

**SOFT SKILLS,
HARD SCIENCE:
A PROGRAM TO IMPROVE
JOB PLACEMENT OF STEM
GRADUATES WITH
DISABILITIES**

LAURA MCCULLOUGH

KATHLEEN DEERY

MICHAEL LAWLER

UNIVERSITY OF WISCONSIN-STOUT

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MAY 2013 WOMEN & SCIENCE CONFERENCE

WHY FOCUS ON SOFT SKILLS?

- WHAT COMES TO MIND WHEN YOU THINK OF PEOPLE IN STEM FIELDS?
- WHAT STEREOTYPES EXIST OF PEOPLE IN STEM?

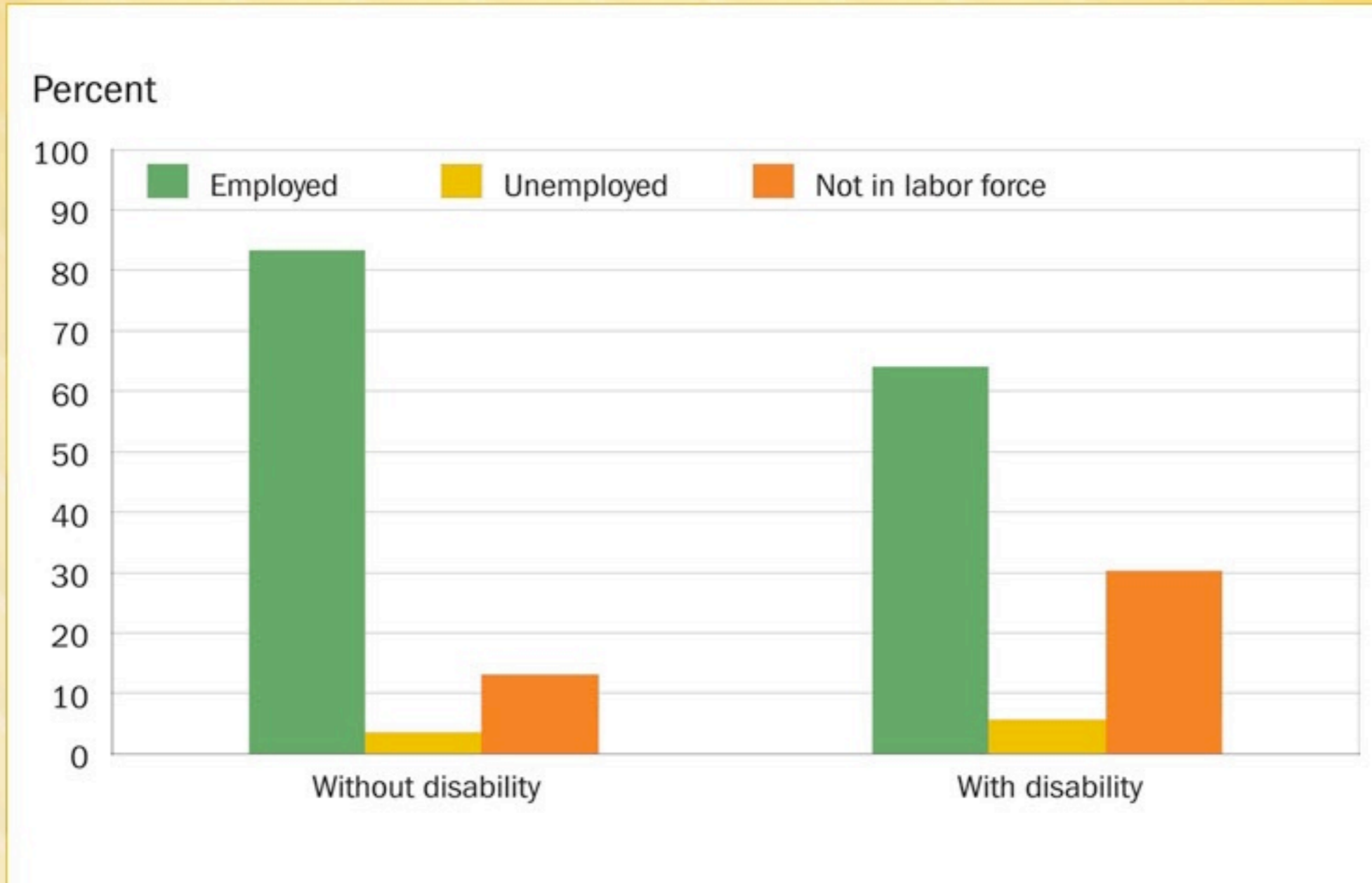
PEOPLE WITH DISABILITIES IN STEM

- **WHAT COMES TO MIND WHEN YOU THINK OF PEOPLE WITH DISABILITIES IN STEM FIELDS?**
- **WHAT STEREOTYPES EXIST?**

EMPLOYMENT GAP

- **STEM MAJORS WITH DISABILITIES ARE LESS LIKELY TO GAIN EMPLOYMENT THAN THEIR COUNTERPARTS WITHOUT DISABILITIES**
- **2013 NSF DATA SHOWS 6.5% OF EMPLOYED SCIENTISTS & ENGINEERS HAVE A DISABILITY**

Employment status of scientists and engineers, by disability status: 2010



STEM WANTS YOU!

- **NEED FOR STEM WORKERS STRONG IN U.S.**
- **GOOD PLACES TO DRAW FROM INCLUDE UNDERREPRESENTED POPULATIONS (WOMEN, MINORITIES, AND PERSONS WITH DISABILITIES)**

HOW TO HELP?

- **WHAT FACTORS CAUSE STUDENTS WITH DISABILITIES TO BE LESS LIKELY TO GAIN EMPLOYMENT AFTER GRADUATION?**

SURVEY TIME!

- SURVEY OF 40 STUDENTS & RECENT GRADS WITH DISABILITIES, 680 EMPLOYERS WHO HAVE HIRED IN STEM AREAS
- STUDENTS RATED THEMSELVES ON VARIOUS SKILLS, EMPLOYERS RATED RECENT GRADS ON SAME SKILLS
- PERCEPTION » REALITY

WHAT ARE SOFT SKILLS?

