Illinois Pathways Initiative

National Association of State Directors of CTE Consortium
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Illinois Pathways Initiative Background

- STEM Learning Exchanges were 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 education.
- They were designed to build off of best practices and partnerships developed under ISBE's and ICCB's innovative career and technical education programs.
- While Illinois was not selected as a Race to the Top state, the need for reform persists. Public and private partners continued to convene and collaborate to advance the Illinois Pathways Initiative, including the scaling-up of P-20 STEM Programs of Study and the formation of STEM Learning Exchanges.
- The P-20 Council's College and Career Readiness Committee recently adopted a framework that identifies the continuing need to develop a new, public-private infrastructure for employer engagement and partnership.
- 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.

P-20 STEM Programs of Study

Promote models that are designed to: 1) improve academic achievement,
2) increase graduation rates, and 3) improve transition rates to
postsecondary education and employment...

Scale-up Programs of Study starting in nine STEM application areas with alignment and articulation to post-secondary institutions and career opportunities.

- A model for restructuring high schools that focuses on college and career readiness and 21st century skills through adoption of the Common Core aligned curriculum.
- Expands the Program of Study model developed under the leadership of the Illinois State Board of Education's and Illinois Community College Board's Career and Technical Education programs.
- Enables students to choose a focused P-20 Program of Study related to their academic or career interests that includes a fully articulated curriculum across secondary and postsecondary education.
- Improves access and success for underrepresented populations in STEM fields such as women, minorities and low-income students.
- Promotes public-private partnerships between schools, communities, and business and industry.

P-20 STEM Programs of Study: Priority Clusters

Nine STEM Programs of Study—consistent with the National Career Cluster Framework—are identified in the RTTT application and will be supported by STEM Learning Exchanges (Note: Energy is a new cluster to be explored).

- **1. Agriculture, Food and Natural Resources**: development, production, processing, distribution, of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources;
- **2. Energy**: developing, planning and managing the production of energy including renewable energy and clean coal technology and its distribution through smart grid technologies;
- **3. Manufacturing**: product and process development and managing and performing the processing of materials into intermediate or final products and related support activities;
- **4. Information Technology**: designing, developing managing, supporting and integrating hardware and software system;
- **5. Architecture and Construction**: designing, planning, managing, building, and maintaining the built environment including the use of green technologies;
- **6. Transportation, Distribution and Logistics**: planning, management and movement of people, materials and goods across all transportation modes as well as maintaining and improving transportation technologies;
- **7. Research and Development**: scientific research and professional and technical services including laboratory and testing services, and research and development services;
- **8. Health Sciences**: planning, managing and providing therapeutic, diagnostic, health informatics, and support services as well as biomedical research and development; and
- **9. Finance**: securities and investments, business finance, accounting, insurance, and banking services.

P-20 STEM Programs of Study: Components

- **Personalization** Assists teachers, parents, students, and counselors in creating personalized plans of study for a diverse student body that builds a P-20 portfolio.
- **Applied Learning** Real-world skills and connections to career pathways through applied learning and access to a continuum of work-based learning opportunities.
- College & Career Readiness Assessments Measured through a network of assessments, including 1) academic, 2) employability, and 3) pathways.
- **Broad Orientation** Courses the introduce students to one or multiple clusters based on common foundational skills, e.g. Technology Orientation.
- Shared Pathways Shared pathways across cluster areas to enable personalization
 of learning, build capacity and reduce switching costs.
- **Early College** In advanced pathway courses students earn dual credit, advanced placement and articulated credit to improve transitions and reduce cost.
- **Diverse Delivery System** Builds program capacity through academic core, CTE courses, electives, regional centers, virtual courses, and college courses.

P-20 STEM Program of Study: Key Features

Elementary and Middle School

Secondary Education 9th and 10th

Secondary Education 11th and 12th

Postsecondary Education and Careers

- Grades P-6: Build STEM skills through authentic learning experiences.
- Grades 7-8: Career development and Explore assessment which assist with educational plan based on academic and career interest.
- Strong focus on orientation level courses and career development.
- Common course infrastructure across multiple pathways.
- Assessments that measure academic, employability and pathway skills.
- Work-based learning as central part of program completion.
- Students begin college-level work in pathways by junior year,
 e.g. dual credit, advanced placement and articulated credit.
- Coordination with adult bridge programs.
- Transitions and credit articulation as part of pathway progression.
- Portfolio through completing degree programs, attaining stackable credentials, and building lifelong and lifewide professional network.

P-20 STEM Program of Study: Design

Grade

Core Curriculum

Electives

Program of Study Pathway Courses

Work-Based Learning

Elementary and Middle School

EXPLORE Assessment and Education Plan Development

Career
Awareness
and
Exploration

Secondary Education 9th and 10th

Secondary Education 11th and 12th

Post-Secondary Education and Careers Required
English,
Language
Arts, Math,
Science,
Social
Science,
and
Physical
Education
Courses

Recommended
Science,
Social
Science,
Humanities,
Art, and
Foreign
Language
Courses

Orientation Level Courses across
Multiple Career Pathways

Placement Exam for Dual Credit Courses: COMPASS and PLAN

Focused Career Pathway

Development – Academic and

CTE Courses

Continuation of Career Pathway
Development and Acquisition of
Stackable Credentials (i.e.
Certifications and
Certificates/Degrees)

Mentor, Job Shadow

Mentor, Job

Career

Workshop,

Shadow, Internship, Sponsored PBL Challenge

Mentor, Internship, Sponsored PBL Challenge

STEM Learning Exchange Overview

Goal: To create a new, innovative public-private education infrastructure that can advance college and career readiness in STEM disciplines by coordinating statewide networks of P-20 education partners, business, labor, and other organizations based on career clusters.

