


**Workforce Needs Assessment**  
September 15, 2010

presented by  
**Evaluate|t|e**  
EVALUATION RESOURCE CENTER  
advanced technological education

 This material is based upon work supported by the National Science Foundation under Grant No. 0802245. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

# Introductions



**Lori Wingate**  
Moderator

**Stephanie Evergreen**  
Presenter

**Ken Bartlett**  
Presenter

**Ann Beheler**  
Presenter

**Evaluate|t|e**  
EVALUATION RESOURCE CENTER  
advanced technological education

**WESTERN MICHIGAN UNIVERSITY**

**MARK VIQUESNEY**

**UNIVERSITY OF MINNESOTA**

**MARICOPA COMMUNITY COLLEGES**

**Porterville College**

**Convergence Technology Center**

**Lori**

# Agenda



Lori

Workforce needs assessment...

1. in the ATE program
2. practices among ATE grantees
3. methods
4. examples
5. data in evaluation

# Handout



Lori

Available from  
*[resources.evaluate-ate.org](http://resources.evaluate-ate.org)*

Keyword search:  
*needs*

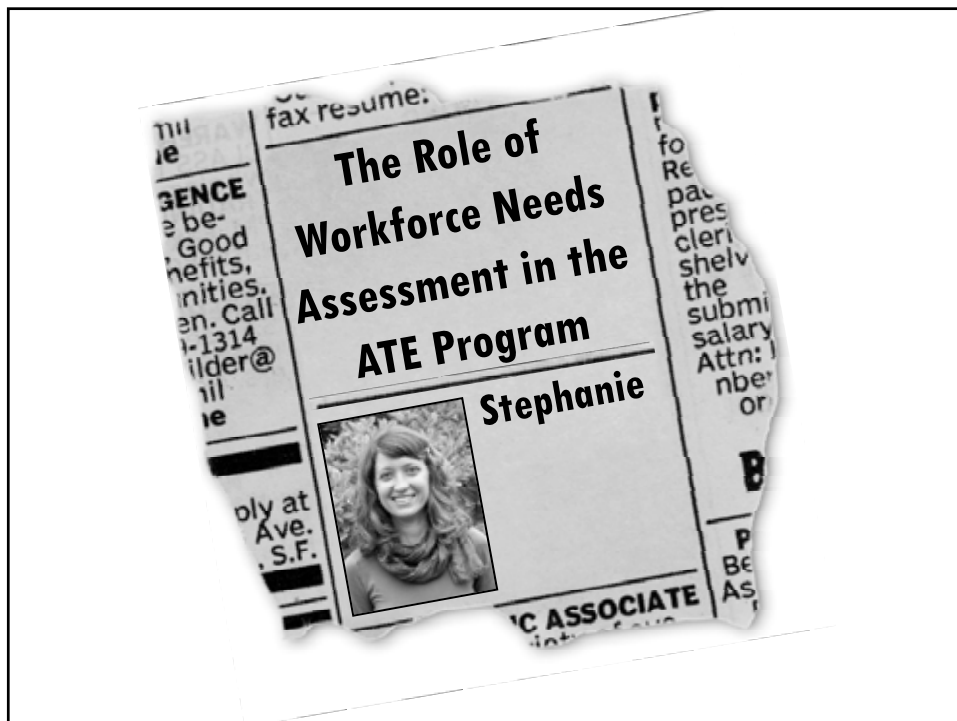


# Objectives



Lori

- ✓ Know about the state of workforce needs assessment among ATE grantees
- ✓ Be familiar with an array of needs assessment methods that have been used successfully by ATE centers
- ✓ Understand how needs assessment data can be used in evaluation
- ✓ Be inspired to learn more about workforce needs assessment and use it for project planning and evaluation



# ATE Program Solicitation



The screenshot shows the NSF ATE Program Solicitation document. Key sections include:

- Advanced Technological Education (ATE)**
- Program Information:** NSF-09-239
- Administrative Department(s):** National Science Foundation, Division of Education & Human Resources, Office of Undergraduate Education, Research and Learning in Formal and Informal Settings
- Primary Project Start Dates:** April 15, 2010; April 21, 2011; April 15, 2012
- Project Period:** October 01, 2009; October 01, 2011; October 15, 2012
- Program Description:** The ATE program is a national, multi-agency effort to support and enhance the quality of technical education and workforce development. It is a partnership of the NSF, the U.S. Department of Education, and the U.S. Department of Labor.



# ATE Broader Impact Review Criteria



Stephanie

- ✓ Has an assessment of **workforce needs** for technicians been conducted?

