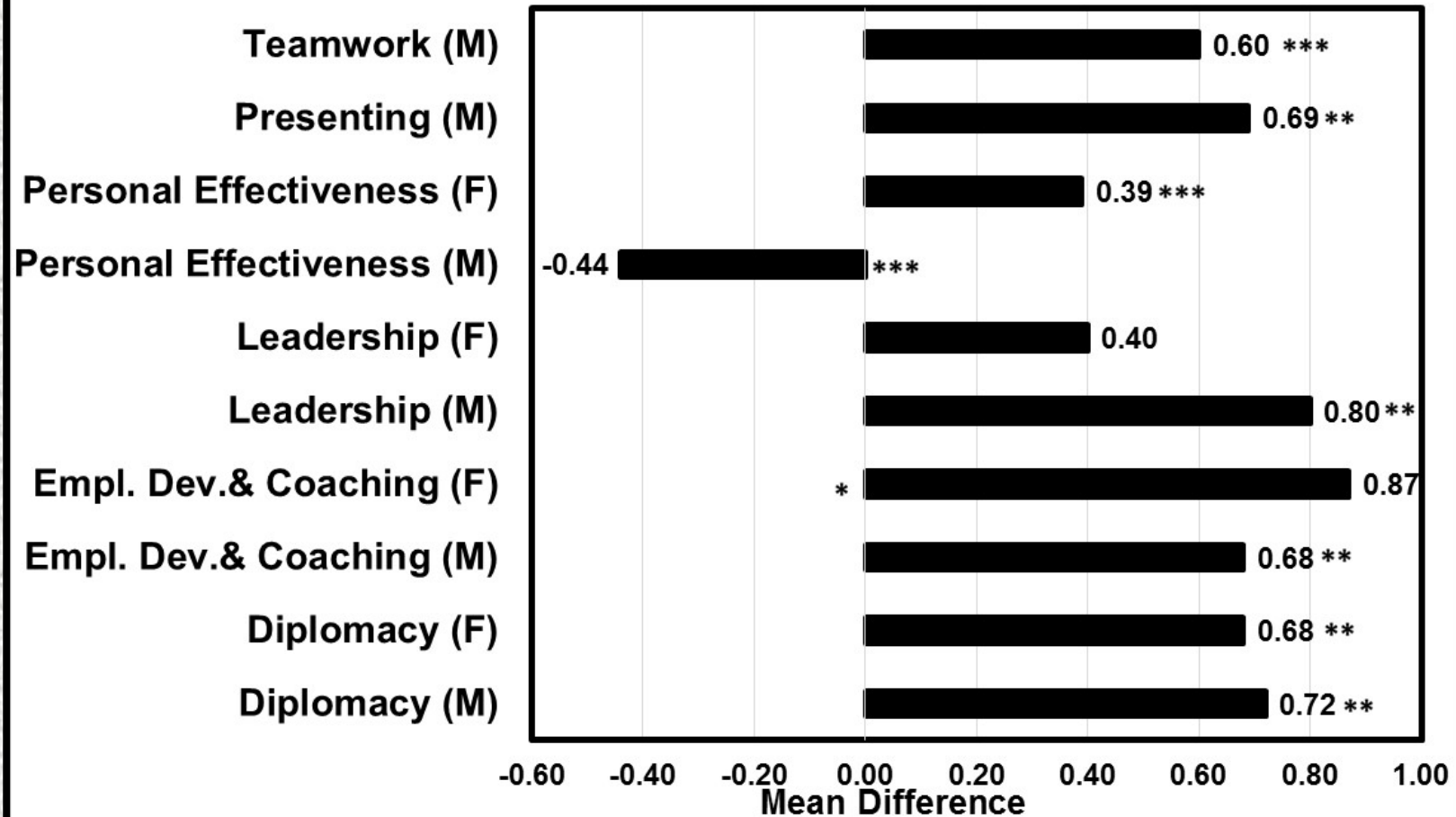
(Scale 0 to 10)



