

ILLINOIS Pathways

Science, Technology, Engineering & Math

Agenda

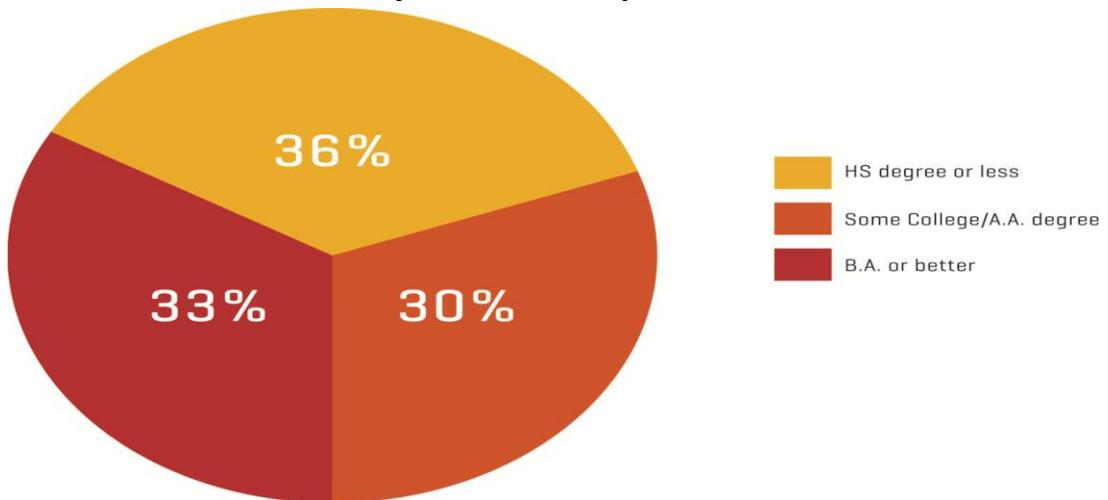
- 1) Governor's Launch of Illinois Pathways
- 2) Presentations
 - A. Why Illinois Pathways? – *Bill Symonds & Jason A. Tyszko*
 - B. Review of Race to the Top Round 3 Award – *Susie Morrison*
 - C. Update on P-20 STEM Programs of Study and STEM Learning Exchanges – *Jason A. Tyszko*
- 3) Q&A Panel
- 4) Networking

Pathways to Prosperity: The National Perspective

William Symonds

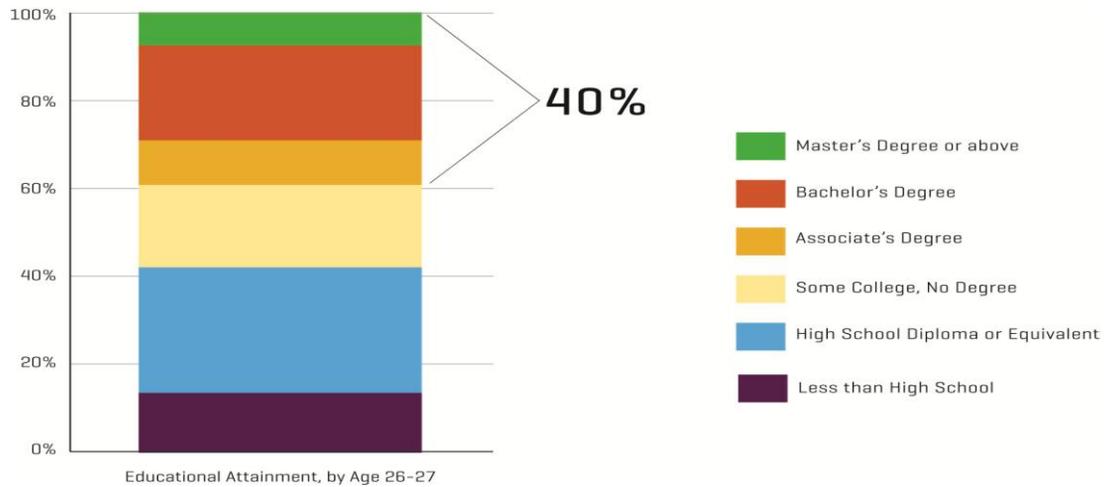
Director, Pathways to Prosperity Project
Harvard Graduate School of Education

College for All does not mean everyone needs a B.A. Even in this decade most jobs do not require a B.A.



Source: March CPS data, various years; Center on Education and the Workforce forecast of educational demand to 2018.

The current U.S. reality: only 40% of 27-year olds have earned an A.A. degree or higher



Note: Represents data collected in surveys between 2006-2008; GED is approximation based on data from GED Testing Program.
Source: Current Population Survey Annual Social and Economic Supplement.

Three Core Elements of the Pathways System

1. Multiple Pathways
2. An Expanded Role for Employers
3. A new Social Compact with Young People

RESPONSE to the Pathways Report

- **NATIONAL:**
 - *More than half the states
 - *Red AND Blue States
- **MIDWEST**
 - *Illinois Pathways Initiative
 - *Indiana Education Roundtable
 - *Wisconsin and Minnesota

Next Steps

- **Begin a national conversation on the reforms needed to prepare far more youth for success**
- **Convene a National Pathways Conference**
- **Create a National Network of Pathways States**

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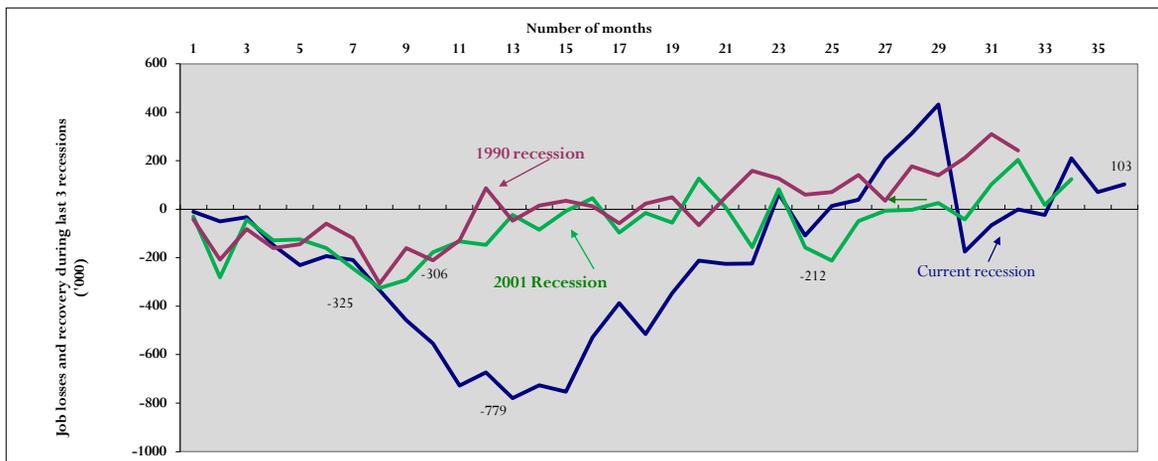
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The Economic Recession, Future Projections & Credentialing in the New Economy