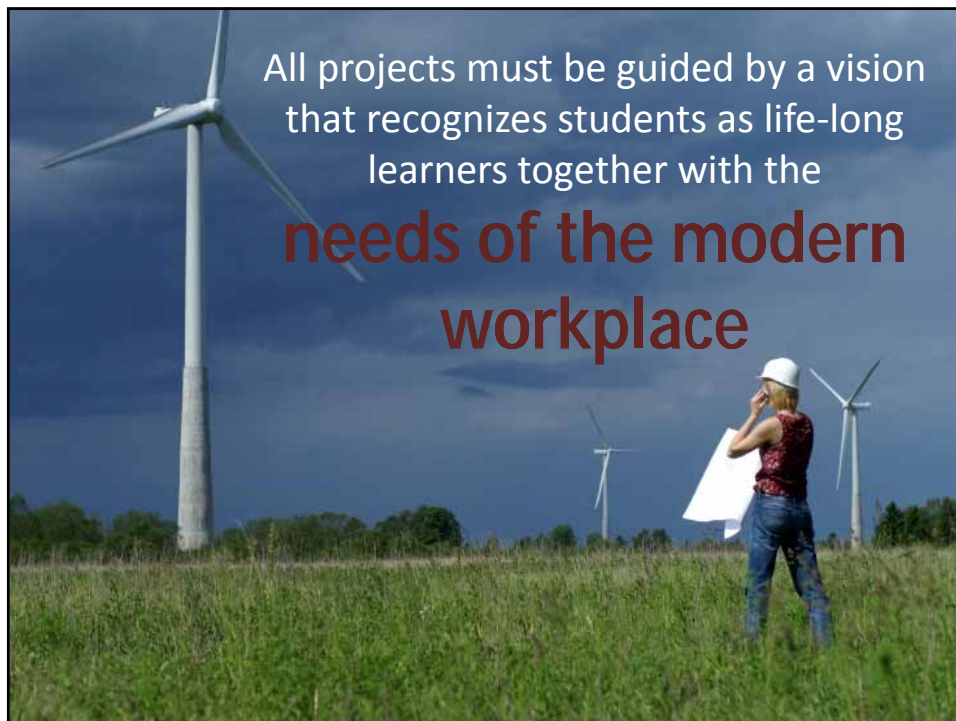


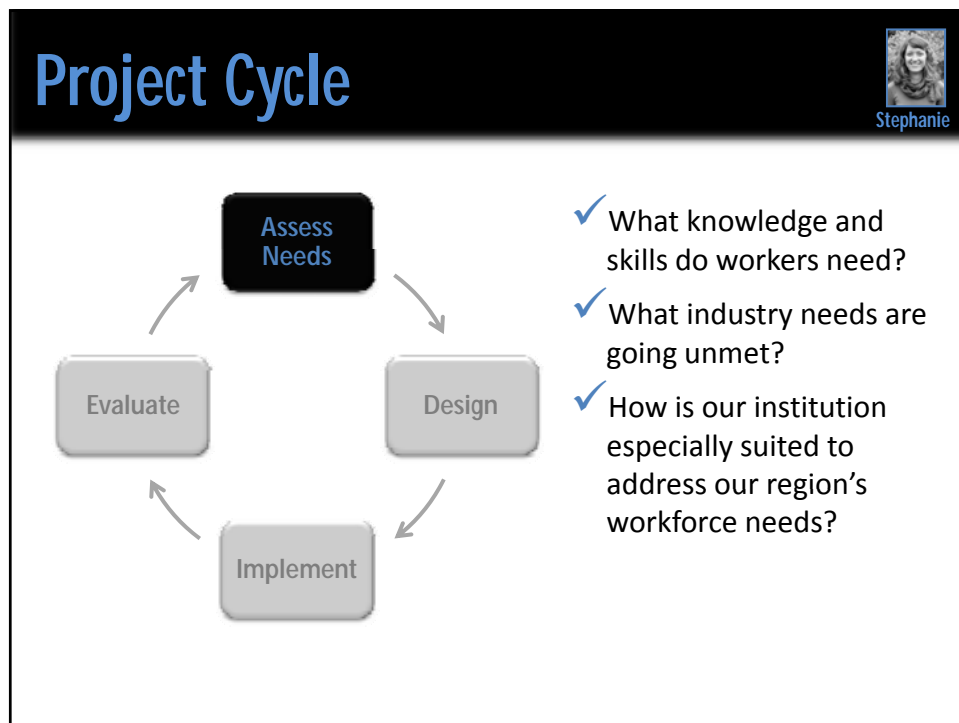
## ATE Broader Impact Review Criteria

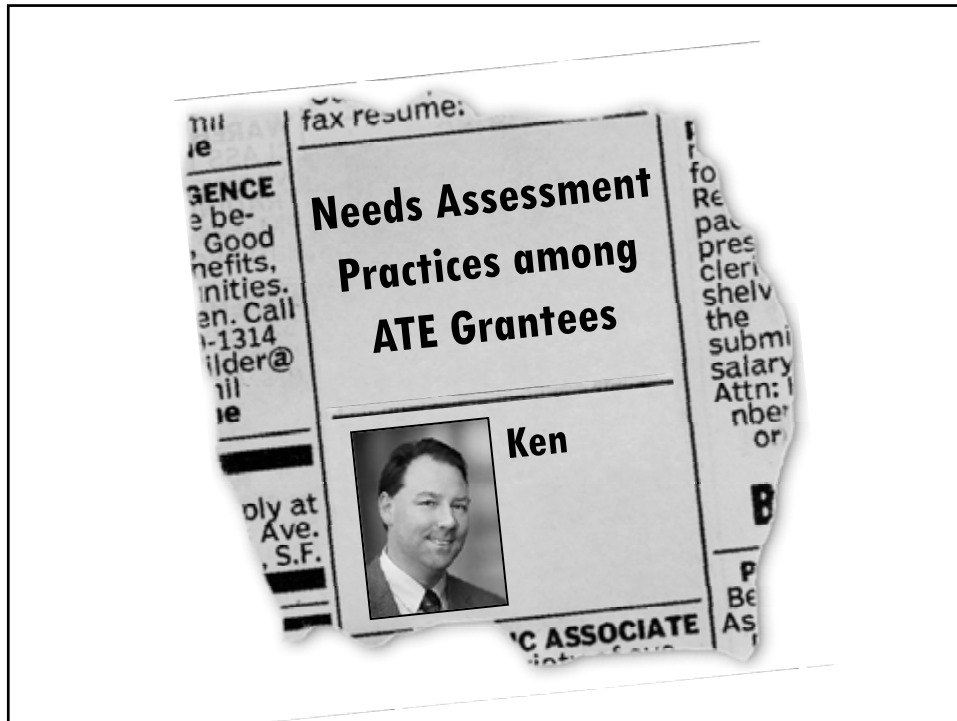


Stephanie

- ✓ Does the project work with employers to address their **current and future needs for technicians?**







## Needs Assessment Perspectives

✓ Where should we invest our resources to enhance our long-term survival?