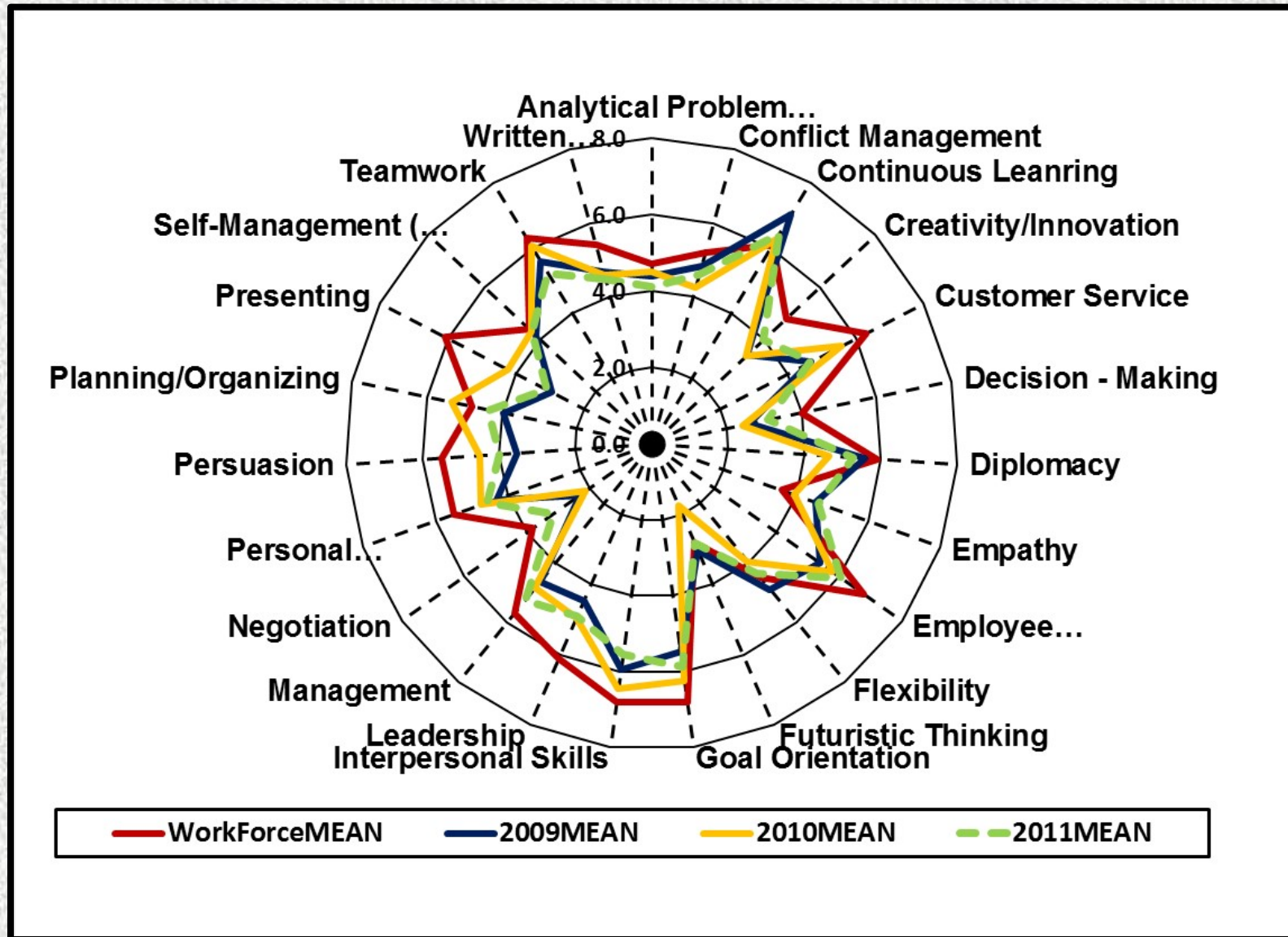
Data Set 3: Gender Differences

* $p < 0.01$
 ** $p < 0.05$
 *** $p < 0.10$

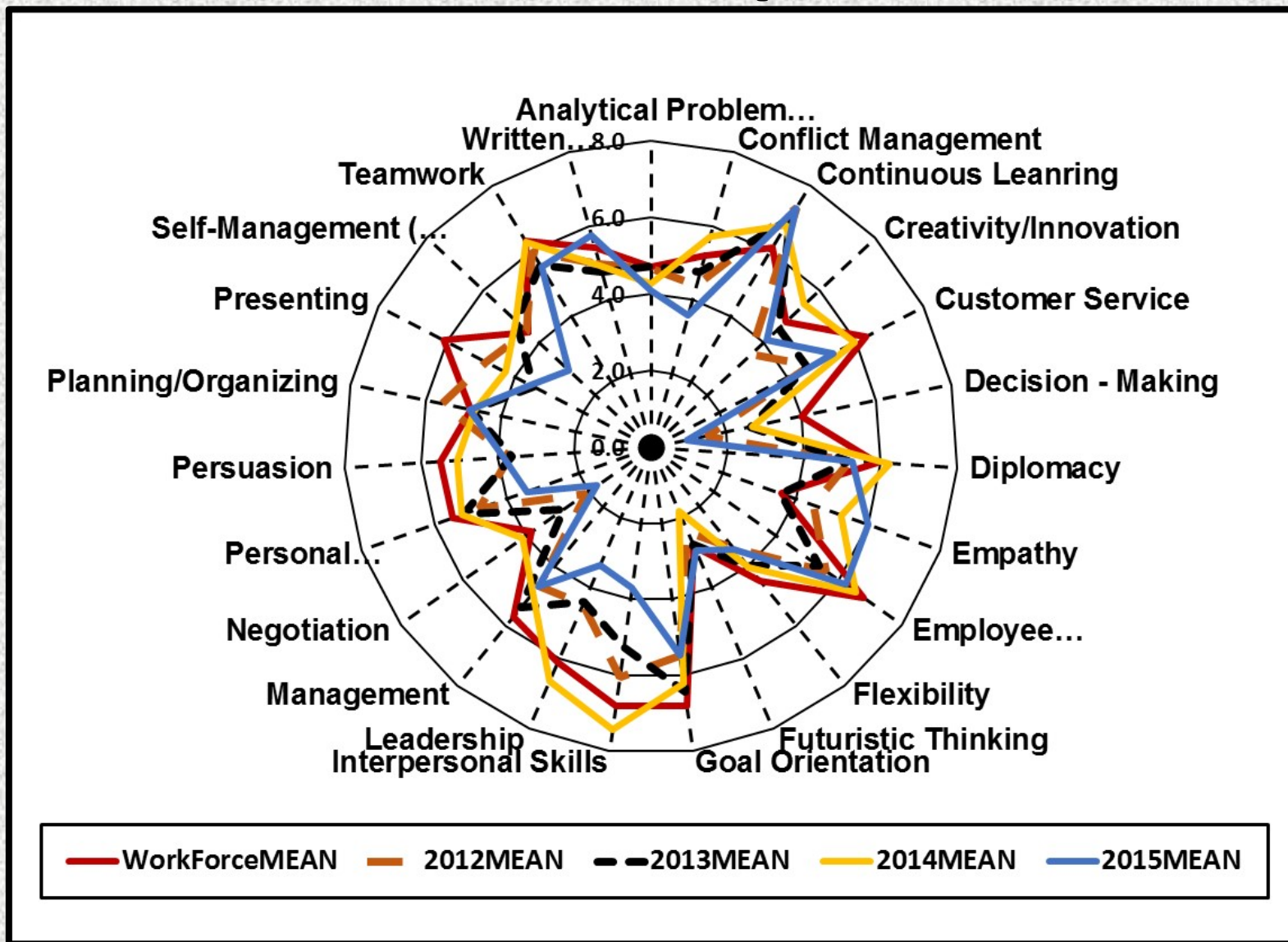
Pre- to Post-Program Changes - Gender (Scale 0 to 10)



