



The National Landscape for Applied Baccalaureate in STEM Fields

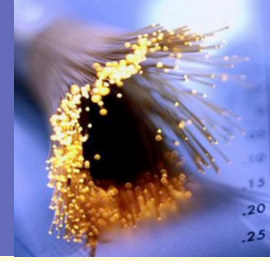
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Office of Community College
Research and Leadership,
University of Illinois

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March 3, 2012
Philadelphia, PA

Overview



- Looking back ~

Lessons Learned from 50-state Policy Study of Applied Baccalaureate Degrees

- Looking ahead ~

The Applied Baccalaureate Degree: An Emerging Pathway to Technician Education





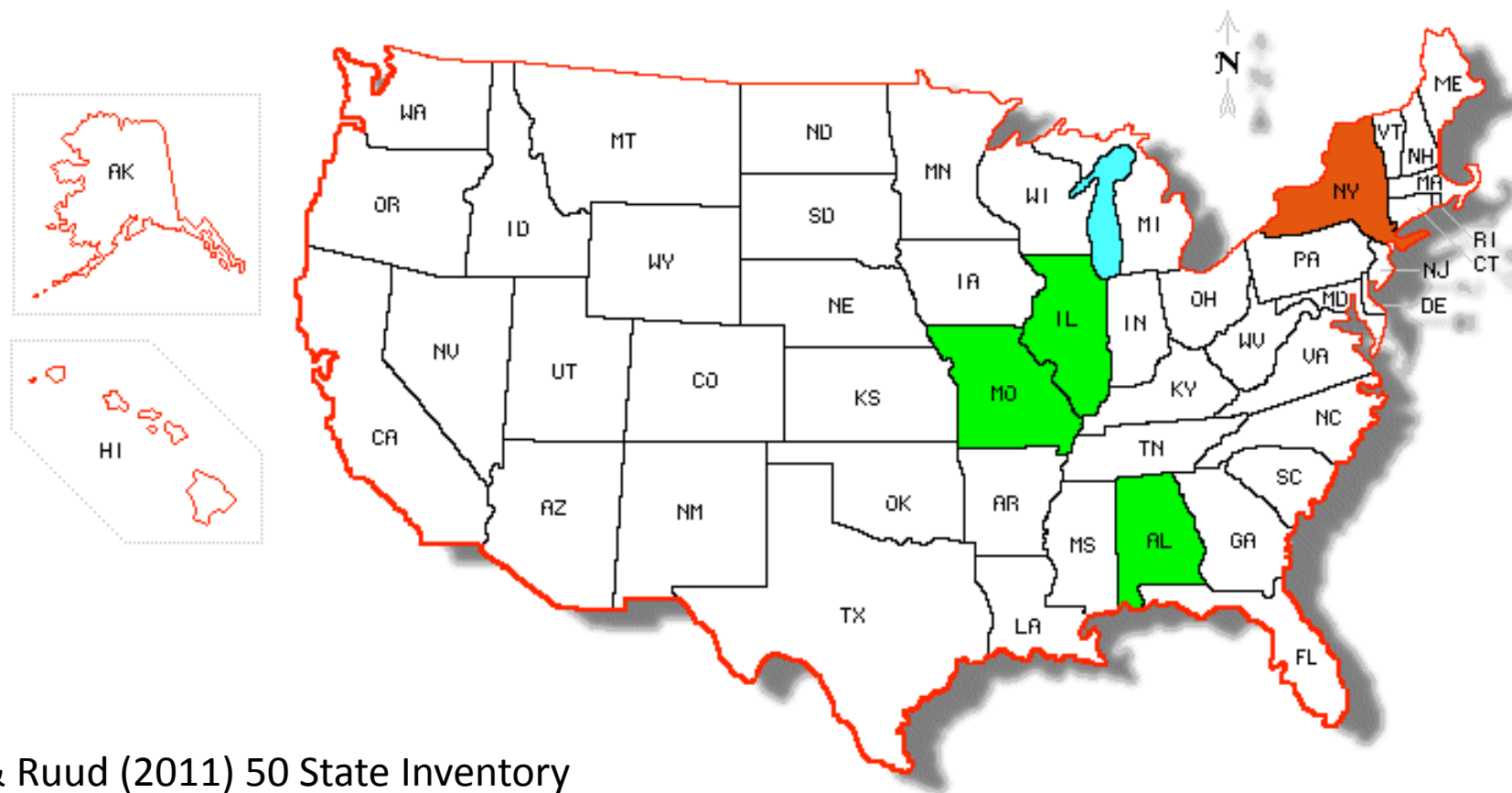
Trends in State Adoption of Applied Baccalaureate

Modest Start, Big Finish!



