

Exploring the Landscape: Identifying Pathways to Baccalaureate Degrees in Technician Education

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Overview

- ▶ **Baccalaureate Pathways in Technician Education & the Applied Baccalaureate Degree**
James Jacobs
 - ▶ **Identifying Baccalaureate Pathways Affiliated with NSF-ATE Projects and Centers**
Julia Panke Makela
 - ▶ **Implications for Practice**
Barbara Anderegg
 - ▶ **Next Steps**
Julia Panke Makela
 - ▶ **Q&A**
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Baccalaureate Pathways in Technician Education & the Applied Baccalaureate Degree

James Jacobs
President
Macomb Community College

Transfer

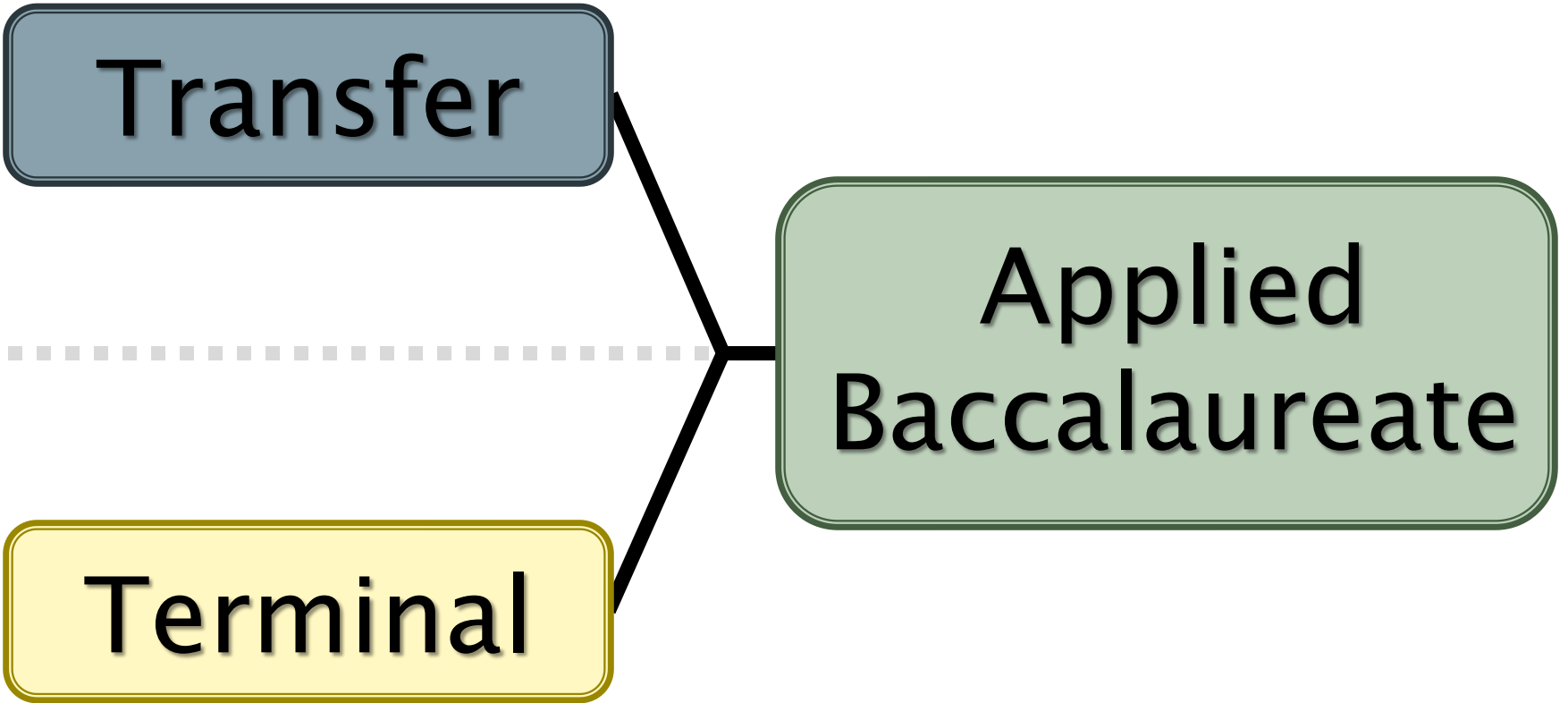
Baccalaureate

Terminal

Transfer

**Applied
Baccalaureate**

Terminal



The Applied Baccalaureate is.....

“...a bachelor’s degree designed to incorporate applied associate courses and degrees once considered as ‘terminal’ or non-baccalaureate level while providing students with the higher-order thinking skills and advanced technical knowledge and skills so desired in today’s job market.”