Employers

Strategic human resource development

What do workers need to know and be able to do?

✓ Does the program address a real industry need?

Funders

Educators

✓ What skills and knowledge do new graduates lack?

Ken

## Purpose



Ken

- ✓ To investigate the issue of workforce assessment as a component of CTE programs, with the focus on ATE.

## Research Questions

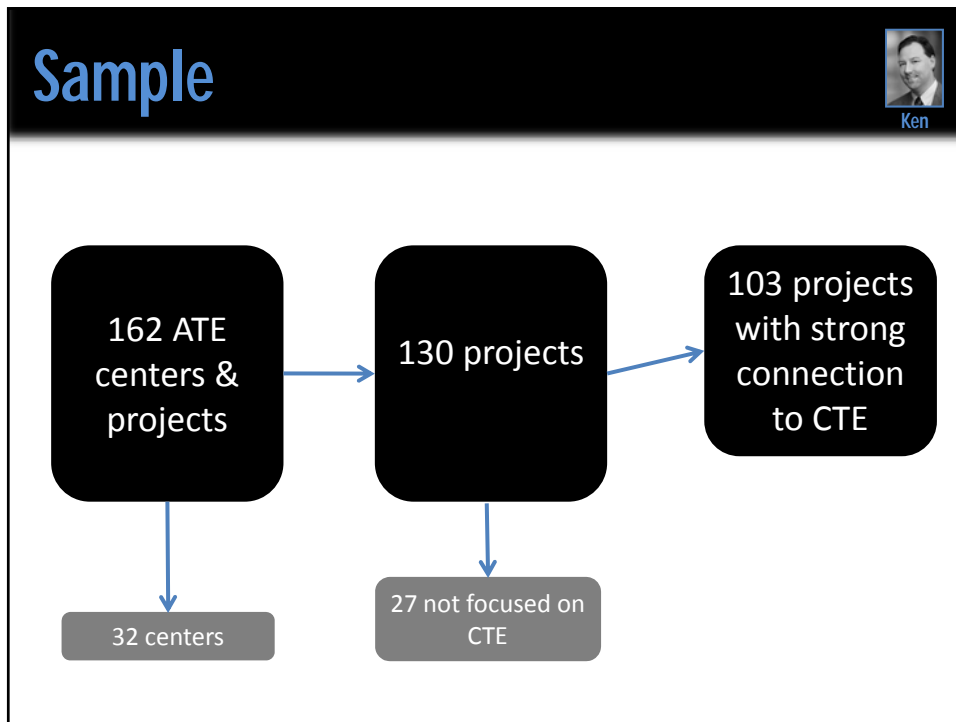


Ken

- ✓ To what **extent** is workforce needs assessment used among ATE grantees?
- ✓ What **type** of workforce needs assessments are most frequently conducted?
- ✓ What are the **outcomes** of ATE needs assessments?