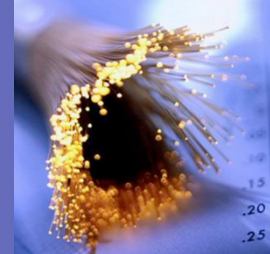
States with AB Degrees: 1970s

- - 2-year only
- - 4-year only



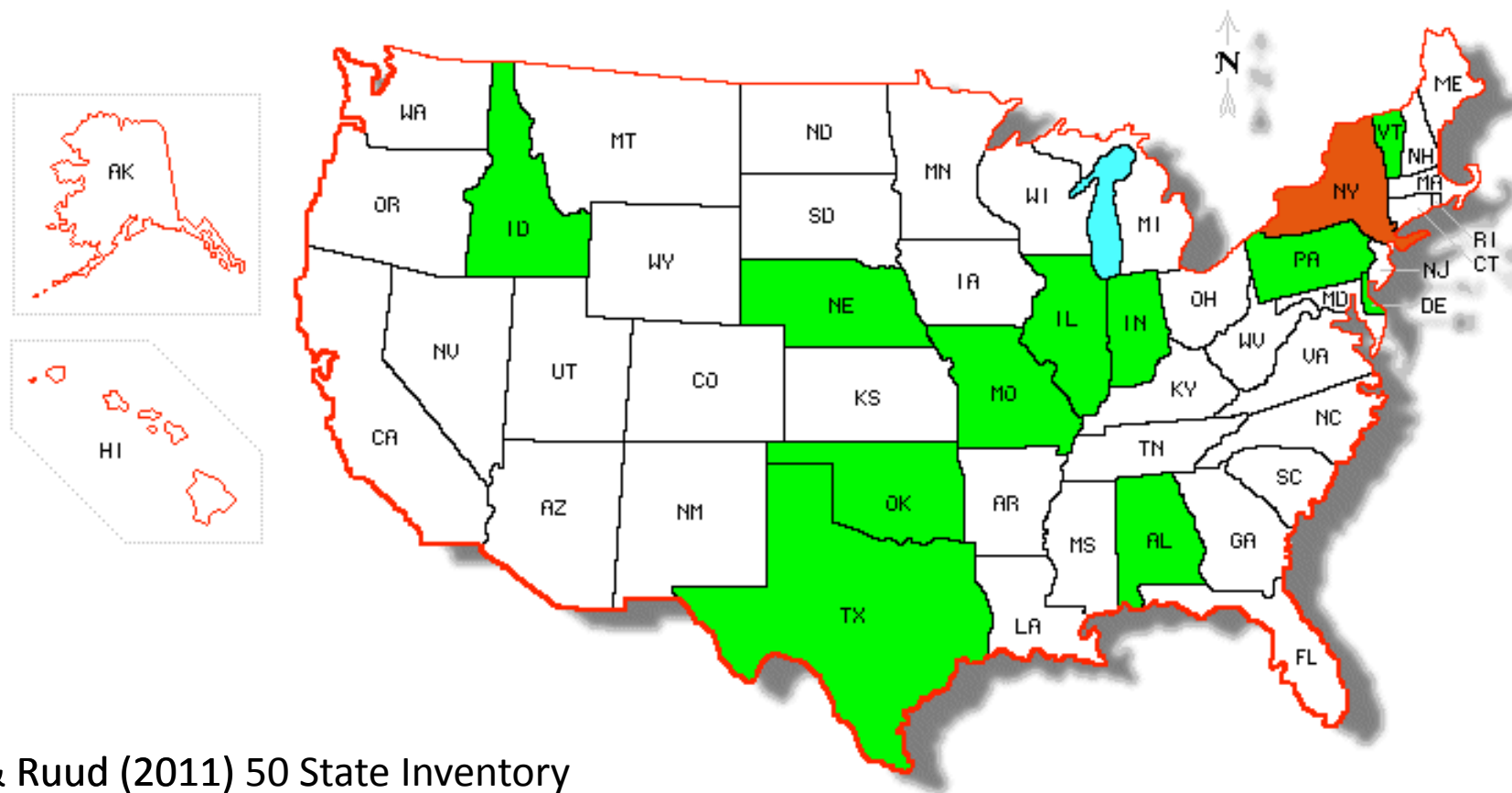
Bragg & Ruud (2011) 50 State Inventory





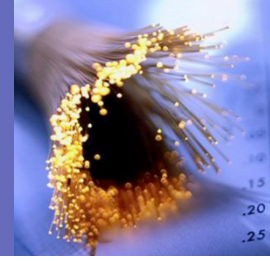