Jason A. Tyszko

State of the Economy - Economic Recovery

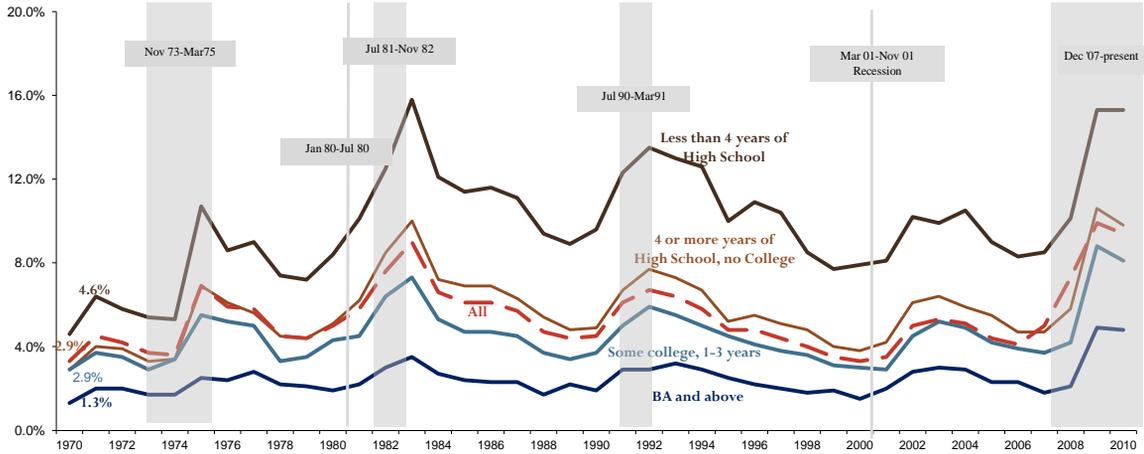
The worst of the recession is over. Non-farm payroll employment has slowly picked up with positive gains since October 2010.



Source: Georgetown University Center on Education and Workforce.

State of the Economy – Unemployment by Credential

Unemployment rates look very different based on postsecondary credentials.

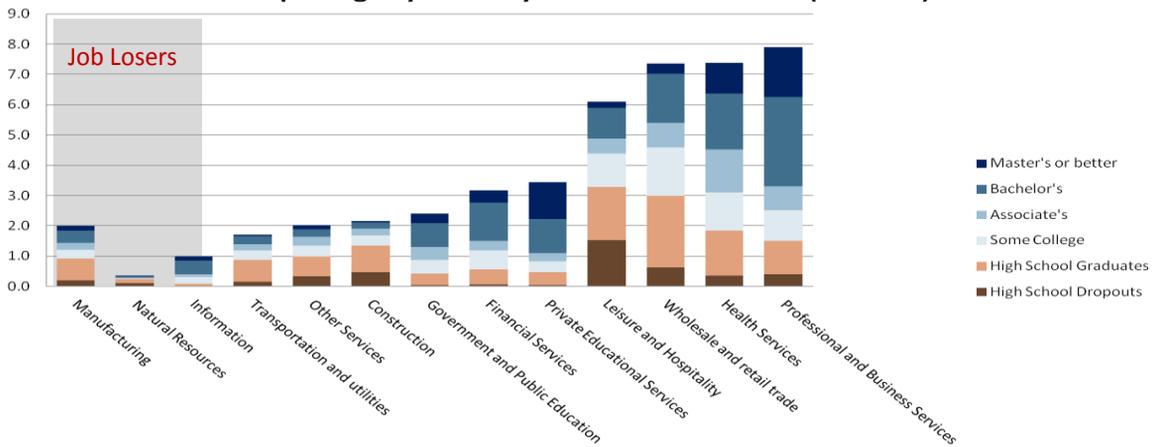


Source: Georgetown University Center on Education and Workforce.

State of the Economy – Projected Job Openings

Even in declining industries there will be job openings.

Job Openings by Industry and Education Level (Millions)



Source: Georgetown University Center on Education and Workforce.

State of the Economy – Summary

- ✓ The economy is both recovering and changing, which needs to feedback into how we understand our education and training programs.
- ✓ While we are in a recovery, the recovery is slow and we need to understand where the opportunities will become available.

The Talent Pipeline – Demand Driven Economy

In 1973, a high school diploma was the passport to the American Dream.

- 72% of the workforce of 91M had no more than a high school degree.

Post-secondary education is necessary to compete in the global economy.

- Between 1973 and 2007, we added 63 million jobs.
- Jobs held by those with no more than a high school education fell by 2M.

Economic forecasters widely agree that these trends will continue.

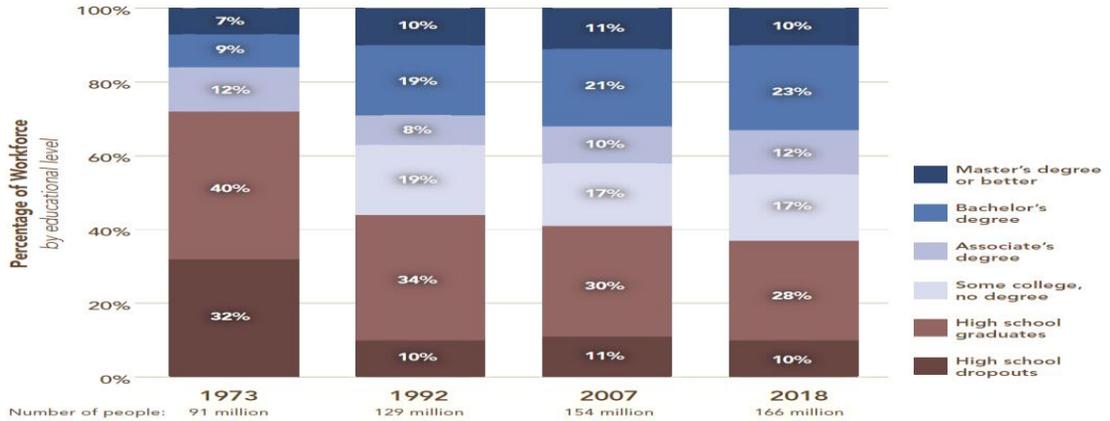
- The U.S. will need to produce 22M more postsecondary degrees by 2018, but we are likely to fall short.
- Illinois will demand over 319,000 STEM jobs by 2018; 93% of these jobs will require postsecondary education and training.

Source: Georgetown University Center on Education and the Workforce; Harvard University *Pathways to Prosperity Report*.

The Talent Pipeline – U.S. Degree Attainment

Demand for postsecondary education has increased, and will continue to increase during and after the recovery.

By 2018, about two-thirds of all employment will require some college education or better.
 Source: Authors' analysis of March CPS data, various years; Center on Education and the Workforce forecast of educational demand to 2018

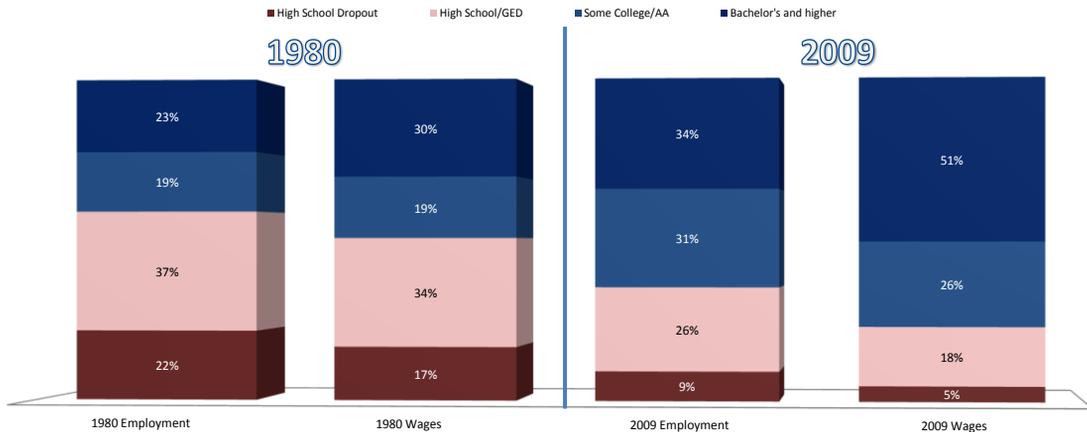


Source: March CPS data, various years; Georgetown University Center on Education and the Workforce forecast of educational demand to 2018

The Talent Pipeline – Wage Earnings by Degree

Postsecondary-educated workers now earn almost 80% of the nation's wages.