Townsend, Bragg, & Ruud (2008, p. 4)



Identifying Baccalaureate Pathways Affiliated with NSF-ATE Projects & Centers

*Julia Panke Makela
Research Specialist & Project Coordinator
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Goals of Our Research

- ▶ Identify pathways to baccalaureate degrees in technician education
- ▶ Analyze pathway designs, implementation, and outcomes
- ▶ Uncover promising and exemplary practices related to applied baccalaureate degrees
- ▶ In order to...
 - Provide college administrators and instructors, employers and researchers with detailed information about how AB degree programs operate and meet students' and employers' workforce needs

http://occrl.illinois.edu/projects/nsf_applied_baccalaureate

To Be Accomplished in Three Steps

- ▶ **Brief survey** to identify established formal pathways to baccalaureate degrees
- ▶ **Follow-up survey** to gather information on identified baccalaureate degree pathways, such as:
 - instructional approaches, accreditation and evaluation, services for underserved student populations, partnerships with employers and higher education institutions, perceived impacts of NSF-ATE awards
- ▶ **Case studies** with 7-10 NSF-ATE projects and centers to uncover promising and exemplary practices related to applied baccalaureate degrees

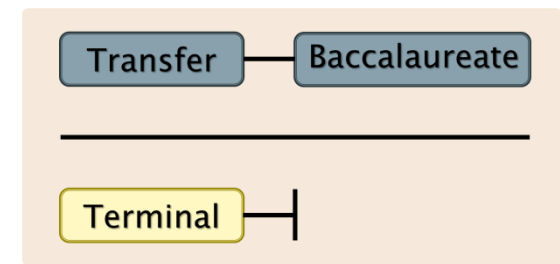
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First Survey Design

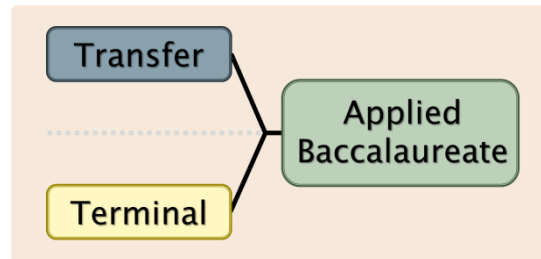
- ▶ Contacted all NSF-ATE Principal Investigators (PIs) with grants awarded grants 1992 and May 2011
- ▶ Inquired about:
 - Degrees affiliated with the NSF-ATE project or center, fields of study, retention and recruitment of underrepresented student populations at the baccalaureate-level, access to student-level data for baccalaureate degrees
- ▶ Received 234 responses (36% of the sample)

Terminal Associate Degrees



- ▶ 24% of survey respondents reported associate degrees affiliated with their NSF–ATE project or center with no established pathway to the baccalaureate
- ▶ Some survey non–participants offered insights into their decision not to participate:
 - “Our Civil Engineering Practitioner Degree is an AAS and therefore is a terminal degree. Our participation in the survey is probably not warranted.”

Existence of Emerging Pathways



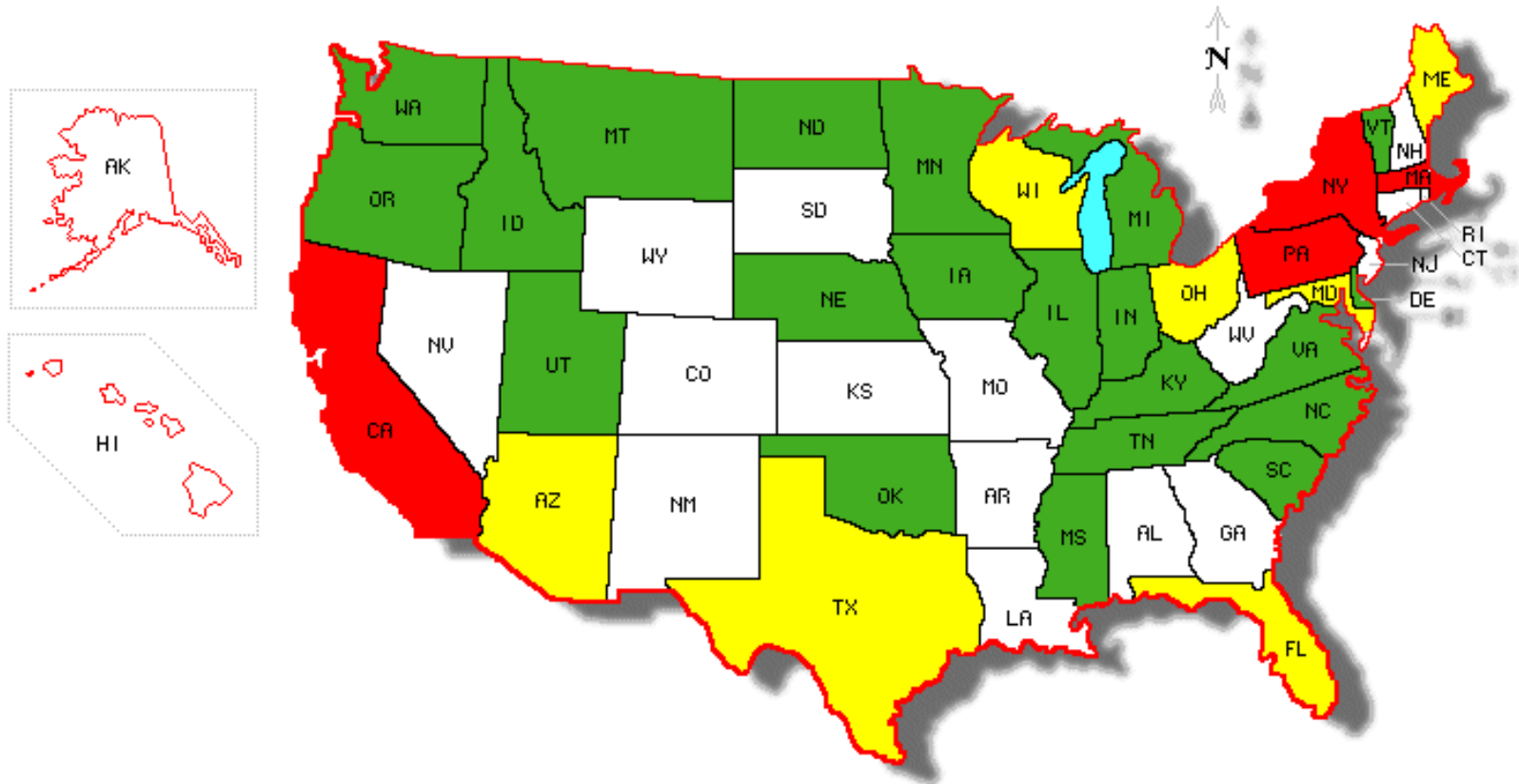
- ▶ Baccalaureate degree pathways affiliated with NSF–ATE projects and centers fit both:
 - traditional patterns of AA and/or AS degrees transferring to BA and/or BS degrees, and
 - emerging degree pathway opportunities such as applied baccalaureate and community college baccalaureate degrees