States with AB Degrees: 1980s

- - 2-year only
- - 4-year only



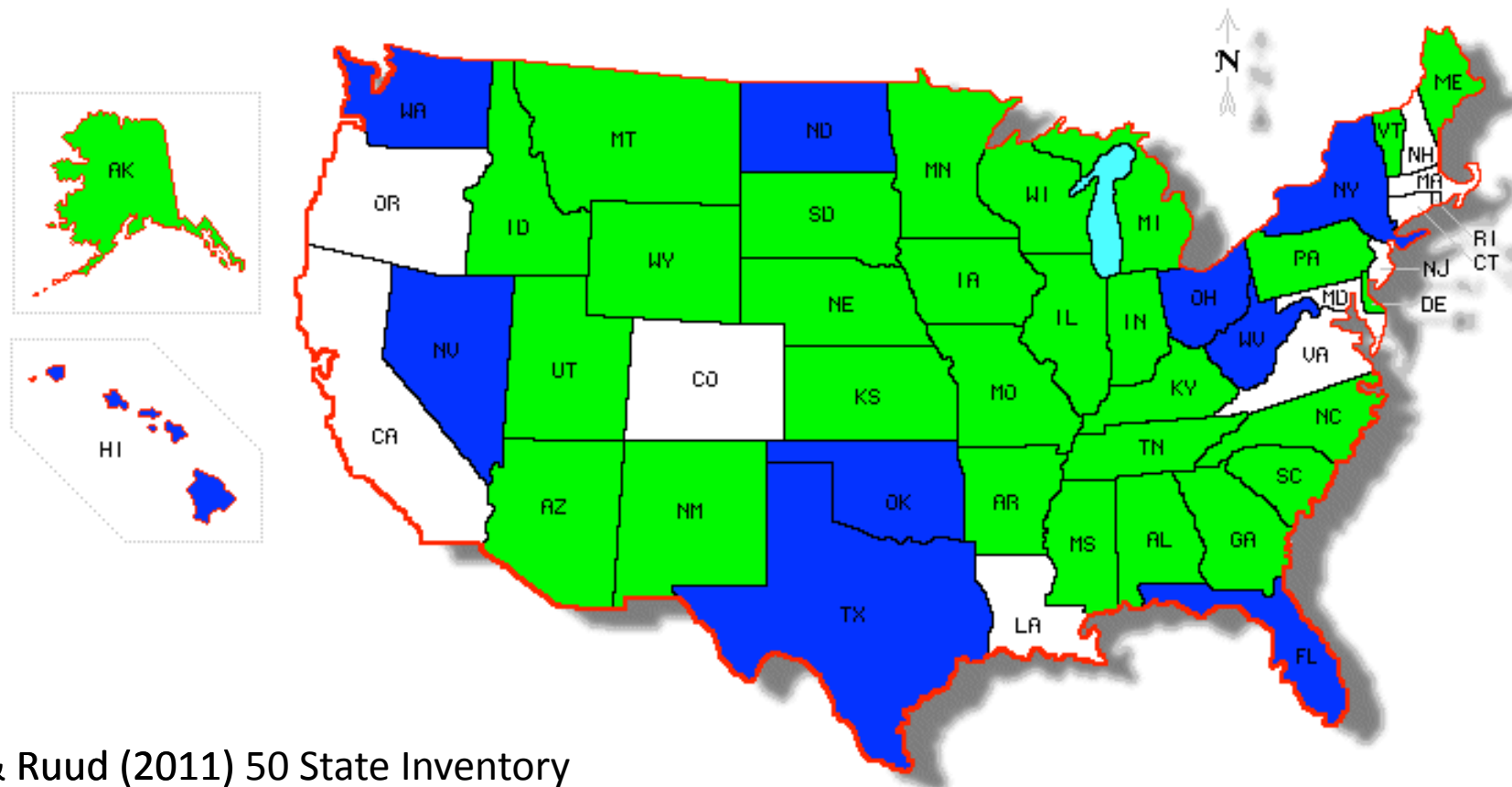
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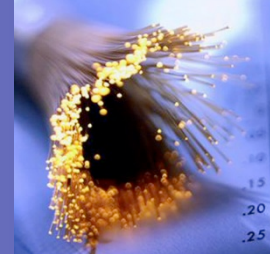
States with AB Degrees: 2000s