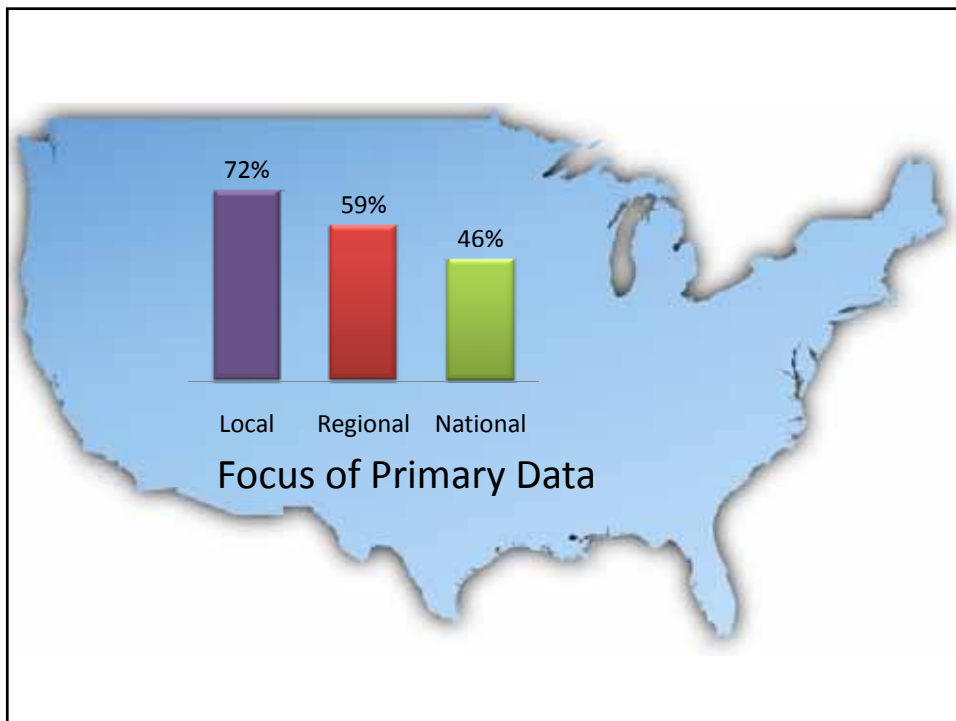
Data Source: 2008 ATE survey

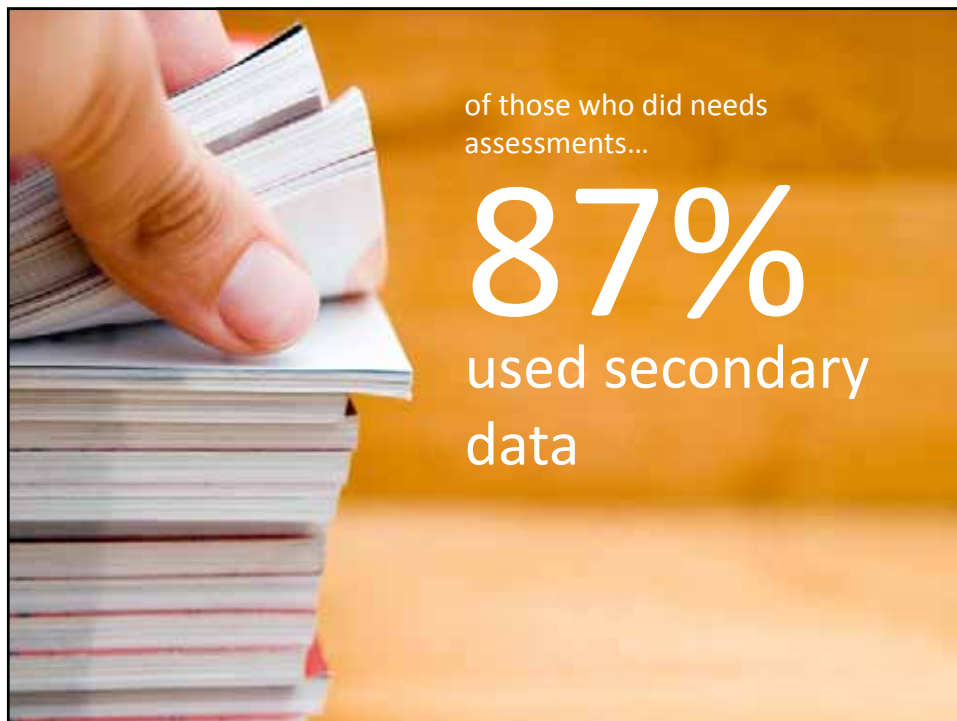




of those who did needs assessments...

**75%**  
collected primary data



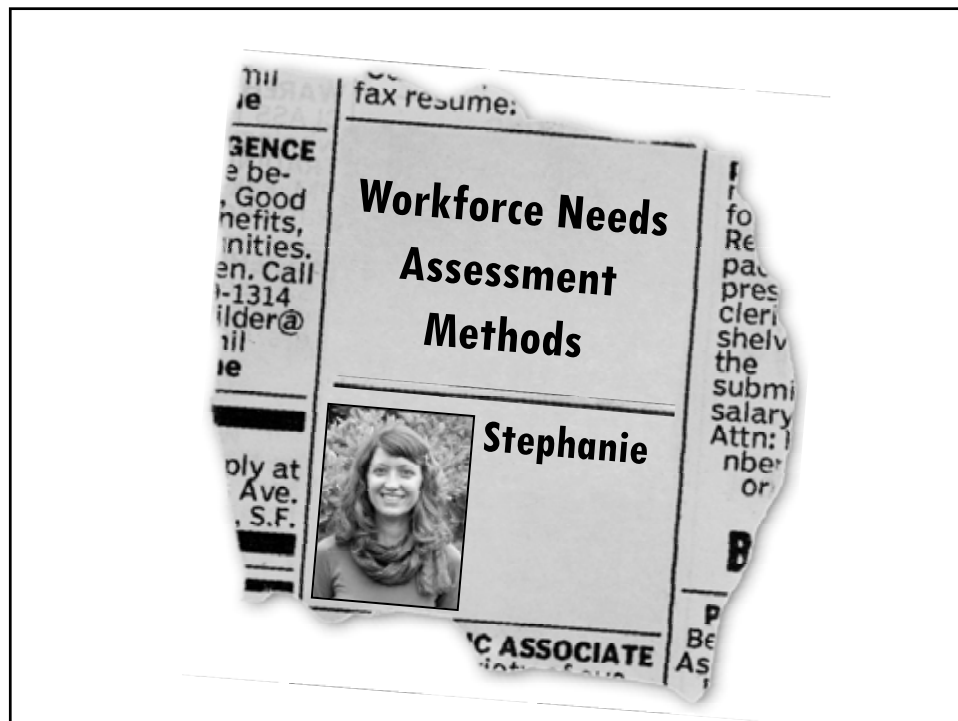


## Points to Consider



Ken

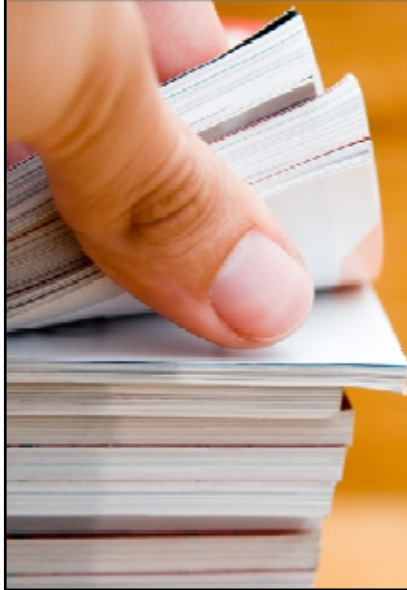
- ✓ The more information collected and considered in decision making, the greater levels of organizational effectiveness.
- ✓ Top-level managers prefer personal sources over impersonal sources.
- ✓ An increasingly mobile workforce points to a need for equal use of regional and national data.
- ✓ Mixed needs assessment methods/sources balance the strengths and weaknesses of each.