By the Numbers

- 98 respondents (42%) indicated that affiliated associate degree programs had established formal baccalaureate degree pathways
- 47 respondents (20%) indicated at least one pathway that began from an applied associate degree

Great Variety Across Respondents*

- - 1-2 Projects/Centers
- - 3-4 Projects/Centers
- - 5 Projects/Centers



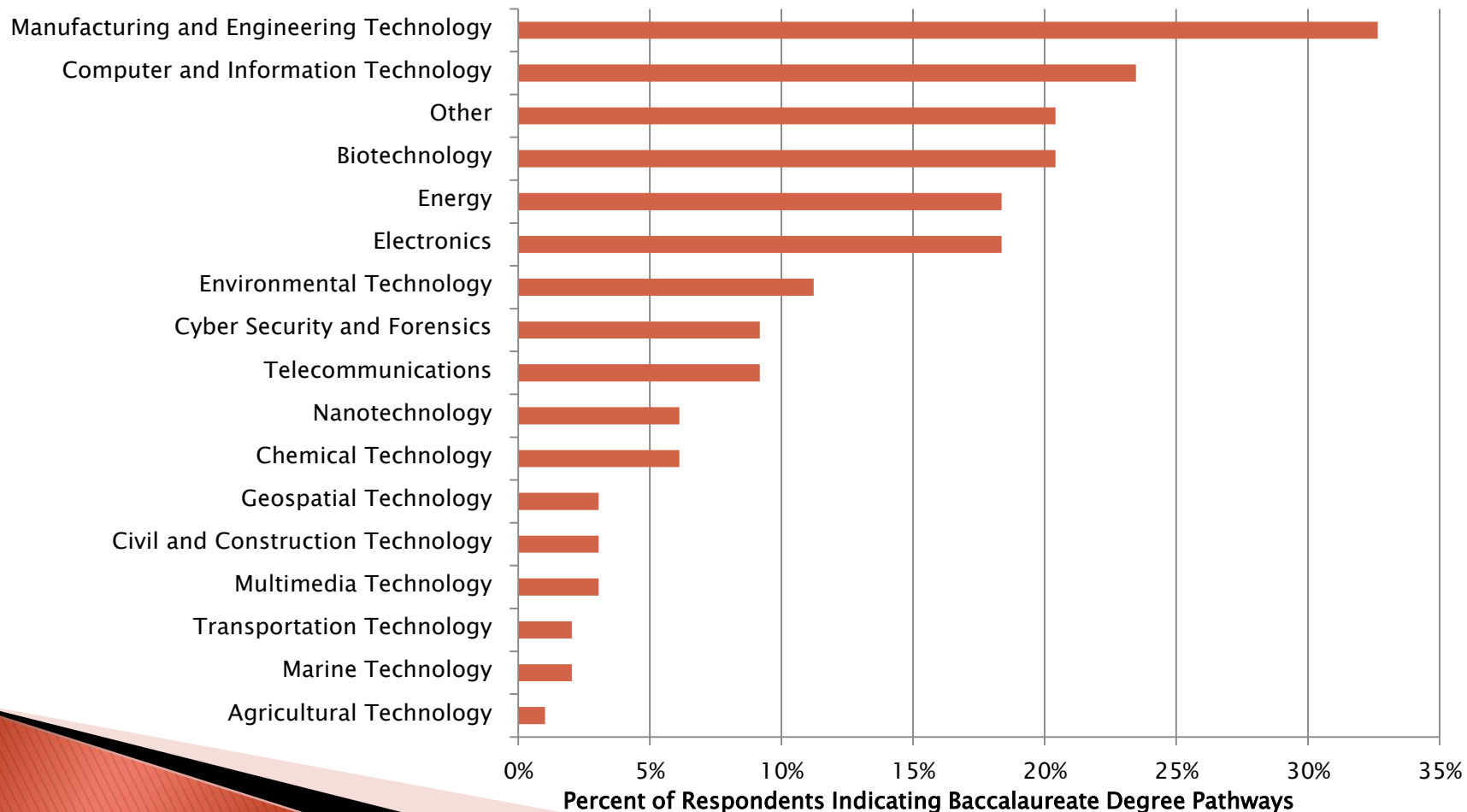
NOTES:

Puerto Rico: 2 Projects/Centers

* Includes state locations from 79 of the 98 respondents who indicated baccalaureate degree pathways affiliated with NSF-ATE projects and centers.

Great Variety Across Respondents

► Technical Fields of Study



Great Variety Across Respondents

- ▶ Analysis of 87 of the established degree pathways
 - Applied Associate → Technical Baccalaureate (22)
 - Applied Associate → Traditional Baccalaureate (32)
 - Traditional Associate → Technical Baccalaureate (11)
 - Traditional Associate → Traditional Baccalaureate (47)

Degree Examples

Applied Associate	AAA, AAS, AAAS, AAT, AET, AT
Traditional Associate	AA, AS
Technical Baccalaureate	BAA, BAS, BAAS, BAT, BT
Traditional Baccalaureate	BA, BS

Great Variety Across Respondents

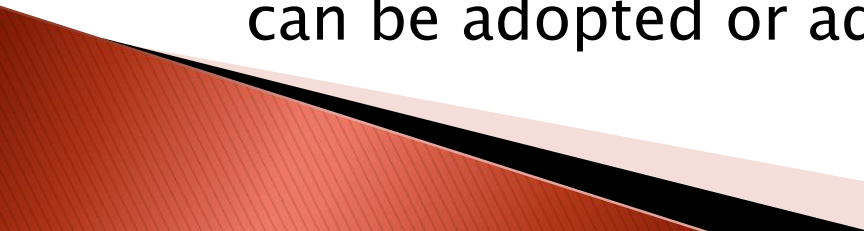
- ▶ Community college baccalaureate (CCB) degrees were indicated by 20 respondents in various fields of study, including:

- Biotechnology
- Chemical technology
- Computer and information technology
- Cyber security and forensics
- Electronics
- Energy
- Environmental technology
- Manufacturing and engineering technology
- Marine technology
- Nanotechnology
- Telecommunications
- Transportation technology

CCB Defined...

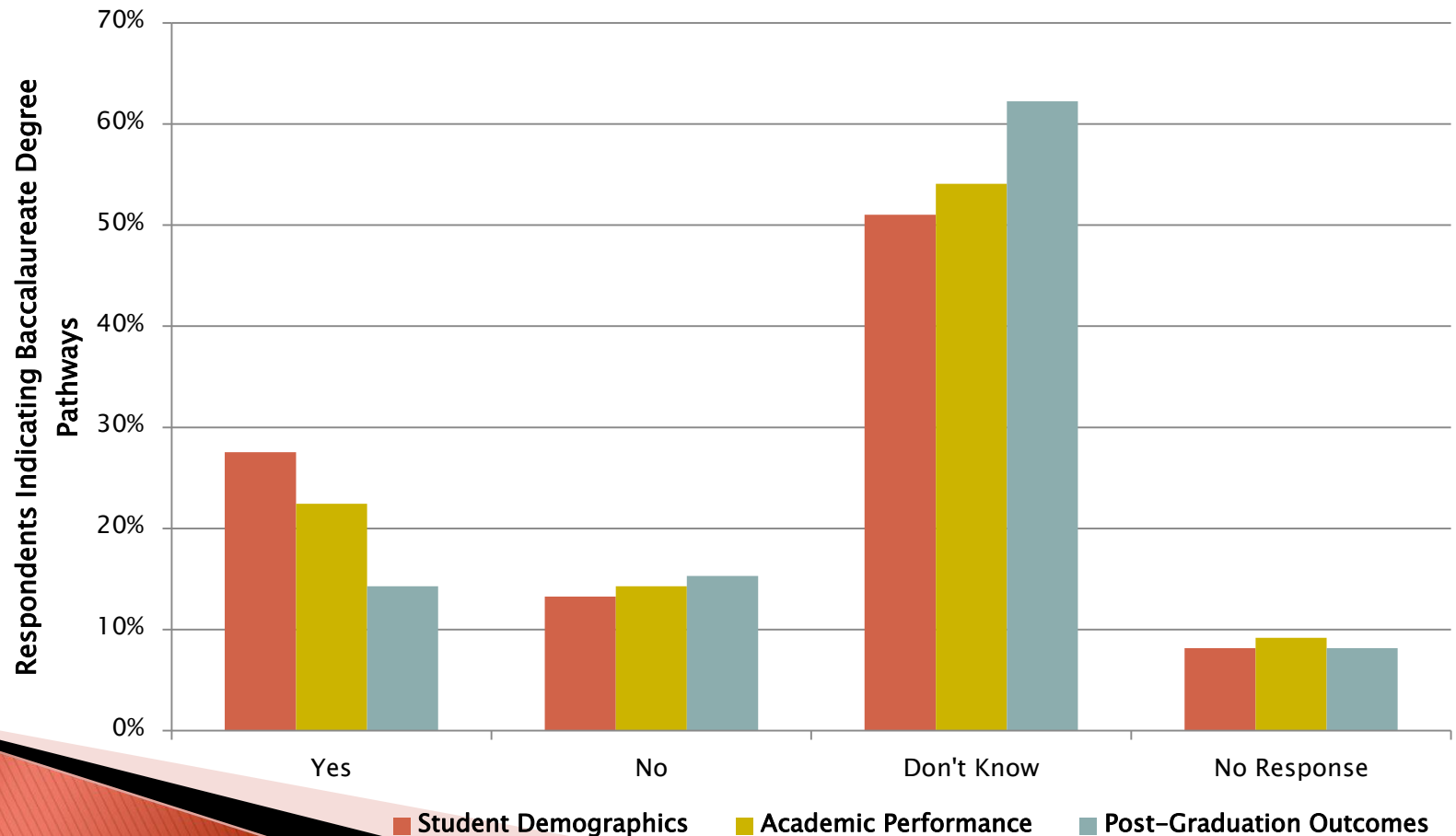
Any form of baccalaureate degree awarded by an institution identified as a community college, technical college, two-year college, two-year or technical branch campus of a university system, or any other institution that primarily awards associate degrees.