- - 4-year only
- - 2-year/4-year



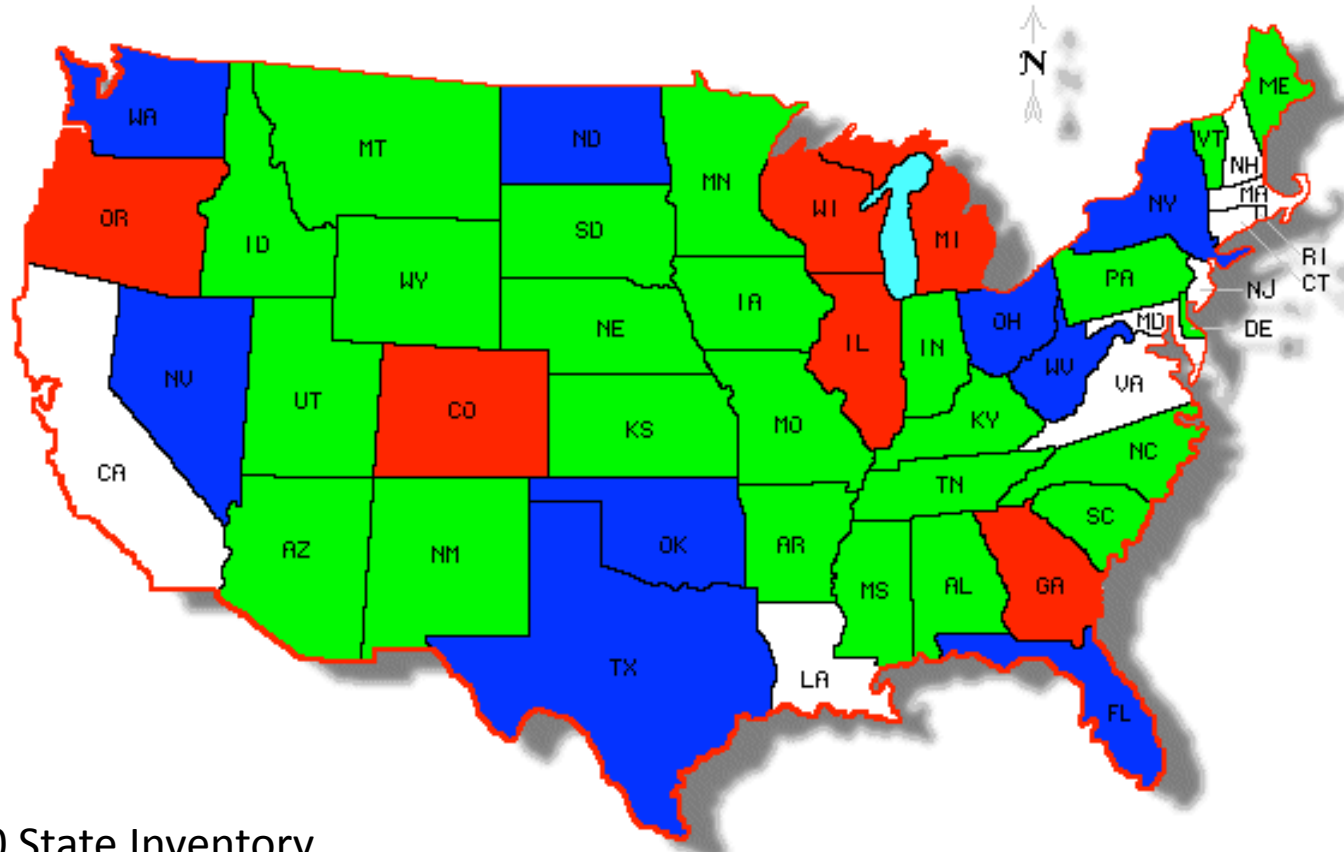
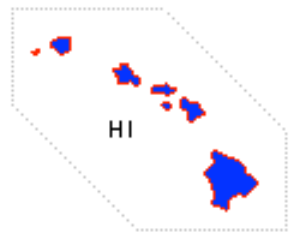
Bragg & Ruud (2011) 50 State Inventory





States with AB Degrees: 2000s

- - 4-year only
- - 2-year/4-year
- - New Developments



Bragg & Ruud (2011) 50 State Inventory

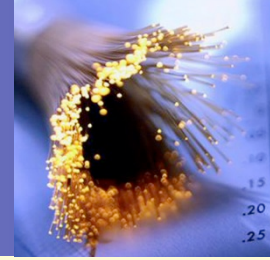




Definitions of Applied Baccalaureate (AB) Degrees

“The Devil is in the Detail”