- COME UP WITH AT LEAST 5 THINGS YOU WOULD CONSIDER “SOFT SKILLS”

SURVEY RESULTS

RESULTS: MODERATELY WELL-PREPARED

	STUDENT PERCEPTION	EMPLOYER PERCEPTION	% DIFFERENCE
OVERALL PREPAREDNESS	71	51	20
TECHNICAL KNOWLEDGE	98	53	45
JOB SEEKING SKILLS	75	46	29
APPLICATIONS/RESUME	94	53	41
INTERVIEWING SKILLS	79	72	7
ORAL COMMUNICATION SKILLS	86	50	36
READING & WRITING SKILLS	87	52	35
ANALYTICAL SKILLS	93	66	27
ORGANIZATIONAL SKILLS	93	66	27
SOCIAL SKILLS	90	69	21
INTERPERSONAL EFFECTIVENESS	90	73	17

FOCUS ON SOFT SKILLS

- **NSF GRANT TO DO 3-PART INTERVENTION WITH STEM SENIORS WITH DISABILITIES, FOCUSED ON TEACHING SOFT SKILLS**
- **SOFT SKILLS CURRICULUM**
- **INDUSTRY MENTORS**
- **WORK-BASED LEARNING**

THE STUDENTS

- 15 STEM STUDENTS AT SENIOR RANK, WITH A DISABILITY, AT UW-STOUT AND UW-RF
- DISABILITY DEFINED AS BROADLY AS POSSIBLE
- WHAT DO YOU THINK OF WHEN YOU THINK OF DISABILITIES?

RANGE OF DISABILITIES

- 8 WITH LEARNING DISABILITY
- 4 WITH PHYSICAL DISABILITY
- 3 WITH ADHD
- 3 WITH ANXIETY ISSUES
- 2 WITH AUTISM SPECTRUM DISORDER
- 1 WITH SPEECH DISABILITY

RANGE OF MAJORS

- APPAREL DESIGN & DEVELOPMENT
- APPLIED MATH/COMPUTER SCIENCE
- BIOLOGY
 - BIOCHEMISTRY
 - BIOTECHNOLOGY
- COGNITIVE SCIENCE
- CONSTRUCTION MANAGEMENT
- ENGINEERING TECHNOLOGY
- FOOD SCIENCE
- GAME DESIGN
- GRAPHIC COMMUNICATIONS MANAGEMENT
- INFORMATION TECHNOLOGY MANAGEMENT
- MATHEMATICS/SECONDARY EDUCATION
- PHYSICS/MATHEMATICS