Great Variety Across Respondents

- ▶ This variety makes baccalaureate degree pathways in technician education challenging to describe and compelling to examine.
 - ▶ It motivates questions of:
 - How are program goals and content designed?
 - What perceived needs are these degree programs established to meet?
 - What program features contribute to effectiveness?
 - How can effectiveness be measured?
 - What can be learned from one degree program that can be adopted or adapted to another setting?
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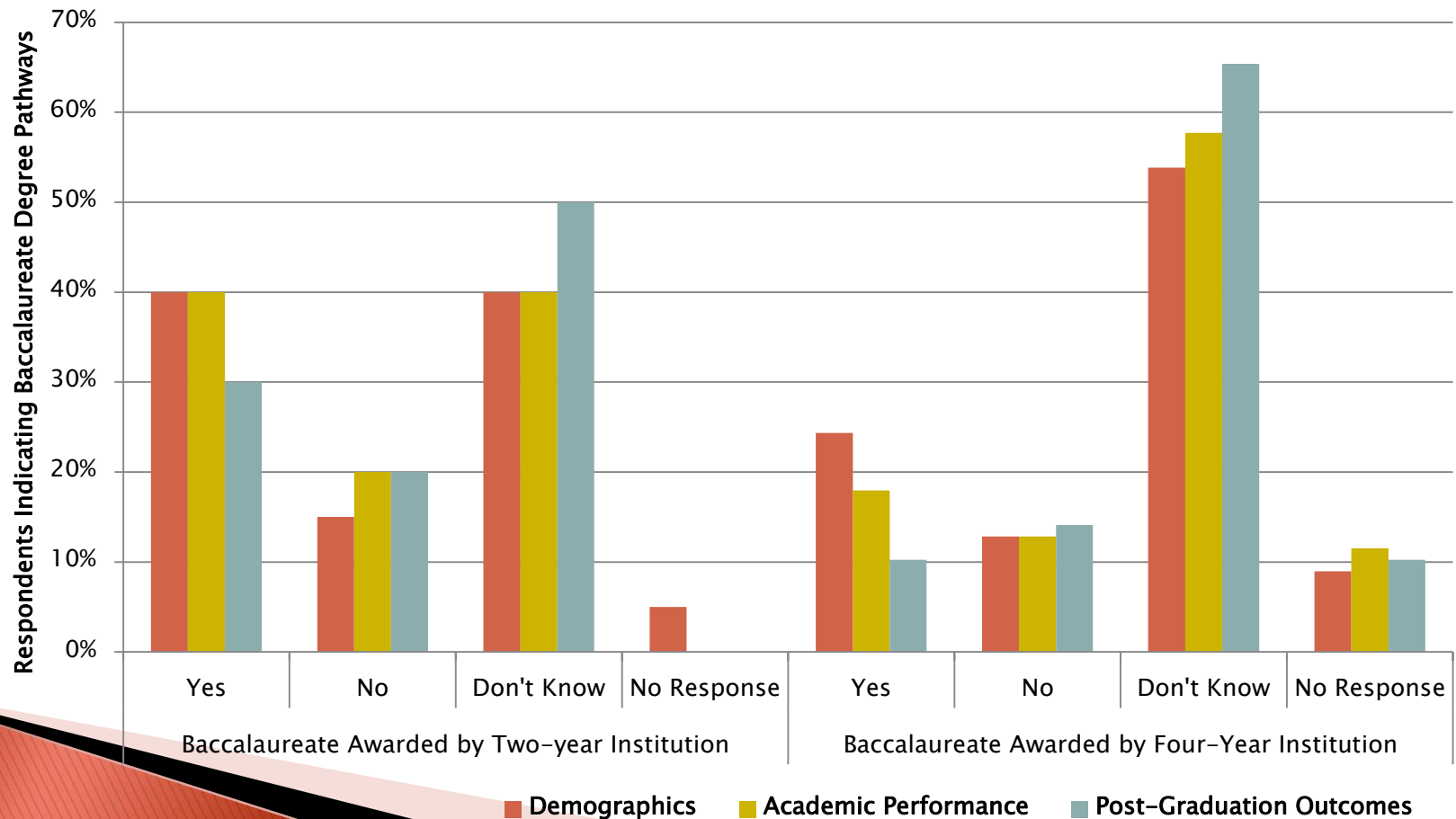
Uncertainty Regarding Baccalaureate Degree Programs