Transfer Pathway

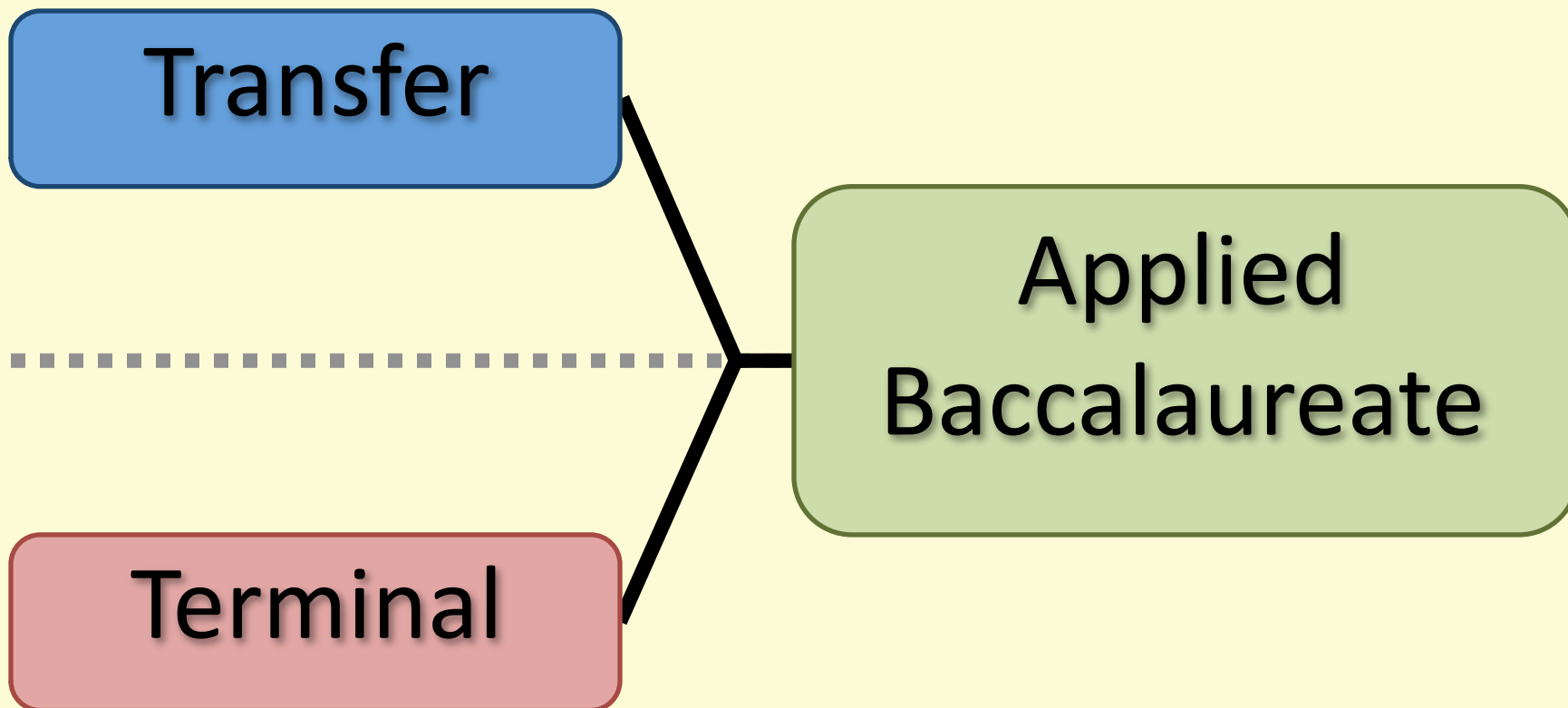
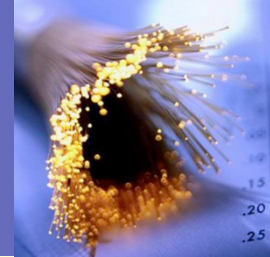


Transfer

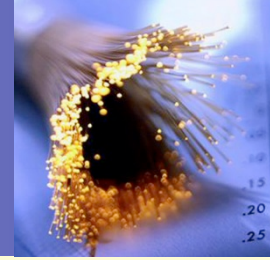
Baccalaureate

Terminal

AB Pathway



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)



Your Definition



- How do you define the Applied Baccalaureate (AB) degree?
- What AB degrees are offered by your institution, and what do the curricular pathways look like?