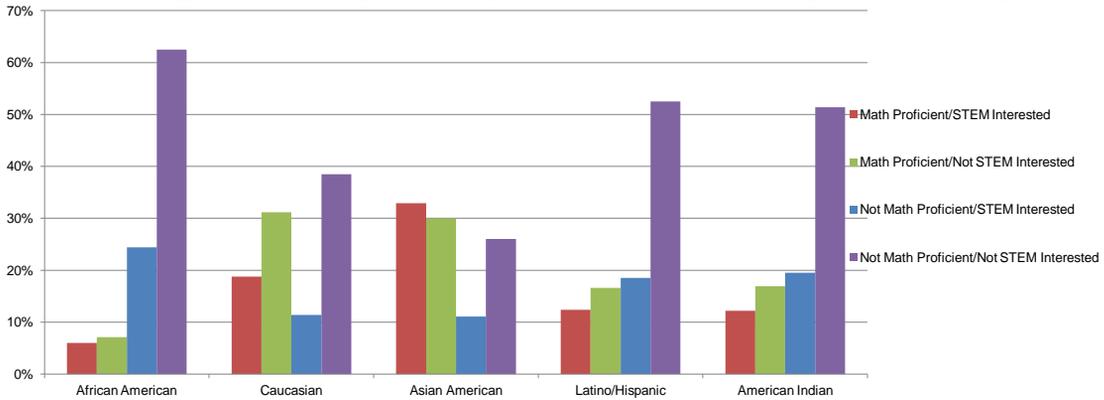
Wage and Employment Shares by Education (25-65)



Source: Georgetown University Center on Education and the Workforce

The Talent Pipeline – U.S. H.S. STEM Interest by Race

Despite two decades of reform, high school graduation rates have not changed much since the 1980s. The threat to our competitiveness is more apparent when we analyze 12th graders math proficiency and interest in STEM by race/ethnicity.



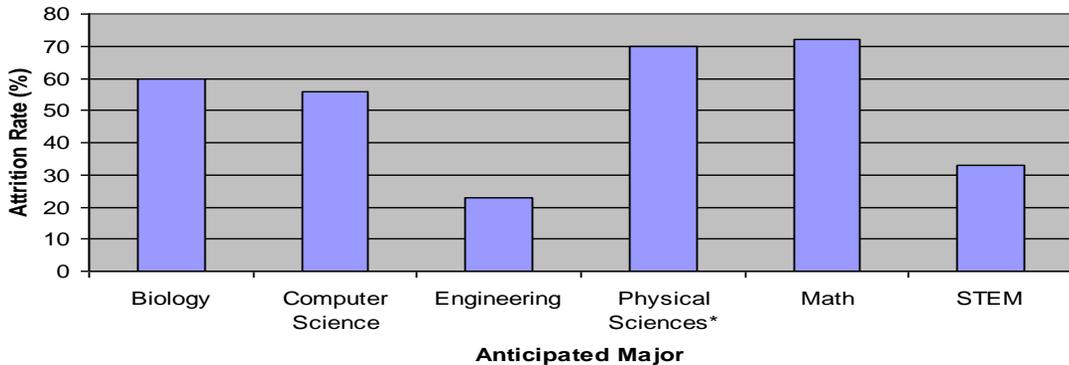
SOURCE: The Business-Higher Education Forum. (2011). *The STEM interest and proficiency challenge: Creating the workforce of the future.*

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The Talent Pipeline – STEM Attrition in Postsecondary

Once those students enroll in college, undergraduate STEM attrition by major is also substantial.



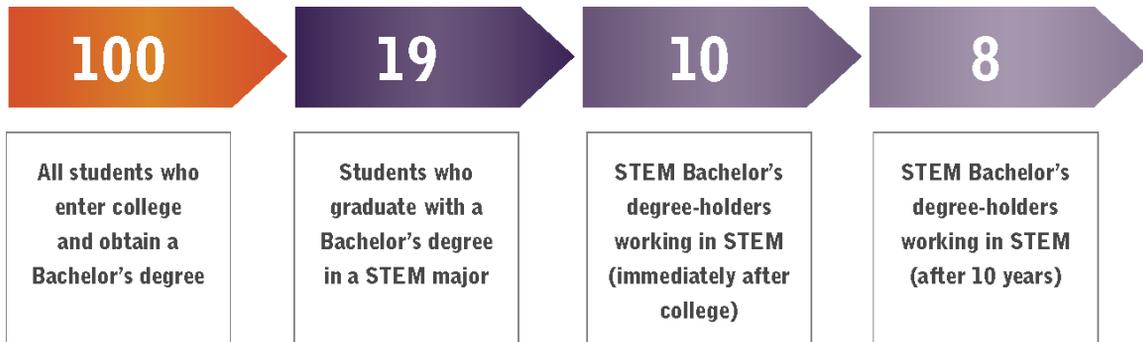
*includes Chemistry, Physics, Earth and Planetary Sciences

SOURCE: Koff, R., Molter, L., & Renninger, K.A. (2009). *Why Students Leave STEM Fields: Development of a Common Data Template and Survey Tool.* A report to the Alfred P. Sloan Foundation.

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The Talent Pipeline – STEM Transitions to Employment

Only about half of STEM college graduates choose to work in STEM careers.



SOURCE: Carnevale, T. (2011). *The STEM Workforce*. Presentation to the PCAST Working Group on STEM Higher Education, April 15, 2011.

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The Talent Pipeline – Skills Gap and Mismatch

- Currently there exists a mismatch between what current and future employers need and what prospective employees are prepared to do.
- U.S. employers will have 47 million job openings between 2010 and 2018, 30 million of which will require some form of postsecondary education. 14 million job openings will be in the “middle skill” category requiring either an associate’s degree or an industry credential.
- The skills gap is most acutely felt in STEM areas, including occupations in manufacturing, healthcare, information technology, R&D, etc...

Source: Georgetown University Center for Education and Workforce; “Beyond Home Ec: Vocational Programs are a Good Investment,” by Andrew P. Kelly (National Review)

The Talent Pipeline – IL Graduation Rates

More than 70% of Illinois students who graduate high school start some kind of advanced training or education within two years.

Yet for too many, the journey ends long before graduation day. They become college dropouts.

- Just over half of students who start 4-year bachelor's degree programs full-time finish in 6 years.
- Fewer than three out of ten students who start at community colleges full-time finish in 3 years.