- ▶ Are student-level data available for baccalaureate degrees?



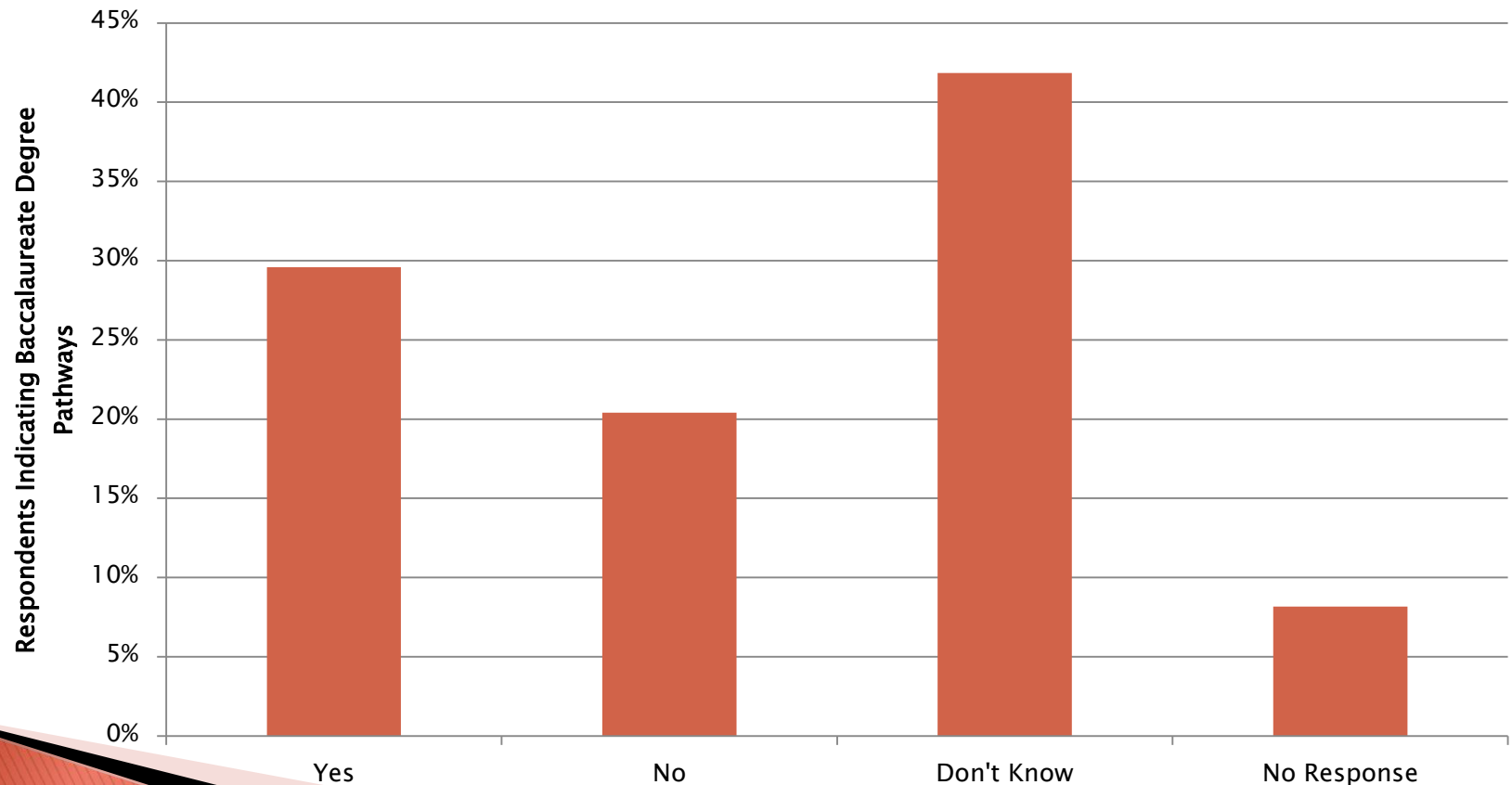
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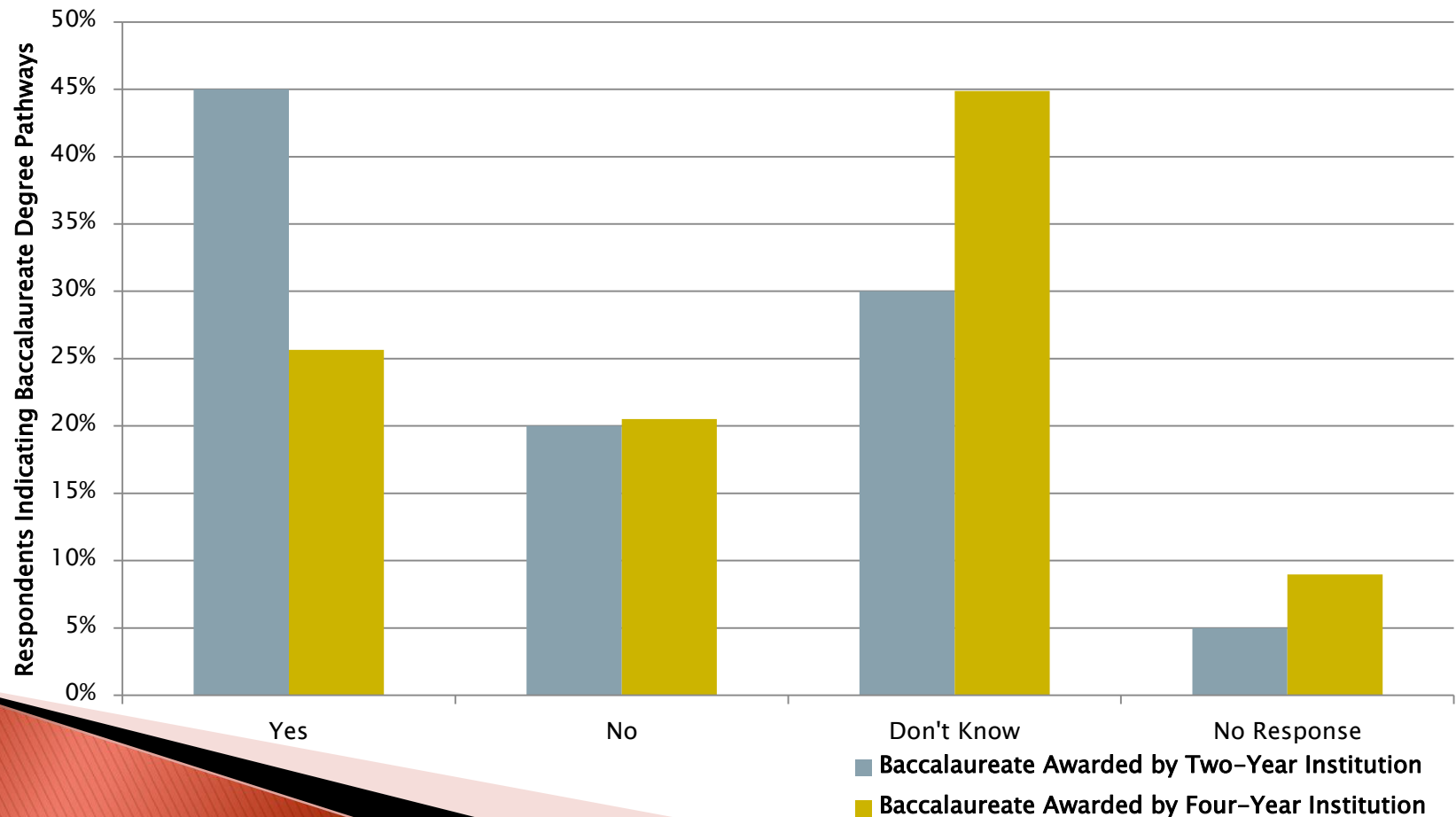
Uncertainty Regarding Baccalaureate Degree Programs