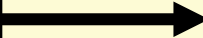
Example AB Pathway



Associate Degrees

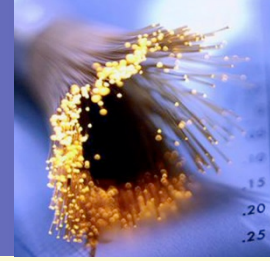
Baccalaureate Degrees

Degree	Field	Inst. Awarding Degree
AAS	Information Technology	Community College Name



Degree	Field	Inst. Awarding Degree
BAS	Computer Technology	State University Name





“Pure” AB Pathway: AAS to BAS

Associate Degrees

Baccalaureate Degrees

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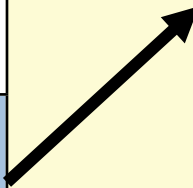
AS to BAS Pathway



Associate Degrees

Baccalaureate Degrees

Degree	Field	Inst. Awarding Degree
AAS	Information Technology	Community College Name
AS	Computer Programming	Community College Name



Degree	Field	Inst. Awarding Degree
BAS	Computer Technology	State University Name

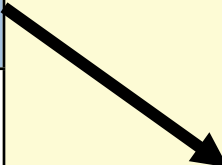


AAS to BS Pathway



Associate Degrees

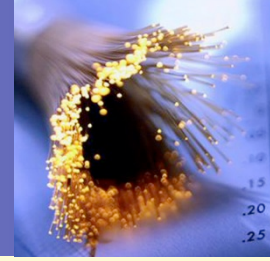
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Baccalaureate Degrees

Degree	Field	Inst. Awarding Degree
BAS	Computer Technology	State University Name
BS	Computer Engineering	State University Name



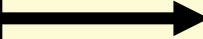


AS to BS Pathway

Associate Degrees

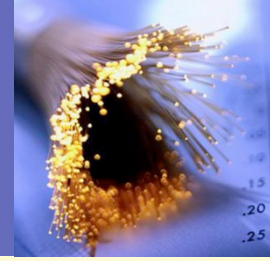
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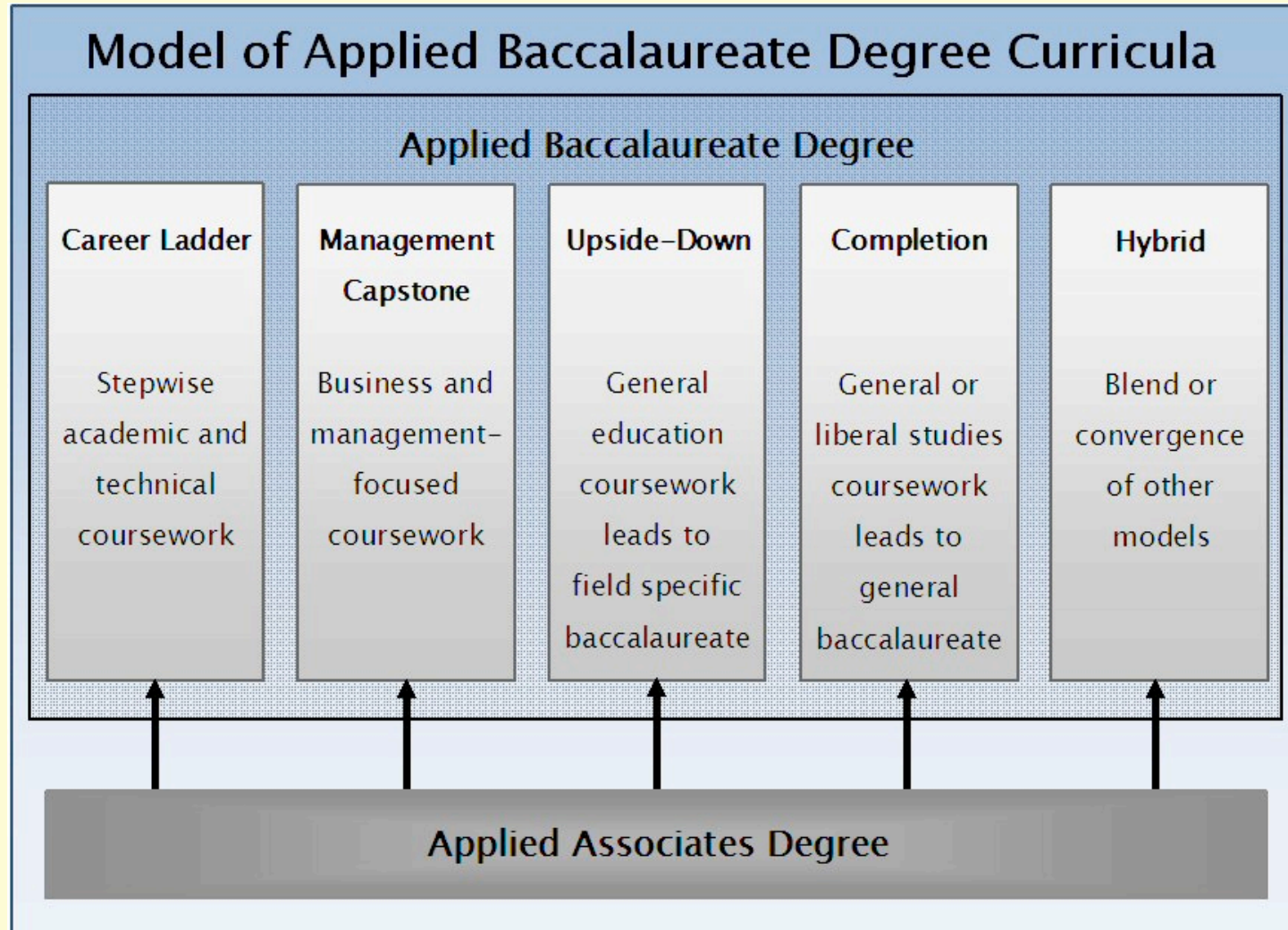