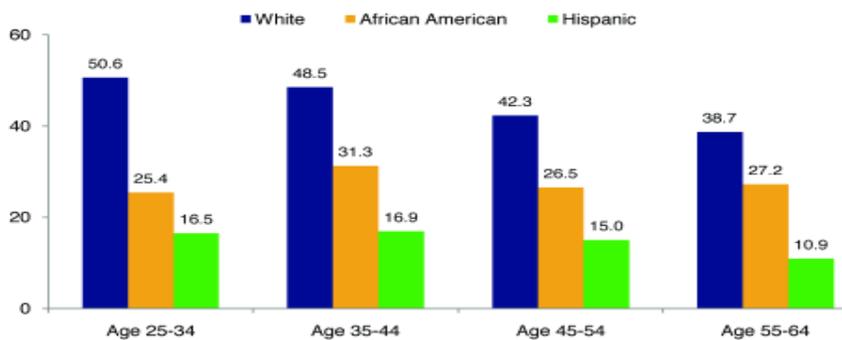
In Illinois, of every 100 9th grade students...

- 46 enter college the fall after graduating from high school.
- 11 graduate with a bachelor's degree in four years.
- 4 graduate with an associate's degree in three years.
- 43 percent of Illinois' young adults (ages 25-34) have a college degree.

Source: *Complete College America*

The Talent Pipeline – Education by Race in IL

Educational Attainment Key to Skilled Workforce



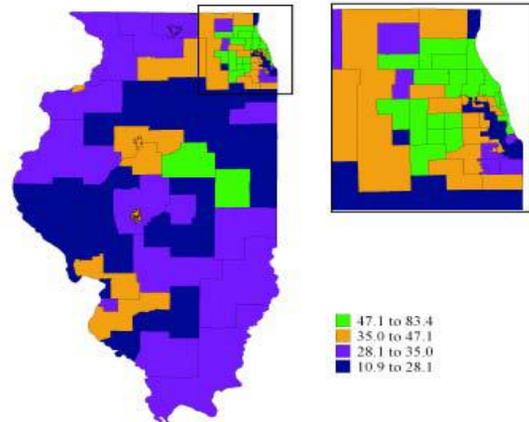
Percent of adults with associate's degree or higher, by age and race/ethnicity, 2006. Increasing college degrees among all Illinois students will be crucial for Illinois to meet the workforce needs of the future.

Source: *IBHE Public Agenda for College and Career Success*

The Talent Pipeline – Education by Region in IL

Percent of population age 25-64 with an associate's degree or higher, 2006

Regional variations in college credentials show large gaps – and opportunities – in raising the level of educational attainment in Illinois.



Source: IBHE Public Agenda for College and Career Success

The Talent Pipeline – Summary

- ✓ The vast majority of job opportunities in the future will require some level of postsecondary education or training.
- ✓ However, our current talent pipeline is stagnating in terms of high school completion and is facing high attrition rates in postsecondary education.
- ✓ In addition, the talent pipeline is compromised further by lack of equity by age and race with significant regional inequities.
- ✓ Finally, the system is not only failing to produce enough credentials by level, both those credentials attained are not aligned with where economic growth is anticipated to occur.

IL Pathways Initiative – Background

- First advanced as part of the State of Illinois' Round 1 and 2 Race to the Top proposals as a college and career readiness strategy for STEM.
- They were designed to build off of best practices developed under ISBE's and ICCB's career and technical education programs.
 - Increase student achievement.
 - Improve graduations rates.
 - Improve transition rates to college and employment.
- While Illinois was not selected as a Round 1 or 2 Race to the Top state, the need for reform persisted. Public and private partners continued to collaborate to advance the Illinois Pathways Initiative.

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IL Pathways Initiative – Background

- The Illinois Pathways Initiative provides a strategy to help achieve the P-20 Council's goal of 60 percent of all Illinois residents attaining a high-quality academic degree or industry recognized certificate or credential by 2025.
- The Illinois Pathways Interagency Committee (IPIC) was established to coordinate planning between the Illinois' lead education and economic development agencies (i.e. DCEO, ISBE, ICCB, IBHE, ISAC and IDES).
- Illinois is now the recipient of Race to the Top Round 3 grant.

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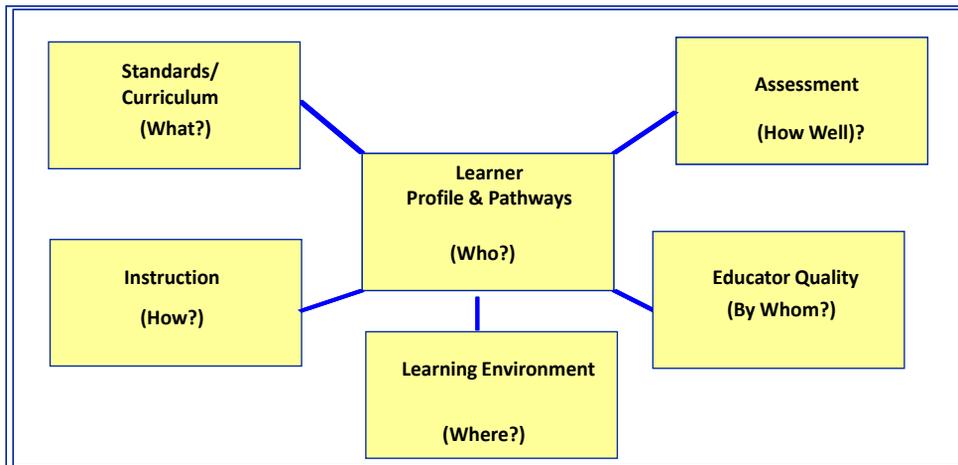
Illinois Race to the Top Phase 3 Award: Accelerating the State's Education Reform Agenda

Susie Morrison
Illinois State Board of Education

The Award

1. ED announced on 12/23/11 that Illinois will receive \$42.8 million.
2. Phase 3 funding only for the states that were high-scoring finalists in the 2010 RTTT competition.
3. Total of 7 states receiving funding through RTTT3
4. 4-year grant period
5. Requirement that 50% of award be allocated to school districts.
 - \$21.4 million to districts that agree to comprehensive commitments ("Participating LEAs").
 - \$21.4 for supporting state activities.

Illinois RTTT 3 Strategy Components: Learners at the Center



Overarching RTTT3 Objectives

1. Participating LEAs comprehensively address the RTTT3 strategy components, leading to dramatic student growth
2. Participating LEAs serve as “reform exemplars” for the entire State
3. Build capacities for statewide implementation of key reforms

Learner Profile and Pathways

Participating LEA Expectations	State Supports
<ul style="list-style-type: none"> Establish an individual learning plan program, commencing in 7th grade, that aligns to a Programs of Study model in the predominant feeder schools for high schools implementing STEM Programs of Study <i>For LEAs serving grades 9-12:</i> Establish two or more Programs of Study promoting critical STEM application areas 	<ul style="list-style-type: none"> Illinois Shared Learning Environment provides platform for Individual Learning Plan and Program of Study supports STEM Learning Exchanges and Pathways Resource Center support Programs of Study in critical STEM areas College and Career Readiness Programs supports Program of Study alignment to postsecondary education