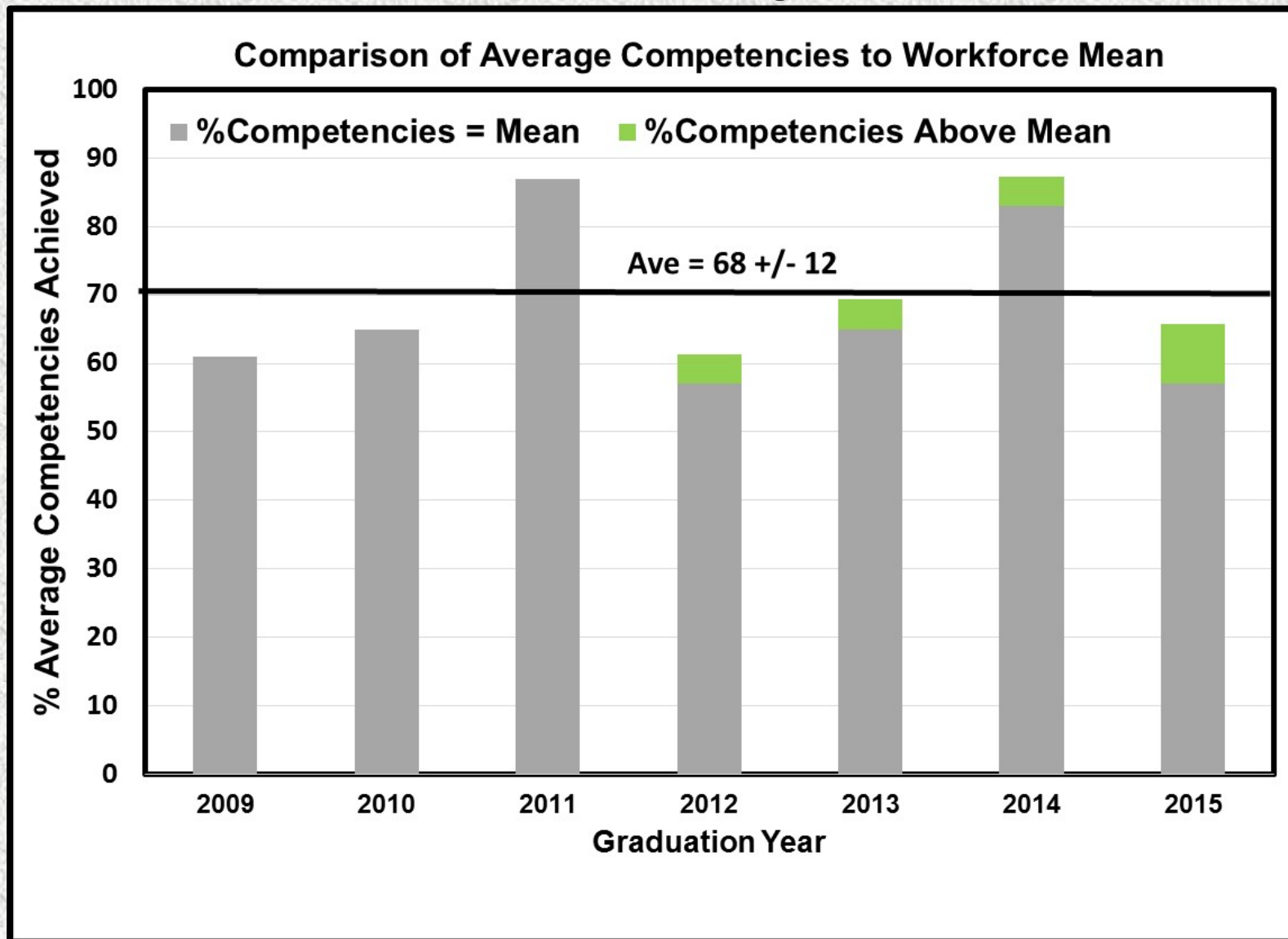
Data Set 4: Comparison to



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Summary

- **Business-related instruments provide useful assessment information about 21st century skill development**
- **Gender differences in perceived ability pre-program and changes from pre- to post program**
- **Collective Pre- to Post- Program Improvement - Continuous Learning; Diplomacy, Employee Development and Coaching; Futuristic Thinking; Leadership; Presenting; and Teamwork**