## Secondary Data



Stephanie



Bureau of Labor  
Statistics

State agencies

Industry groups

## Bureau of Labor Statistics



Stephanie



[www.bls.gov](http://www.bls.gov)

### See Employment Projections

- ✓ “Which occupations seem to be growing?”
- ✓ Updated every other year
- ✓ Drill down to metro area
- ✓ Doesn't show nonindustry employment

## State Websites



Stephanie



### See Economic Development

- ✓ “Which occupations will have the largest demand?”
- ✓ “What about just among the occupations needing vocational training?”
- ✓ Through 2018
- ✓ Varies greatly by state

## O\*NET Resource Center



Stephanie



[www.onetcenter.org](http://www.onetcenter.org)

### See For Economic Developers

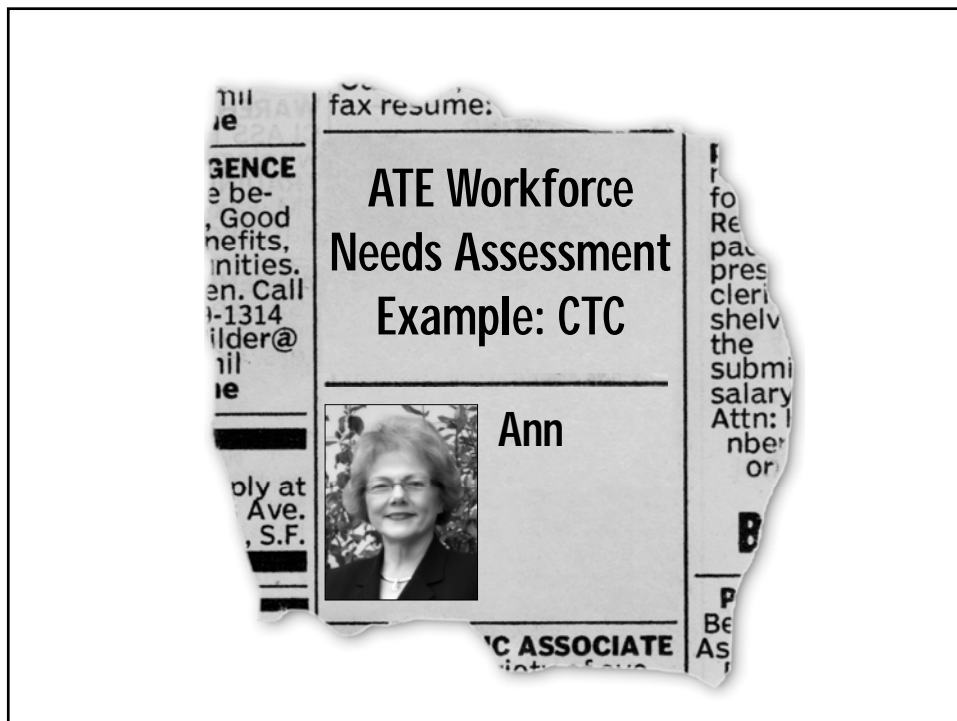
- ✓ “What skills and abilities do certain occupations require?”
- ✓ Surveys available for modification
- ✓ Updated annually

# Primary Data



Stephanie

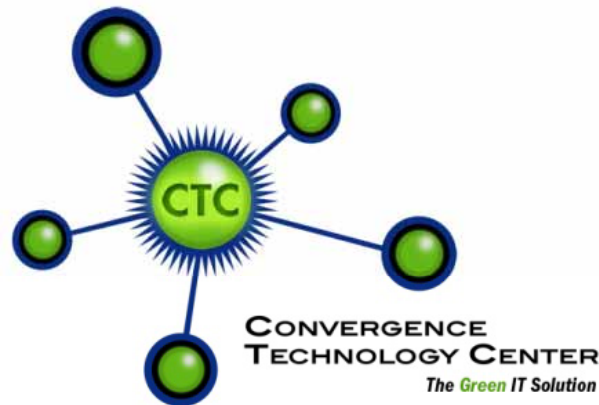
- Interviews
- Focus groups
- Surveys
- Observations
- DACUM



## CTC Business Connection



Ann



## Identifying the Problem



Ann



- ✓ 70,000 - 100,000 IT and telecommunications workers laid off in North Texas region in early 2000s
- ✓ Increasing reliance on information and communications technologies
- ✓ Needed to prepare for the next wave of information and communications technology industry needs



## Identifying Need



Ann

- ✓ Does regional business and industry expect to hire workers in the region now and in the future?
- ✓ If so, what is the job description?
- ✓ How many of each job does industry expect to hire?
- ✓ What skills does each job demand?
- ✓ What combination of education and experience does business expect in their future employees?



## CTC is Industry-Driven



Ann

- ✓ Focus group was the seed
- ✓ Business Advisory Council (BAC) had 40-50 members initially—now close to 100
- ✓ Have met quarterly since 2002
- ✓ BAC “owns” program

## Business Advisory Council




Ann



- ✓ Identify trends for continuous adjustment in curricular offerings
- ✓ Create and update job skills analysis annually
- ✓ Validate course content and degree/certificate plans
- ✓ Update labor market demand in partnership with Interlink
- ✓ Support faculty and students

## DACUM



Ann

**DACUM=**  
**Developing A CurriculUM**

## DACUM



Ann

### Occupational skill profile used for

- ✓ instructional program planning
- ✓ training needs assessment
- ✓ curriculum development
- ✓ competency test development



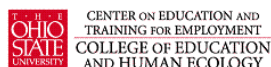
[www.dacumohiostate.com](http://www.dacumohiostate.com)