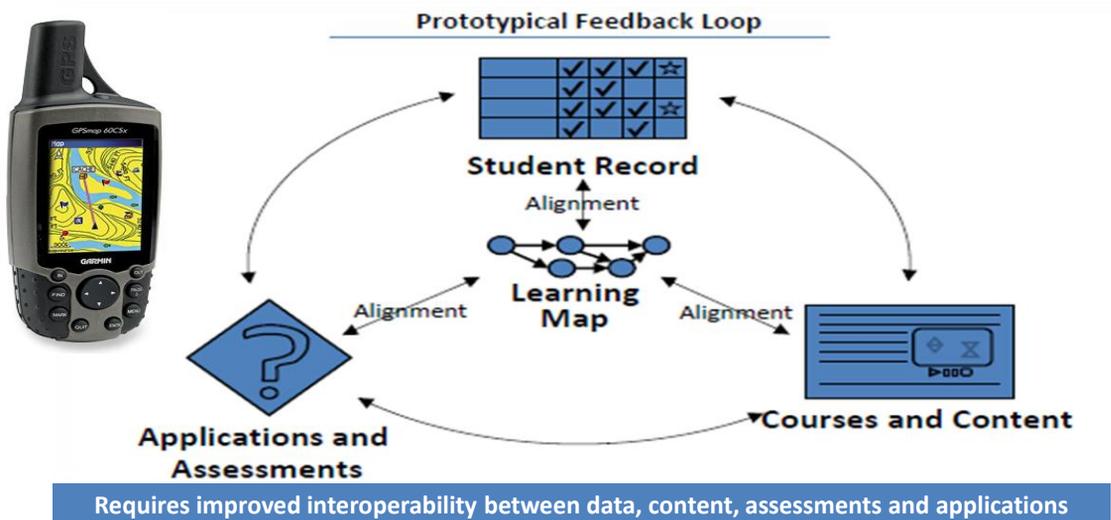
RTTT 3 Budget for Learner Profile and Pathways

- STEM Learning Exchanges: \$2,300,000
- Illinois Pathways Resource Center: \$875,000
- College & Career Readiness Program: \$1,000,000

Other Aligned RTTT 3 Priorities

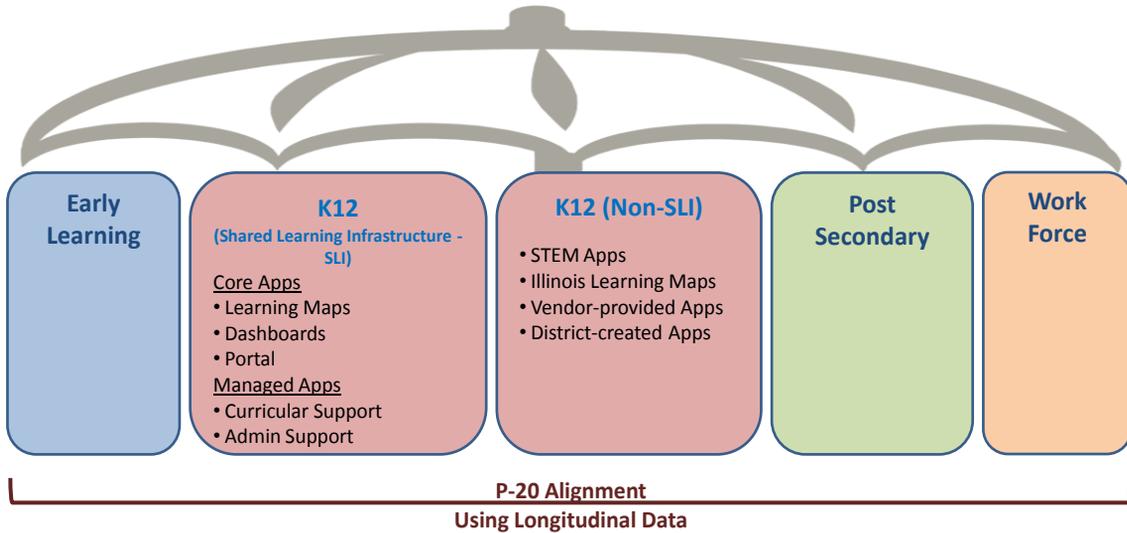
- Intensive focus on Common Core State Standards Implementation
- Support local assessment systems to support standards implementation, improving instruction, and measuring growth
 - Including assessments to support P-20 STEM Programs of Study (employability and pathway/technical assessments)
- Induction and mentoring supports targeted to STEM educators
- Illinois Shared Learning Environment: IT infrastructure to support the State's P-20 educational and workforce development objectives

Greater Personalization Through the Illinois Shared Learning Environment

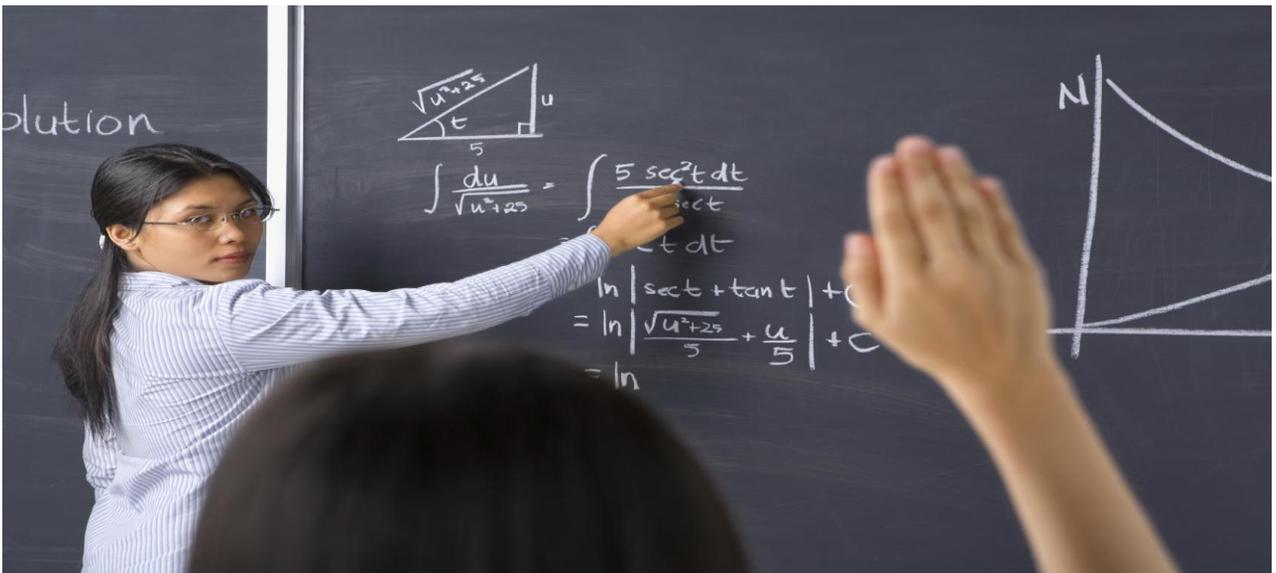


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Illinois Shared Learning Environment (ISLE)



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Bottom Line:
Preparing all Illinois Students for College and Careers

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P-20 STEM Programs of Study and STEM Learning Exchanges

Jason A. Tyszko

IL Pathways Initiative – P-20 STEM Programs of Study

Defining P-20 STEM Programs of Study

“P-20 STEM Programs of Study are organized around a career cluster and feature a series of orientation and advanced pathway courses across education institutions that are accompanied by opportunities for students to enrich their learning through work-based learning experiences as well as demonstrate their understanding through assessments and the attaining of early college credit and industry-recognized credentials.”