OUR PROGRAM

- STUDENTS RECRUITED FROM SPRING TO FALL
- BEGINNING IN FALL, STUDENTS PARTICIPATE FOR 1 YEAR IN THE PROGRAM
- PARTICIPANTS WHO COMPLETE THE PROGRAM GET AN IPAD TO KEEP
- PARTICIPANTS USE IPAD DURING THE YEAR
- THREE STAGES IN THE PROGRAM:
 - CURRICULAR INTERVENTION
 - MENTORING
 - WORK-BASED LEARNING

FOUR F2F MEETINGS

- MEETING 1: INTRODUCTION
- MEETING 2: DISCUSS WORK & PERSONALITY
- MEETING 3: DISCUSS SOCIAL MEDIA
- MEETING 4: MEET WITH INDUSTRY MENTORS

FACEBOOK GROUP

- **IPADS FOR EVERY STUDENT**
- **DROPBOX, LINKEDIN, FACEBOOK**
- **ADD TO PRIVATE FACEBOOK GROUP (NEED TO PROTECT IDENTITIES OF STUDENT PARTICIPANTS)**
- **MUCH COMMUNICATION VIA FACEBOOK**
- **EASIER ACROSS TWO CAMPUSES**
- **STUDENTS COMFORTABLE WITH FB**

CURRICULAR INTERVENTION

- **MODULE 1: PERSONAL AWARENESS (ONLINE)**
- **MODULE 2: WORK & PERSONALITY (HYBRID)**
- **MODULE 3: CRITICAL THINKING (ONLINE)**
- **MODULE 4: USE OF SOCIAL MEDIA (HYBRID)**
- **MODULE 5: JOB SEEKING SKILLS (ONLINE)**

Social Networking



INDUSTRY MENTORING

- **MENTORS FROM VARIOUS STEM FIELDS**
- **WORK WITH 1 OR 2 STUDENTS**
- **FOCUS ON SOFT SKILLS, PARTICULAR TO STUDENT'S NEEDS**
- **6-12 MONTH DURATION, HOPEFULLY THROUGH STUDENT'S FIRST MONTHS IN A JOB**

WORK-BASED LEARNING

- 40 HOUR INTERNSHIP
- STEM FOCUSED OR OTHER
- SITE SUPERVISOR CRITIQUES STUDENT'S SOFT SKILLS USING RUBRIC DEVELOPED BY NSF TEAM

STATUS REPORT

- CURRENTLY IN LAST OF 5 CURRICULAR MODULES
- MENTORING GOING WELL FOR ALL BUT 2 STUDENTS (HEALTH ISSUES, STUDENT TEACHING)
- PICKING JOB SITES FOR WORK-BASED LEARNING
- SEVERAL STUDENTS GRADUATING, AROUND 10 WILL BE 5TH YEAR SENIORS

STATUS REPORT

- **NEED TO FINALIZE WORK-BASED LEARNING**
- **START PLANNING FOR NEXT YEAR'S COHORT**
- **START ASSESSING STUDENTS AND PROGRAM**

LESSONS LEARNED

- MORE TIME TO PLAN NEXT TIME!
- WORK HARDER TO RECRUIT (ADD UW-EC?)
- EXISTING COHORT VERY INTERESTED IN PROGRAM
- NEED MORE MOTIVATION FOR STUDENTS TO DO ONLINE COMPONENTS
- OVERALL WORKED VERY WELL BUT A LOT OF WORK

YOU CAN HELP TOO!

- **UW-STOUT AND UW-RF FACULTY: WE NEED STUDENTS FOR COHORT 2 (20 PARTICIPANTS AND 20 CONTROL)**
- **OTHER INSTITUTIONS: BY FALL, WEBSITE UP AND RUNNING: SEND STUDENTS WITH DISABILITIES OUR WAY!**
- **[HTTP://WWW.SOFTSKILLS-HARDSCIENCE.ORG/](http://www.softskills-hardscience.org/)**

THANK YOU!