## DACUM Process



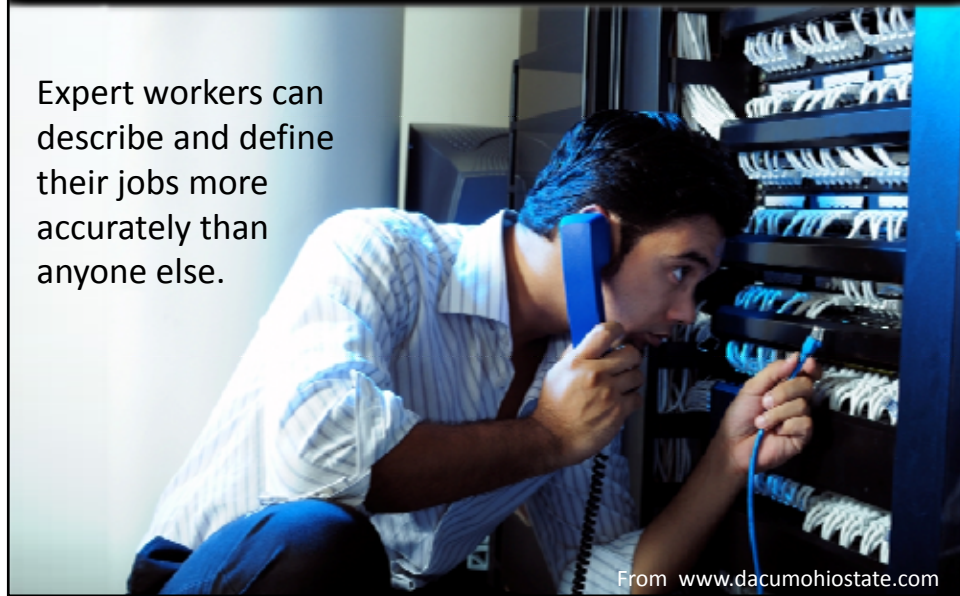
Ann

- ✓ Panel of top-performing workers describe their occupation
- ✓ Facilitator works with panel to create a chart of duties and tasks
- ✓ Panel defines knowledge and skills, worker behaviors, and future trends



[www.dacumohiostate.com](http://www.dacumohiostate.com)

## DACUM Philosophy




Expert workers can describe and define their jobs more accurately than anyone else.

From [www.dacumohiostate.com](http://www.dacumohiostate.com)

Ann



## DACUM Philosophy



An effective way to define a job is to precisely describe the tasks that expert workers perform.

Ann

## DACUM Philosophy



Ann

All tasks, in order to be performed correctly, require certain knowledge, skills, tools, and worker behaviors.


## Modified DACUM



Ann

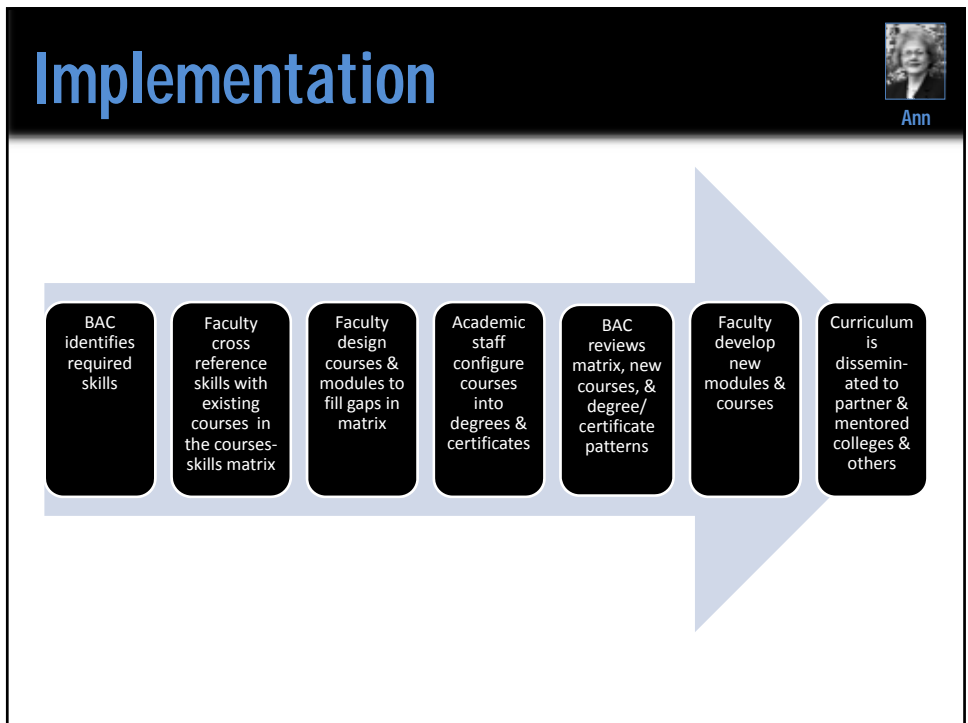
- ✓ Academic staff generate list of skills using skills standards or input from business focus group
- ✓ Business and industry partners add or subtract from list
- ✓ Skills list is updated annually

## Courses-Skills Matrix



Ann

SKILLS	COURSES				
	ITCC1302	ITCC1306	ITCC1342	ITCC1346	CPMT1405
<i>Operating System</i>					
Unix/Linux					E
Windows	E	E	E	E	T
MVS					
Wireless	E		E		T
<i>Operating System Maintenance</i>					
Configuration modification	E	T	E	E	T
System administration		E			E



## “Win-Win” for Business



Ann

### Business representatives

- ✓ Know that their input has been heard and acted upon
- ✓ Have assurance they can hire our students and know they have the necessary knowledge, skills, and abilities
- ✓ Are more willing to help with internships/externships and other needs