- ▶ Do baccalaureate degrees intentionally or explicitly target underserved populations?

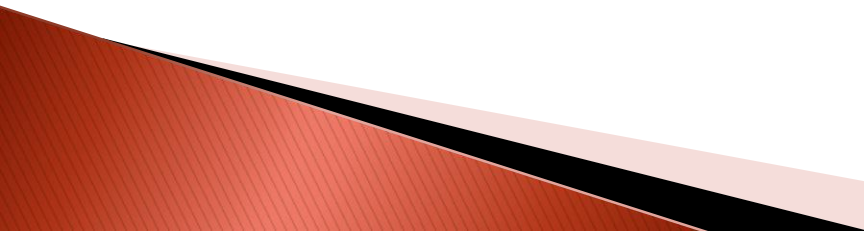


Uncertainty Regarding Baccalaureate Degree Programs

- ▶ Do baccalaureate degrees intentionally or explicitly target underserved populations?



Uncertainty Regarding Baccalaureate Degree Programs

- ▶ Further research is needed to explore relationships and communications between NSF–ATE PIs and baccalaureate degree-granting institutions
 - Are participation and outcomes data collected?
 - If so, how are the data shared and for what purposes?
 - What are notable AB programs doing to facilitate data collection, relationships among partnering institutions and employers, and communication processes?
- 

Implications for Practice

Barbara Anderegg

Principal Investigator

*NSF Consortium for Education in Renewable Energy
Technology, Madison Area Technical College*

Next Steps

*Julia Panke Makela
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Read more about it!