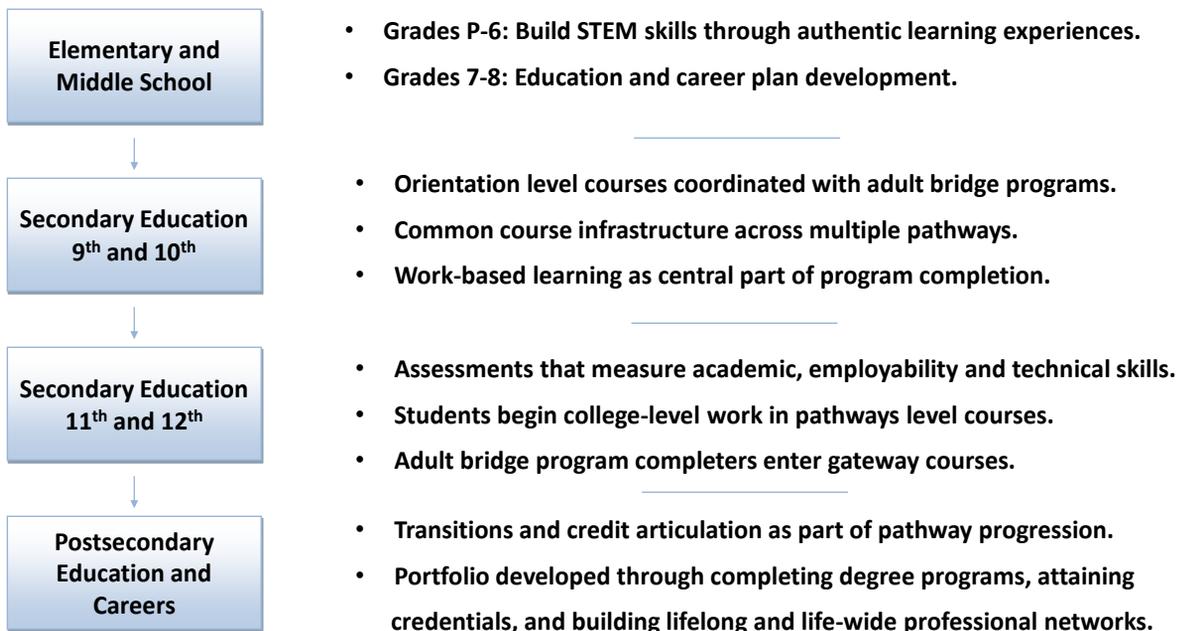
IL Pathways Initiative – P-20 STEM Program of Study Components

- **Personalization** – Education and career plan aligned to academic and career interests.
- **Applied Learning** – Access to work-based learning opportunities.
- **College & Career Readiness Assessments** – 1) Academic, 2) Career, and 3) Technical.
- **Orientation Courses** – Common foundational skills across clusters, called “orientation” at high school and “bridge” for adults.
- **Shared Pathway Courses** – Common pathways skills and reduced switching costs.
- **Early College** – Dual credit in “gateway” courses to improve transfer and reduce costs.
- **Diverse Delivery System** – Build program capacity through academic core, CTE courses, electives, regional centers, virtual courses, and college courses.

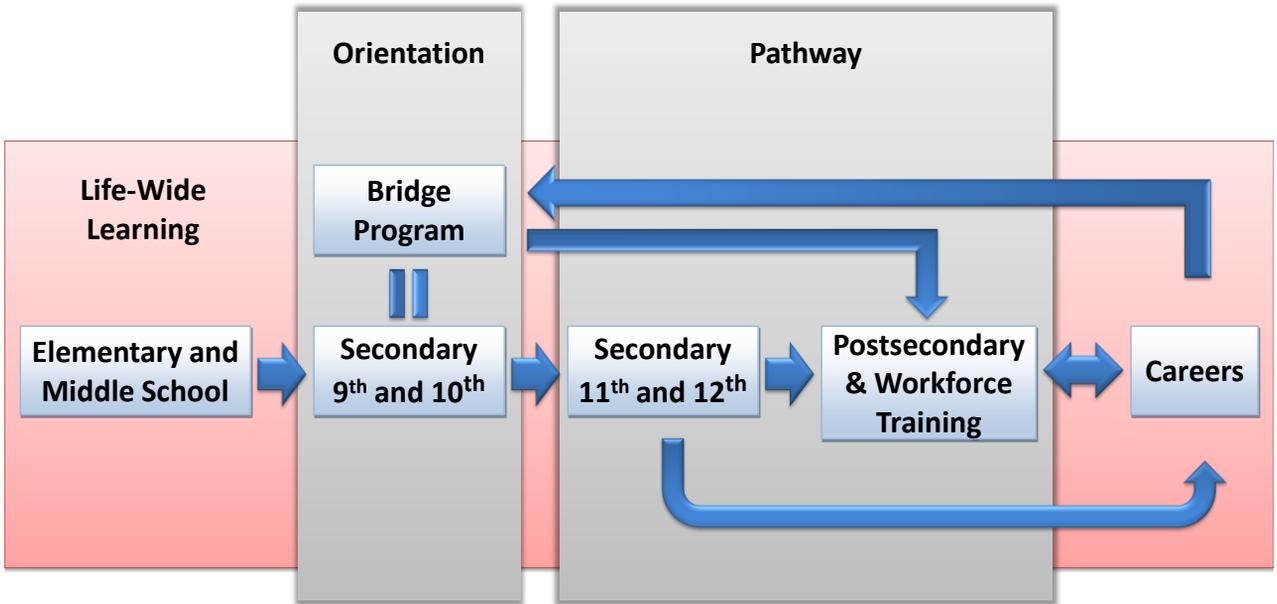
Note: P-20 STEM Programs of Study also fully align to the design elements for CTE Programs of Study, including Leadership, Organization & Support; Access, Equity & Opportunity; Alignment & Transition; Enhanced Curriculum & Instruction; Professional Preparation & Development; and Program Improvement & Accountability.

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IL Pathways Initiative – P-20 STEM Program of Study: Key Features



IL Pathways Initiative – P-20 STEM Program of Study On-Ramps



IL Pathways Initiative – P-20 STEM Programs of Study Clusters

Nine STEM Programs of Study consistent with the National Career Cluster Framework (Note: Energy is a new cluster to be explored).