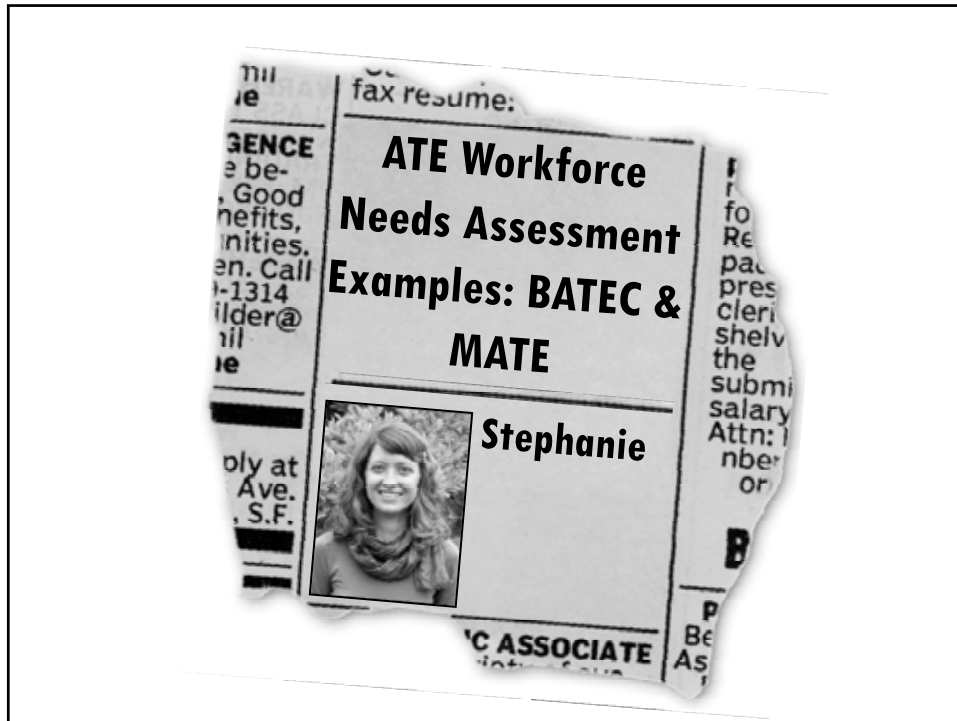
## “Win-Win” for Students



Ann

They  
get  
hired!





## IT Workforce Skills Study



Stephanie



Boston Area Advanced  
Technological Education  
Connections

- ✓ Deborah Boisvert, PI
- ✓ Study led by Peter Saflund/The Saflund Institute



## Research Questions



Stephanie

- ✓ Employer satisfaction
- ✓ Technical and employability skill importance
- ✓ Critical needs
- ✓ Future workplace

## Methods




Stephanie

### Focus group

Hiring managers or  
Strategic planning or  
Workforce development



## Methods




Stephanie

### Phone Survey

Identified by word of mouth

- Operations 10%
- Hiring managers 10%
- Technical managers 50%
- Technical workers 20%
- Strategists & architects 10%



## Methods



Stephanie

### Targeted Industries

- Financial Services
- Insurance Services
- Healthcare
- Retail
- Manufacturing
- Telephone
- Software Development



## Interview Questions



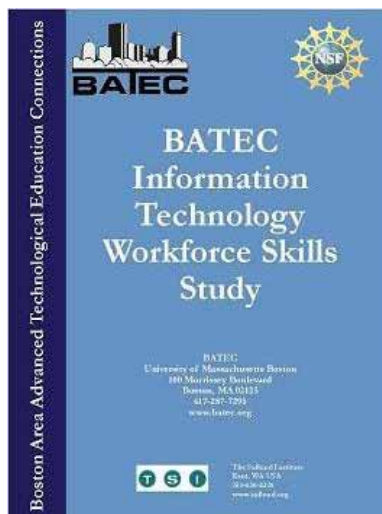
Stephanie

- ✓ Perception of community college
- ✓ Importance of skills
- ✓ Most pressing need
- ✓ Forecast of workforce demands
- ✓ Changing environment

## For More Information...



Stephanie



## Certification for Oceanographic Professionals: A Needs Assessment Study



Stephanie



# MATE

MARINE ADVANCED TECHNOLOGY EDUCATION CENTER

Deidre Sullivan, PI



Study supported by the National Oceanic and  
Atmospheric Administration

## Modified DACUM




Stephanie

- ✓ Business & industry experts
- ✓ 1½ -2 days
- ✓ Run in conjunction with a conference
- ✓ Sent survey in advance to DACUM participants



# Survey



Stephanie



- ✓ Professional societies
- ✓ Other faculty/staff
- ✓ Supervisors in B/I
- ✓ Undergrads and graduates
- ✓ Alumni
- ✓ Government policymakers