Degree	Field	Inst. Awarding Degree
BAS	Computer Technology	State University Name
BS	Computer Engineering	State University Name

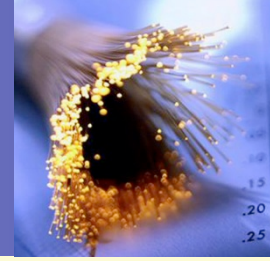




AB Pathway Models



AB Debates



Supporters' Arguments

- Address workforce needs in the geographic region and beyond
- Address calls to increase numbers of college graduates
- Improve international competitiveness
- Promote equity in postsecondary education

Critics' Arguments

- Questions about rigor and quality of applied baccalaureate degrees
- Uncertainty about outcomes for students and graduates
- Highly specialized training programs may prepare people for jobs that will not exist in the near future

But, very little research is available to provide evidence of benefits or drawbacks.



The Applied Baccalaureate Degree:

OCCRL's current research

Applied Baccalaureate and ATE

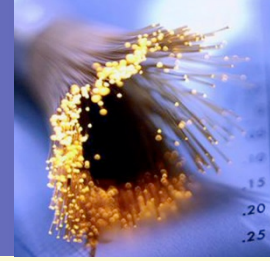


- **Examine AB degree pathways through the lens of the National Science Foundation's Advanced Technological Education (NSF-ATE) program**
 - Identify AB degree pathways in technician education
 - Analyze pathway designs, implementation, and outcomes
 - Uncover promising and exemplary practices related 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' needs

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

Office of Community College Research and Leadership, University of Illinois at Urbana-Champaign

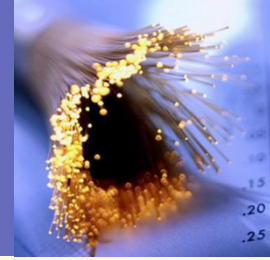




To Be Accomplished in Two Phases

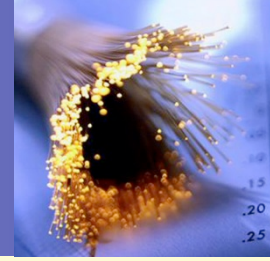
- **Landscape Study** (May 2011 – Feb 2012)
 - Descriptive analysis using surveys, website reviews, and document analysis to determine the shape and scope of applied baccalaureate degrees in technician education
- **Participatory Field Study** (Mar 2012 – 2013)
 - Case studies with 6–8 NSF-ATE projects and centers to uncover promising ideas and proven practices related to applied baccalaureate degrees

Landscape Study Focus



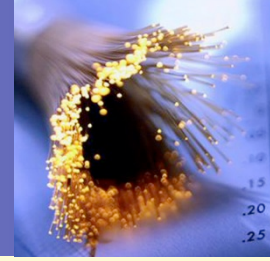
- **Identify baccalaureate degree pathways in technician education**
 - Survey of NSF-ATE Principle Investigators
 - Led to the discovery of 95 baccalaureate degree pathways
- **Exploring the curricula that make up those degree pathways**
 - Website search and document review of course requirements and sequences for all institutions involved in each baccalaureate degree pathway
- **Describe characteristics of AB degree pathways**
 - Follow-up survey and in-depth website reviews to examine identified AB degree pathways





Sharing What We've Learned

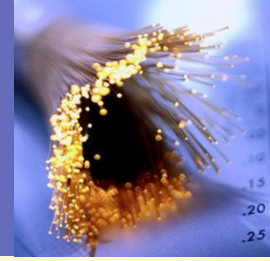
- **New baccalaureate degree pathways are emerging in STEM education**
 - Almost 10% of all identified baccalaureate degree pathways were in some stage of development, with plans in some cases to enroll the first class of students as early as Fall 2012
 - 70% of the AB degree pathways that were nominated as “notable” by survey respondents had been developed within the past ten years