- Learning Exchanges are designed to support local implementation of P-20 STEM Programs of Study where students can pursue programs that connect to their academic and career interests.
- Learning Exchanges coordinate nine functions; including planning, resource sharing, connections to professionals, managing transitions, and evaluation of results.
- A separate Learning Exchange is planned for each of the nine STEM areas, which align with the state's economic development objectives.
- To be hosted on the proposed cloud computing-based Learning and Performance Management System (LPMS) as a web-based portal linked to shared data systems.
- DCEO is currently working with ISBE to identify how Race to the Top Round 3 can support the formation of the first round of Learning Exchanges.

Learning Exchanges: 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
- Universities
- School districts and local education agencies
- State government P-20 education, economic development and workforce agencies

- STEM education researchers and experts
- Federal laboratories and research centers
- Local workforce investment boards
- Museums and related non-profit organizations
- Community-based organizations serving at risk student populations and other student populations underrepresented in STEM programs of study.

Learning Exchanges: Roles and Functions

- **1. Provide e-learning curriculum resources**, including on-line courses, assessments and feedback systems, reference materials, databases, and software tools.
- 2. Expand access to classroom and laboratory space, equipment, and related educational resources necessary to support programs of study through regional partnerships and other strategies.
- **3. Support student organizations and their major activities**, including conferences, internships and professional networking experiences, competitions, and community projects that build leadership, communication and interpersonal skills and provide professional and peer support networks.
- **4. Provide internships and other work-based learning opportunities** that connect students with adult mentors.
- **5. Sponsor challenges and project management resources** for students to work in collaborative teams addressing real-world interdisciplinary problems.
- 6. Provide professional development resources for teachers and school administrators integrated and aligned across middle school, high school, and community college instruction, including STEM externships, support for web-based networks, and integrated professional development for academic and CTE instructors.
- **7. Provide career development and outreach resources** to expand awareness of STEM-related programs and careers to K-12 students.
- 8. Provide tools and resources to assist students and schools with implementing **personalized education plans and transitions to post-secondary academic and training programs**, including establishing course articulation and dual credit opportunities.
- **9. Review performance** of STEM-related Programs of Study through performance reporting and work with partners to continuously improve performance.

Next Steps: P-20 STEM POS Working Groups

Work with public-private partners and stakeholders to develop Programs of Study models in priority STEM areas that will serve as implementation roadmaps.

- The goal of each working group is to develop a course sequence within a designated STEM area and provide a general model that reflects all of the P-20 components of a STEM Program of Study.
- This model is designed to establish a series of shared definitions that will support statewide networks and facilitate connections between statewide public-private partners in each of the nine areas. Components of the report include:
 - Career Profiles
 - Baseline Analysis
 - P-20 Course Sequence and Definition Model
 - Cluster Support Resources
- The final report will provide a guide for structuring the future STEM Learning Exchanges, which are charged with supporting Program of Study implementation.
- Working groups convened this past April and will continue through the summer.

Illinois Pathways Initiative

Preliminary Vision for a Governance Structure

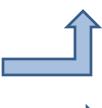
Illinois Pathways Interagency Committee

- Established by IGA
- Membership: DCEO, ISBE, ICCB, IBHE, ISAC, IDES
- Functions:
 - Select Learning Exchanges
 - Data sharing across education and workforce systems
 - Establish Pathways Resource Center
 - Establish Illinois Pathways Advisory Council
 - Align programs and policies to support Pathways Resource Center and Learning Exchanges
 - Coordinate with LPMS

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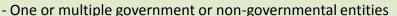
Illinois Pathways Advisory Council

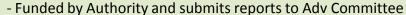
- Membership: IPIC, Learning Exchanges, P-20 Council, Business, and others
- Responsibilities:
 - Advises Agencies, Governor, and General Assembly
 - Advises Pathways Resource Center on projects
 - Submits annual talent pipeline reports and Learning Exchange benchmark reports to Governor and General Assembly
 - Plans annual STEM/Learning Exchange project sharing event





Pathways Resource Center





- Categories of service:
 - External Outreach
- Funding Center
- Technology Platform
- Performance Management





Learning Exchanges

- Membership: Broad public-private partners, including P-20 education institutions, industry, labor, museums, and community based organizations
- Selected by IPIC through submission of a 3 years strategic plan
- Submits annual talent pipeline and benchmark reports to IPAC
- Coordinates 9 Functions:
 - 1. E-Learning Resources

5. Sponsor Challenges

- 2. Regional Resources & Assets
- 3. Student Organization Supports
- 4 Work-Based Learning Experiences
- 6. Professional Development
- 7. Career Development
- 8. Education & Career Planning
- 9. Review Performance

Next Steps: Launching the STEM Learning Exchanges

The State of Illinois plans to solicit the first STEM Learning Exchanges in the fall.

- A separate Learning Exchange is planned for each of the nine STEM application areas, though priority will be given to areas based on the following:
 - Completion and support of statewide P-20 Program of Study framework;
 - Economic development potential and need;
 - District survey results;
 - Statewide public-private partner readiness; and
 - Funding availability
- Strategic review process:
 - Establish the organizational structure of the Learning Exchange, including a fiscal agent.
 - Identify and recruit steering group representatives.
 - Develop a three year strategic plan and budget to carry out the nine major functions of a STEM Learning Exchange through the 2012-15 school years.
 - Develop a sustainability plan for continued operations beyond 2012-15 that aligns with permanent governance structure.