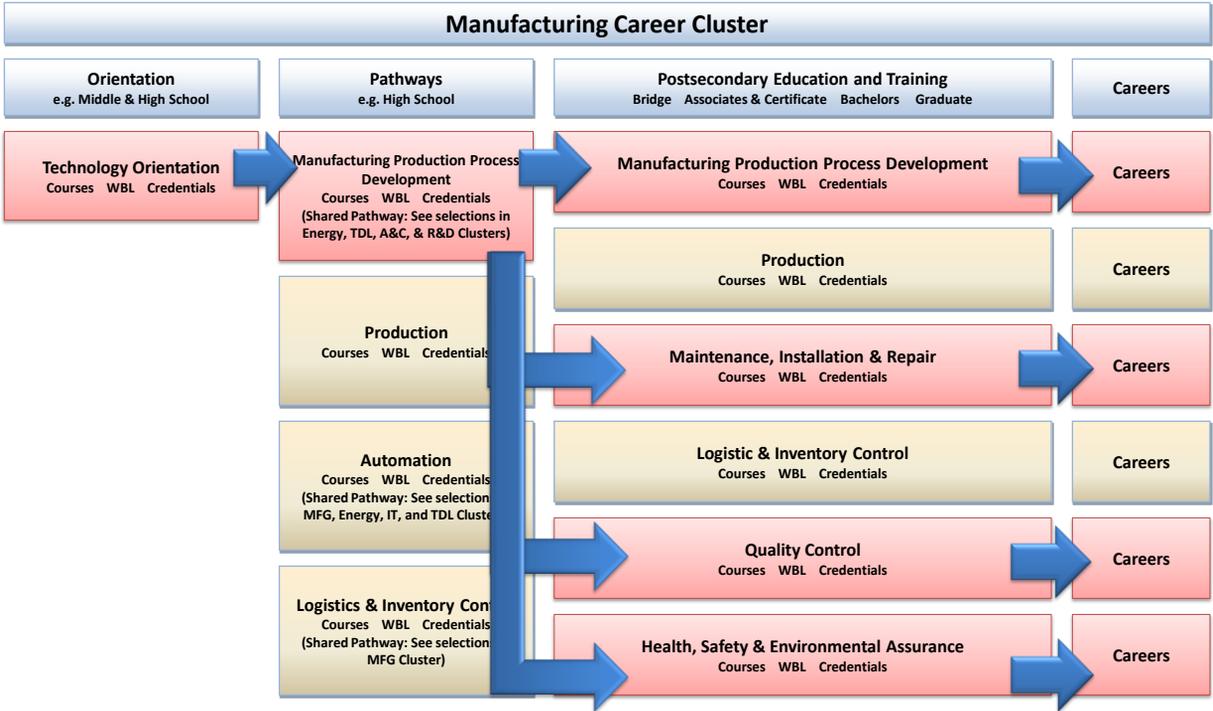


IL Pathways Initiative – P-20 STEM Programs of Study Working Groups

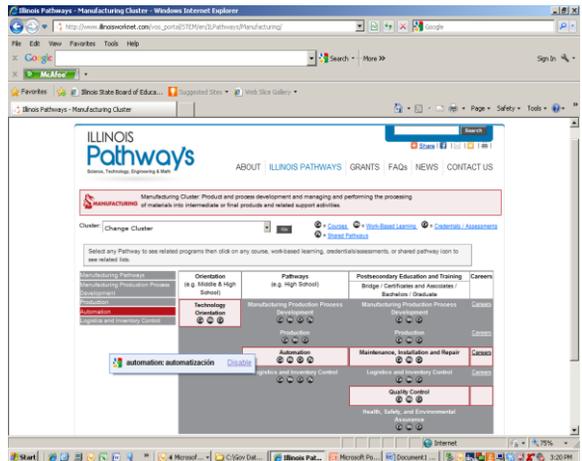
- Public-private working groups developed statewide models for each of the nine P-20 STEM Programs of Study.
- These models establish a series of shared definitions that will support statewide networks and facilitate connections between public-private partners in each of the nine areas. Components of the reports include:
 - Career Profiles (Demand)
 - Baseline Analysis (Supply)
 - P-20 Course Sequence and Definition Model (Course Outline)

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Manufacturing Career Cluster			
Orientation e.g. Middle & High School	Pathways e.g. High School	Postsecondary Education and Training Bridge Associates & Certificate Bachelors Graduate	Careers
Technology Orientation Courses WBL Credentials	Manufacturing Production Process Development Courses WBL Credentials (Shared Pathway: See selections in Energy, TDL, A&C, & R&D Clusters)	Manufacturing Production Process Development Courses WBL Credentials	Careers
	Production Courses WBL Credentials	Production Courses WBL Credentials	Careers
	Automation Courses WBL Credentials (Shared Pathway: See selections in MFG, Energy, IT, and TDL Clusters)	Maintenance, Installation & Repair Courses WBL Credentials	Careers
	Logistics & Inventory Control Courses WBL Credentials (Shared Pathway: See selections in MFG Cluster)	Logistic & Inventory Control Courses WBL Credentials	Careers
		Quality Control Courses WBL Credentials	Careers
		Health, Safety & Environmental Assurance Courses WBL Credentials	Careers



IL Pathways Initiative – www.illinoisworknet.com/ilpathways



IL Pathways Initiative – STEM Learning Exchanges

Defining STEM Learning Exchanges

“STEM Learning Exchanges are a new, innovative public-private education partnership that is organized to support local implementation of P-20 STEM Programs of Study by coordinating and reducing the transaction cost among statewide networks of education partners, businesses, industry associations, labor organizations, and other organizations. Learning Exchanges are organized by career cluster and work to coordinate planning and investment, aggregate resources, and review talent supply-chain performance.”

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IL Pathways Initiative – Learning Exchange Members

Who makes up a STEM Learning Exchange?

- Employers and employer-led organizations
- Labor unions
- Professional associations
- Secondary and postsecondary teachers and faculty
- Students and student organizations
- Community colleges and universities
- School districts and regional
- Economic and workforce agencies
- STEM education experts
- Federal labs and research centers
- Local workforce investment boards
- Museums and non-profit organizations
- Community-based organizations

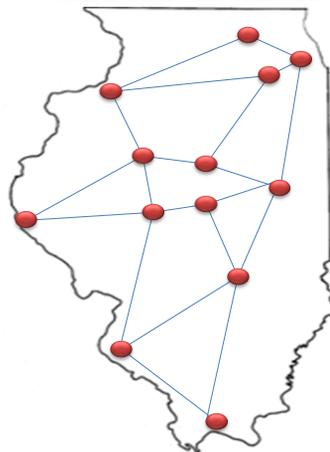
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IL Pathways Initiative – Learning Exchange Functions

1. Provide curriculum resources.
2. Expand access to classroom and laboratory space, equipment, and related educational resources.
3. Support student organizations and their major activities.
4. Provide internships and other work-based learning opportunities.
5. Sponsor challenges and provide project management resources.
6. Provide professional development resources for teachers and school administrators.
7. Provide career development and outreach resources.
8. Review P-20 Program of Study model and transitions to post-secondary academic and training programs.
9. Review talent pipeline performance.

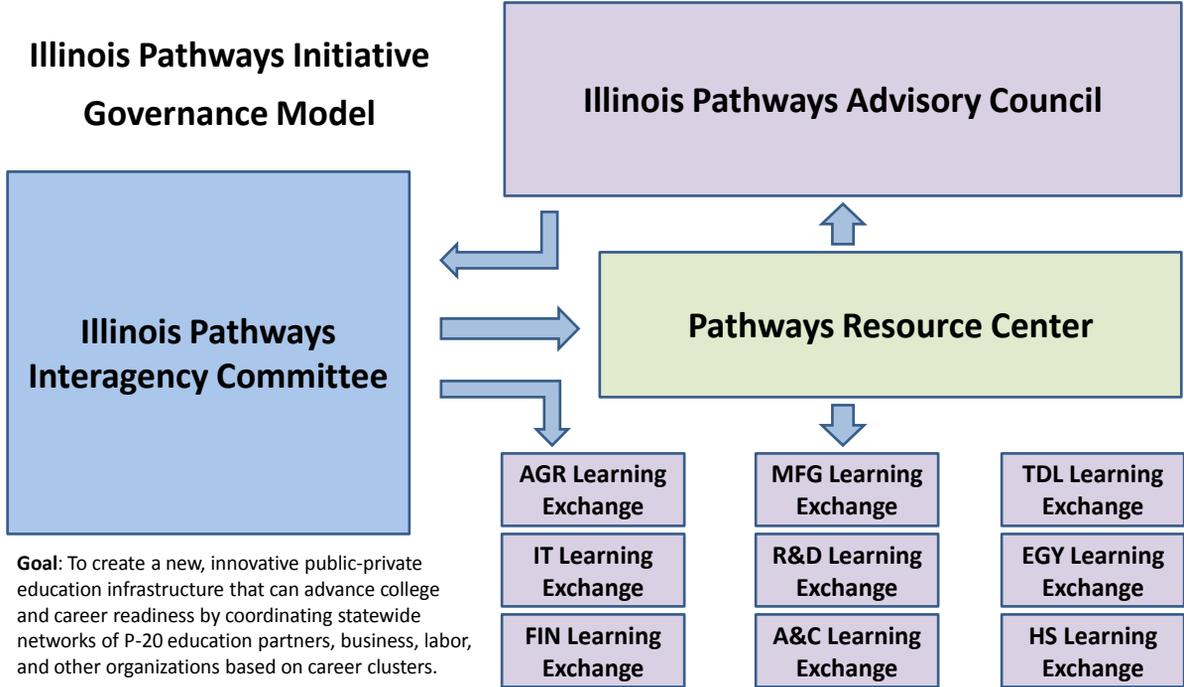
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IL Pathways Initiative – Learning Exchange Networks