# For More Information...

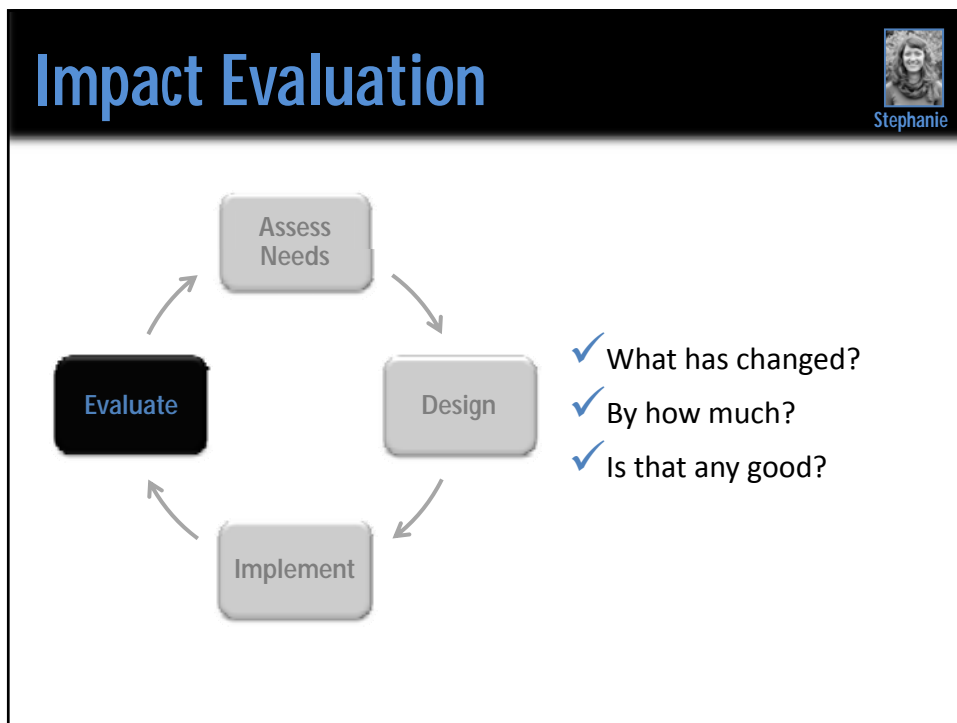
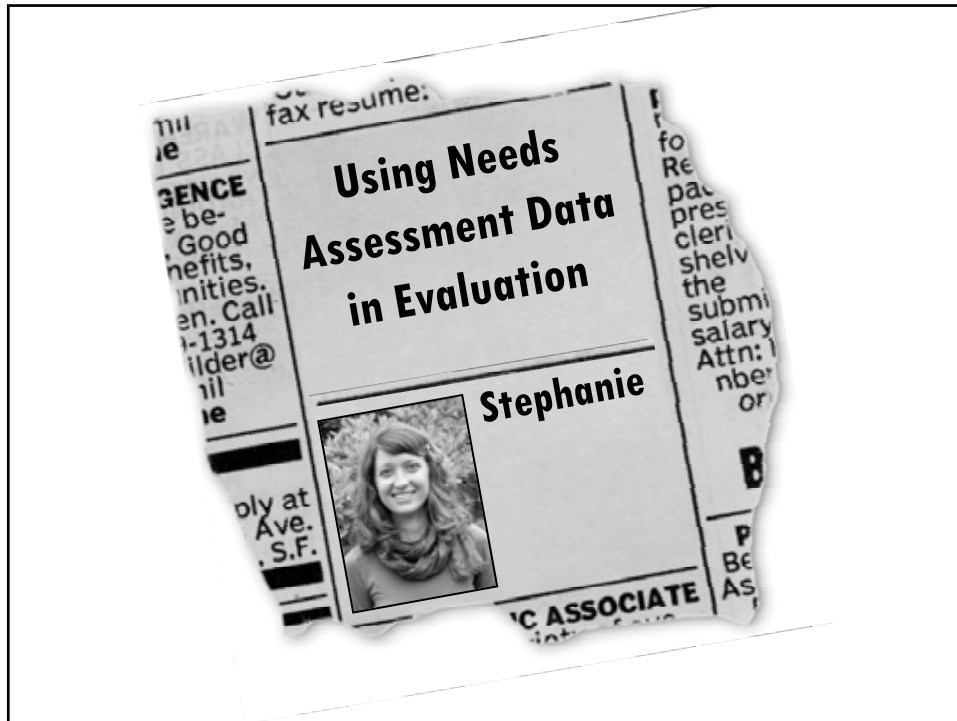


Stephanie



# MATE

[www.marinetech.org](http://www.marinetech.org)



# Using WNA for Evaluation

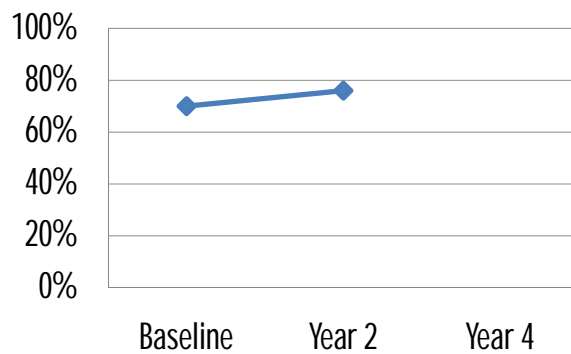


Needs Assessment Results		Evaluation
Task	Required knowledge/skill	Data collection
A1. Properly handle hazardous substances	Knowledge of basic radioisotope safety, such as lab procedures and isolation	Observe performance

# Use as a Baseline




Students with Satisfactory Observation



- ✓ What has changed?
- ✓ By how much?
- ✓ Is that any good?

# Using WNA for Evaluation




Stephanie

Needs Assessment Results		Evaluation			
Task	Required knowledge/skill	Data collection	Percentage of OITs that demonstrate lab procedures satisfactorily		
			Great	Good	Inadequate
A1. Properly handle hazardous substances	Knowledge of basic radioisotope safety, such as lab procedures and isolation	Observe performance	> 90%	71 – 90%	<70%

OIT= Oceanographic Instrumentation Technician

# Archive



Lori

Visit *resources.evaluate.org*  
 Keyword search:  
*needs*



## Upcoming Events




Lori

**Workshop: October 27**  
ATE Conference – Washington, DC  
Designing Practical & Useful  
Evaluations

**Webinar: November 17**  
Getting Started with Your Evaluation  
Register at [www.evaluate-ate.org/events](http://www.evaluate-ate.org/events)



## American Evaluation Association




Lori

**Coffee Break Webinar Series**  
Evaluation Surveys Using SurveyGizmo  
September 16, 2:00-2:20 PM EST

**Annual Conference**  
November 10-13 in San Antonio, TX

**AMERICAN  
EVALUATION  
ASSOCIATION**



Get more information/join at [www.eval.org](http://www.eval.org)

# Continue the Conversation



Join our listserv!

[evalu-ate.org/community](http://evalu-ate.org/community)



## Contributors

Lori Wingate Evaluate @ Western Michigan University	Designer, moderator, contributing author
Stephanie Evergreen Evaluate @ Western Michigan University	Presenter, author
Ken Bartlett University of Minnesota	Presenter, author
Ann Beheler CTC & Porterville College	Presenter, author
Deborah Boisvert BATEC @ University of Massachusetts Boston	Content contributor
Deidre Sullivan MATE Center @ Monterey Peninsula College	Content contributor
Mark Viquesney MATEC Networks @ Maricopa Community College	Webinar provider & technical coordinator
Patricia Negrevski Evaluate @ Western Michigan University	Copyeditor