A **Big** Question for Higher Education

**To what extent do we help our
students develop competence for
professional practice in the 21st
Century?**



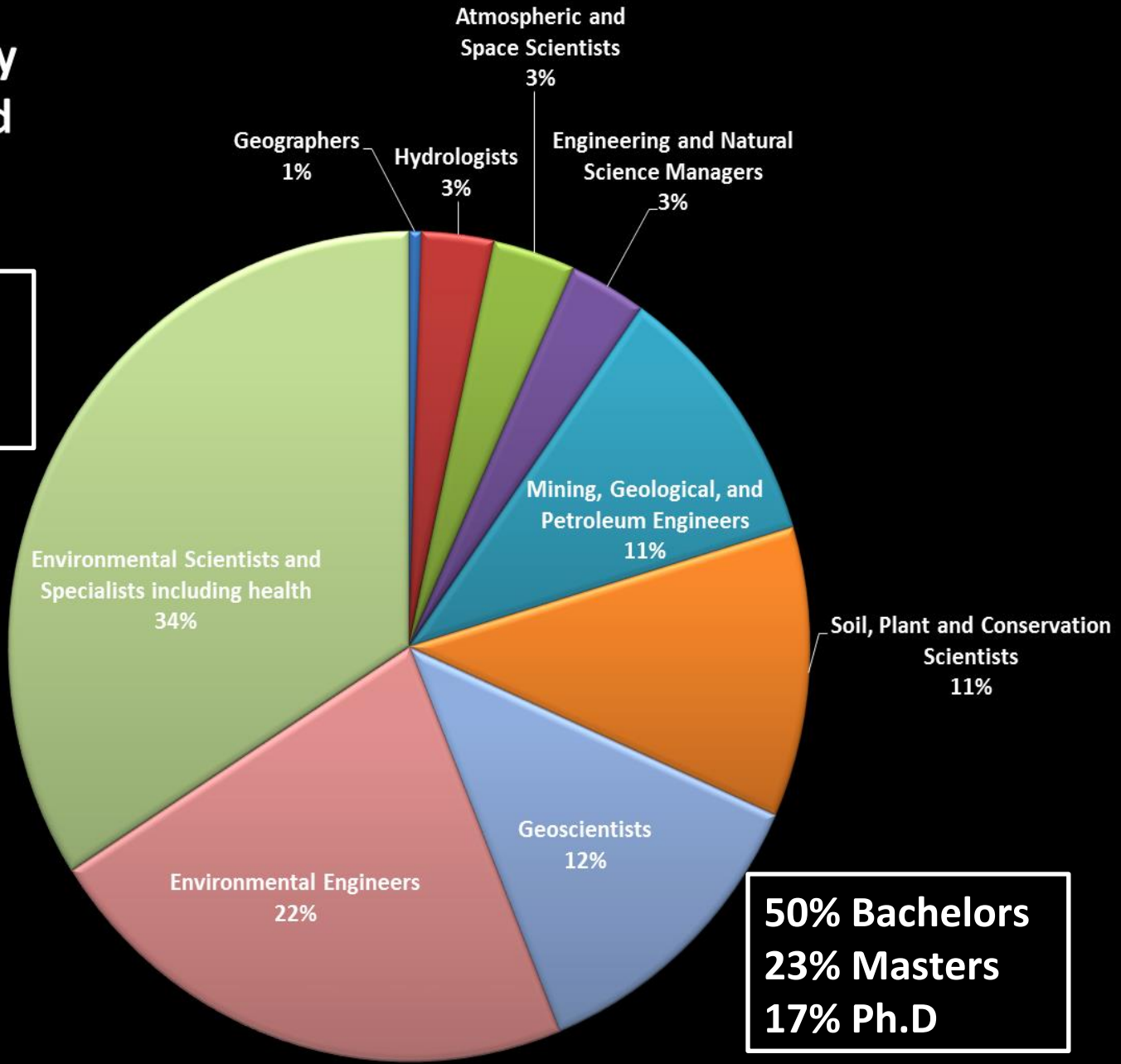
Questions



Geoscientists by Occupation and Industry

**70% Bachelors
26% Masters
3% Ph.D**

**n = 322,683 jobs
2018 projected**



**50% Bachelors
23% Masters
17% Ph.D**

Data: U.S. Bureau of Labor Statistics

The Bigger Question

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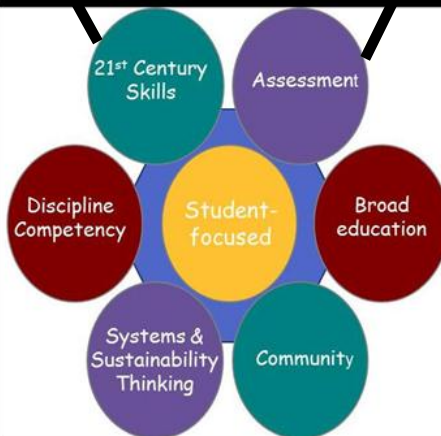
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- **Collective Pre- to Post- Program Improvement - Continuous Learning; Diplomacy, Employee Development and Coaching; Futuristic Thinking; Leadership; Presenting; and Teamwork**
- **On average ENVR Students meet or exceed 70% of current mean workforce skill sets.**