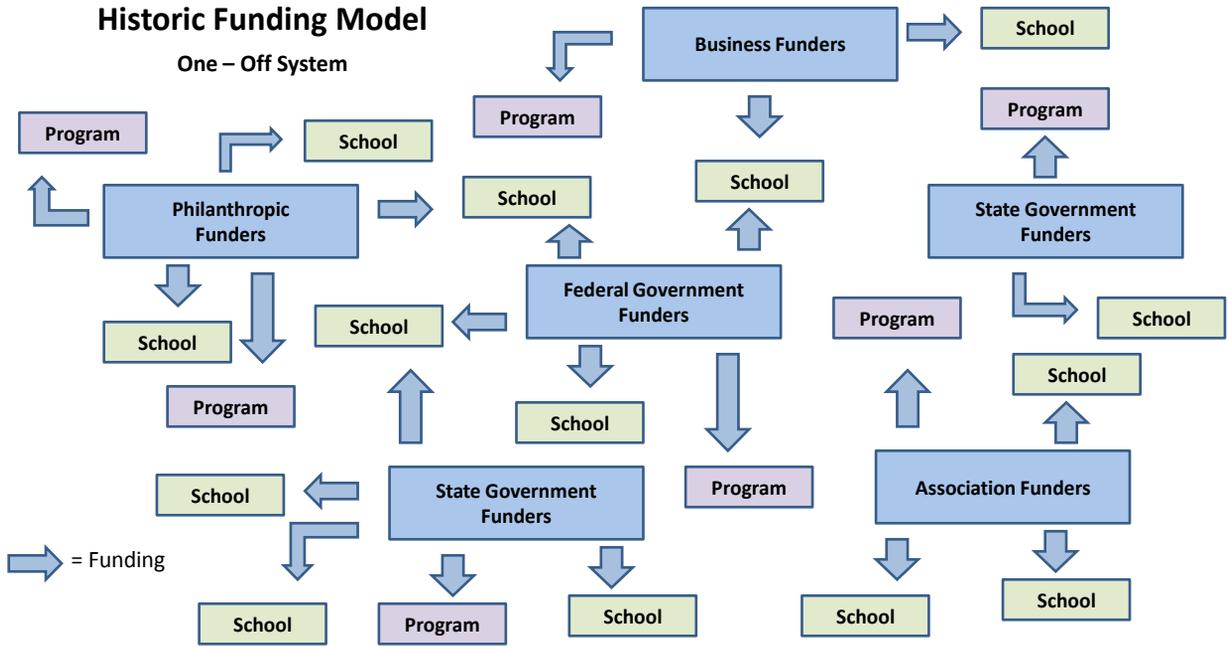


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Illinois Pathways Initiative Governance Model

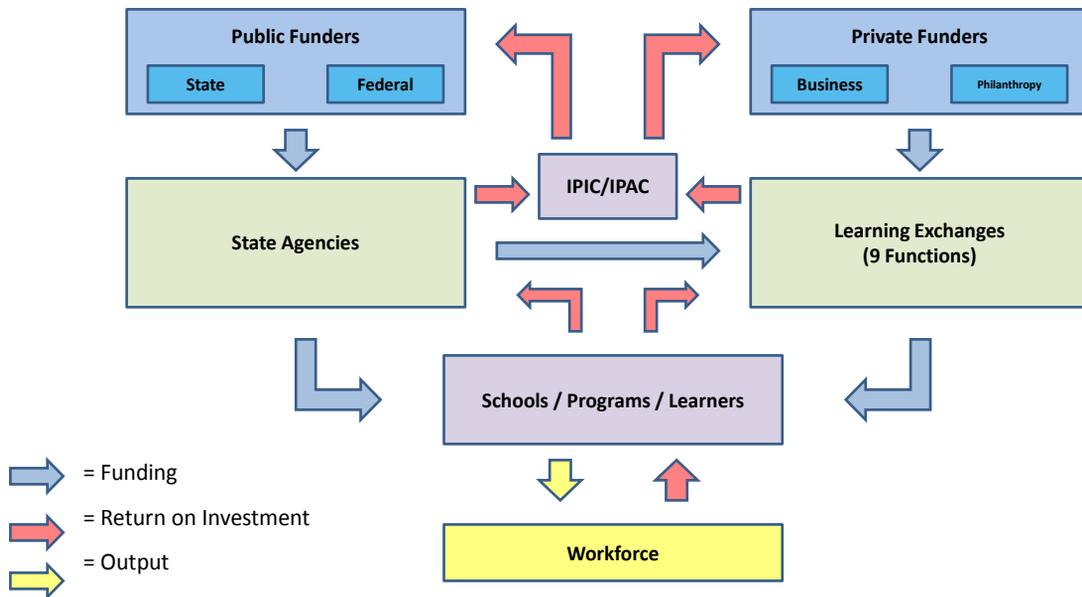


Historic Funding Model One – Off System



Illinois Pathways Initiative Funding Model

Systemic



IL Pathways Initiative – STEM Learning Exchange Selection Process

- The State of Illinois plans to launch the first STEM Learning Exchanges in the fall using Race to the Top funds. The process began with the posting of an RFI by ISBE on February 7th.
- \$2.3M has been set aside to provide planning and implementation grants targeted to the nine identified STEM clusters.
 - Up to \$500,000 for implementation grants; three year strategic plans.
 - Up to \$50,000 for planning grants; one year scope of work.
 - Required 100 percent cash or in-kind matching contribution.

IL Pathways Initiative – STEM Learning Exchange Selection Process

Important Dates	Activity
March 16 th	RFI responses due.
March 19 th	Public posting of all responses.
By April 23 rd	IPIC designates Planning and Implementation Sectors and RFSP is released.
June 20 th	Planning and Implementation proposals due.
August	IPIC makes STEM Learning Exchange selections.
September	Grantees begin convening as a STEM Learning Exchange.

IL Pathways Initiative – STEM Learning Exchange Selection Process

- Request for Information Response Requirements:
 - Identify the STEM cluster targeted.
 - Designation of a primary contact person.
 - Description of the respondent's organization and corporate status.
 - Description of experience and qualifications to serve as lead entity.
 - Identification of stakeholder support.
- To access the Request for Information documentation please visit: www.illinoisworknet.com/ilpathways.

IL Pathways Initiative – STEM Learning Exchange Selection Process

Anticipated Implementation Grant Work Plan Requirements	Anticipated Planning Grant Work Plan Requirements
Establish the organizational structure of the Learning Exchange.	Undertake pre-implementation planning activities.
Develop a three-year strategic plan and budget.	Promote stakeholder engagement.
Develop a sustainability plan for continued operation beyond 2015.	

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Q&A Panel Session

Jeff Mays
Jon Furr
Elaine Johnson

Bill Symonds
Lazaro Lopez
Mark Williams

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Thank you for participating

To learn more visit

www.illinoisworknet.com/ilpathways