- ▶ AB Inventory (2008)

<http://occrl.illinois.edu/files/Projects/lumina/Report/AppBaccInventory.pdf>

- ▶ AB Policy Brief (2009)

<http://occrl.illinois.edu/files/InBrief/AppBaccBrief.pdf>

- ▶ AB Convening Paper (2011)

http://occrl.illinois.edu/files/Projects/lumina/Paper/AB_Convening_Paper.pdf

- ▶ Lumina Final Report (2011)

<http://occrl.illinois.edu/files/Projects/lumina/Report/LuminaABFinalReport.pdf>

- ▶ AB Book Chapters (forthcoming)

Get Involved

- ▶ Follow-up survey goes live TODAY – Oct 6th
- ▶ Sent to NSF-ATE PIs who indicated pathways to baccalaureate degrees in the initial survey
- ▶ Want to participate, but didn't receive the survey?
 - Contact Julia Makela
jpmakela@illinois.edu
217-244-2457

About the Follow-Up Survey

- ▶ Primary Purpose
 - To identify characteristics of noteworthy AB programs in technician education
- ▶ Participant Opportunities
 - Participants are asked to nominate AB programs that they feel have notable features, and then tell us about them
 - Profiles will be developed from the survey data for all submitted programs, and highlighted in a portfolio of notable NSF-ATE AB degree pathways
 - Participants will receive a copy of their pathway profile(s)

Thank you in advance for your participation!

Sample Notable AB Degree Program Profile

Available at:

[http://occr1.illinois.edu/
files/Projects/nsf_ab/AB
PathwayProfileDemo.pdf](http://occr1.illinois.edu/files/Projects/nsf_ab/ABPathwayProfileDemo.pdf)

Applied Baccalaureate Degree Pathway Profile, Continued



Additional Reflections from Program Administrators

"There is no question that NSF-ATE funding—in conjunction with significant institutional and individual commitment—has allowed Oklahoma and the United States to more effectively respond to increasing demands for technology professionals prepared (and appropriately credentialed) to

About this Profile

This baccalaureate degree pathway profile was created by the Office of Community College Research and Leadership, based on data collected in a national survey of National Science Foundation Advanced Technological Education (NSF-ATE) program Principal Investigators.

The survey was conducted as a part of a larger research project, entitled *The Applied Baccalaureate Degree: An Emerging Pathway to Technician Education*. This project is designed to examine the phenomenon of applied baccalaureate (AB) degrees in the United States, by documenting and evaluating NSF-ATE's impact on technician education in the form of new and emerging AB degree programs in fields such as engineering, and

is to provide college
overs, and researchers
about how AB degree
those affiliated with
te through partnerships
workforce needs.
ived from the National
nological Education

ocr1.illinois.edu

UCATION
DATA CHAMPION

BT in Informational Technologies Oklahoma State University Institute of Technology



Associate Degrees

AS and AAS degrees are offered by several two-year colleges, including: Rose State College, Tulsa Community College, Oklahoma City Community College, and Richland College.

Courses are offered on-campus and online, using *instructional techniques* such as team-based learning, contextualized learning, laboratory or hands-on learning, and problem-based learning.

Program evaluation involves needs assessment, as well as reviewing student demographics, retention, course completion, and grades for each academic term.

Baccalaureate Degree

The *BT in Informational Technologies* is offered by Oklahoma State University Institute of Technology.

Courses are offered on-campus, off-campus, and online, using *instructional techniques* such as capstone experiences, team-based learning, contextualized learning, interdisciplinary courses, internships, laboratory or hands-on learning, and problem-based learning.

The degree program actively *recruits* adults, unemployed workers, racial and ethnic minorities, and women. *Retention and persistence* programs are offered for adults, unemployed workers, English language learners, racial and ethnic minorities, and students with disabilities.

Program evaluation involves needs assessment, as well as reviewing student demographics, retention, course completion, and grades for each academic term. On an annual basis, program goals, student learning, and student achievement after graduation are also assessed.

Applied Baccalaureate Degree Pathway Profile

Supportive Partnerships

These degree pathways were *mutually initiated by the associate and baccalaureate degree-granting institutions*.

Partnerships are established among *academic departments* across institutions, including Rose State College's Business & Information Technology Division, Tulsa Community College's Business and Information Technology Division, and Richland College's School of Engineering, Business & Technology.

Employer-initiated partnerships also play a supportive role, helping students build technical skills in the specific technical area of informational technology. Some partnering employers include Chesapeake Energy, the Federal Bureau of Investigation, and American Electric Power.

Reflections from Program Administrators

The BT in Informational Technologies baccalaureate degree pathway "provides opportunities for seamless articulation for (previously underserved) applied associate degree graduates in related disciplines. NSF-ATE funding facilitated much more significant and rapid program development (e.g., curriculum development, faculty professional development, etc.) than could have occurred otherwise."

Taking Your Questions



James
Jacobs



Julia Panke
Makela



Barbara
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