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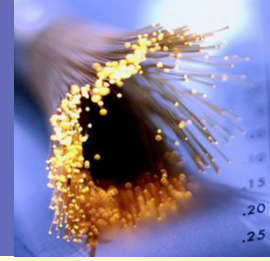
- **Baccalaureate degree pathways are dominated by variety**
 - Across the 95 identified baccalaureate degree pathways...
 - More than 30 different fields of study were reported
 - Pathways were initiated by a number of sources, including associate-degree granting institutions, baccalaureate-degree granting institutions, NSF-ATE-funded centers, or a combination of sources
 - 20% of cases reported affiliation with community college baccalaureate degrees
 - AB degree pathways exhibited all curricular models:
 - Career ladder
 - Management capstone
 - Upside-down
 - Completion
 - Hybrid

Sharing What We've Learned



Baccalaureate Degree Pathway Fields of Study

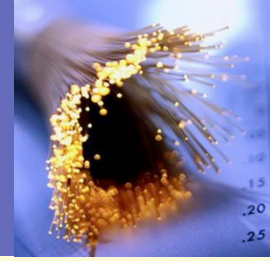




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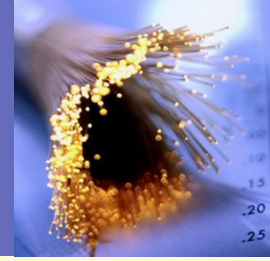
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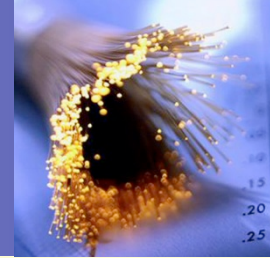
- **Within STEM programs of study offered by postsecondary education, AB degree pathways have a strong presence**
 - Of the 51 degree pathways for which we found evidence on institutional websites, 68.6% were AB degree pathways
 - Many of these AB degree pathways articulate applied associate degrees (e.g., AAS) to traditional baccalaureate degrees (e.g., BS). In fact, this is the case for 8 of the 10 degree pathways that participants identified as “notable” in this study



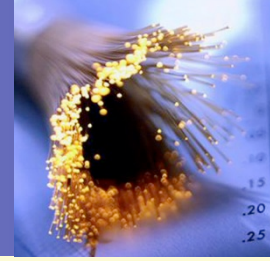
Sharing What We've Learned

- **Applied and transfer associate degree programs can exhibit strikingly similar characteristics**
 - Few differences in 5 of 8 cases
 - In 4 of these 5 cases, we were able to confirm that the nontransferable curricula existed first
 - Modifications related to mathematics or writing classes, and affected 1 (3 cases), 2 (1 case) or 5 (1 case) classes of the entire associate degree curricula
 - The remaining 3 cases, had more substantial differences
 - Between 30% and 60% of the curricula differed
 - Some respondents described different underlying purposes
 - Yet, in one case, online program descriptions for the two degrees were almost identical

Sharing What We've Learned

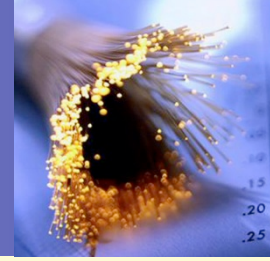


- **Limited evidence exists about the outcomes and impacts of AB degree programs and pathways**
 - In over half of the cases, information about the availability of student-level outcomes data and recruitment of underrepresented student populations were unknown by survey respondents
 - Several reasons were cited:
 - Small number of faculty (often 1 or 2) who manage these programs not having time and staff support to pursue evaluation and tracking efforts
 - Lack of reporting systems that cross institutional boundaries



Sharing What We've Learned

- **Some respondents avoid applied language due to perceived stigma**
 - Concerns centered around:
 - Lack of recognition of applied baccalaureate degrees with state policy contexts
 - Lowering perceptions institutional prestige for those who identify with applied baccalaureate degrees



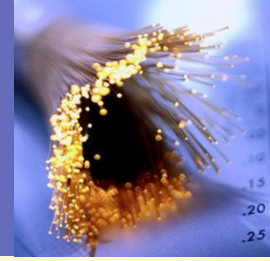
Sample Areas for Future Inquiry

- **Pathway development and sustainability**
 - What factors, resources, and environments promote AB degree program development and sustainability?
- **Outcomes, measurement, and data dissemination**
 - What are the intended and actual outcomes of AB degree programs?
 - How are these outcomes measured and shared?
- **Replicability**
 - What can be learned from one AB degree program or pathway to be adopted or adapted to another setting?
- **Comparisons of terminal and transferable associate degrees**
 - What is the difference between preparation for the workforce versus academic transfer?
 - Who is best served by differing curricular designs?



Discussion / Question & Answer

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