Designing education toward the future of work
Why are we doing this work?

The non-profit Lab designs and tests new school-to-work and higher education models to address **affordability**, **relevance**, and **portability** in a rapidly changing knowledge economy.
FutureState

Target areas where the Lab is building out design visions

- Micro-credentialing
- 21st Century Skills
- Alternative Career Pathways
- Student & Faculty Engagement
- Wrap-around services for DIY learners
- Building Innovative Leadership Capacity
2016-17: Building Out the Suite

Employers and researchers helped us identify how to frame the 21st century skills that matter most.

**Badges should be:**
- Rigorous
- Transparent
- Assessable
- Simple
- Scalable
- Machine-Readable
- Portable
Integrating Learning from Different Settings

An intentional, transformative Learning Journey

Classroom
Work
Extracurricular
Apprenticeship
Imagine a world with no resumes...

**EDUCATION**

<table>
<thead>
<tr>
<th>Year</th>
<th>Degree</th>
<th>Institution</th>
<th>GPA (in parentheses)</th>
<th>Advisor</th>
<th>Research Interests</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 2018 (Expected)</td>
<td>Master of Science in Environmental Science &amp; Policy</td>
<td>George Mason University, Fairfax, VA</td>
<td>4.00 / 4.00</td>
<td>Daniel Sklarew</td>
<td>Environmental chemistry, wetland ecology, urban ecology</td>
</tr>
<tr>
<td>May 2015</td>
<td>Bachelor of Arts in Chemistry</td>
<td>University of Virginia, Charlottesville, VA</td>
<td>4.00 / 4.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RELEVANT EXPERIENCE**

**Green Iowa AmeriCorps, Dubuque, IA**

Marketing Coordinator

- Served the community of Dubuque through volunteer service to help Iowans become more energy efficient
- Collaborated with and supported the Sustainable Dubuque government initiative, including PM 2.5 research with U. of Iowa
- Designed educational materials concerning energy efficiency, composting, & other sustainability issues

**House Committee on Natural Resources - Democrats, Washington, D.C.**

Intern

- Provided policy & legislative history research using Lexis, CRS, and Congress.gov
- Developed talking points, arguments, graphs, and witness questions for Committee hearings and markups
- Wrote and formatted memos, summaries, & fact cards for informing Representatives and other staff members
A world where Stephanie has to figure out how to impress anonymous keyword algorithms to get through job filters to the interview stage.
In a world with “keyword hiring” world, technical skills may be straightforward to document, but soft skills are still poorly understood by employers—as is the specific value of a liberal arts degree.

- **Critical Thinking**
  - Clarity
  - Synthesis
  - Rigorous Consideration
  - Solution-focused

- **Oral Communication**
  - Clarity
  - Active Listening

- **Empathy**
  - Active Listening

- **Collaboration**
  - Active Listening
  - Solution-focused

- **Creative Problem Solving**
  - Solution-focused
What if **employers** agreed on the sub-competencies that rolled up to those familiar skills gap umbrella words like **collaboration** and **problem solving**. And universities/schools agreed on learning outcomes to build those skills.
What if **employers** used a “T” framework to create competency maps for jobs and job tracks.

What if students could use the same “T” as a development tool and personal roadmap.
Employers Are Contributing to the Conversation

50+ EMPLOYERS have offered feedback on badge criteria, participated in student mock interviews, and provided insight into hiring practices.
Employers hungry for ways to assess 21st century skills...

100% said the employers generally can support a framework that translates these skills.

80% said they would join an advisory group on this topic.

75% said they liked the concept of the T-profile and would like to see it further developed and tested.
Employers hungry for ways to assess 21st century skills

Show me the money.

BUT ...

Keep it simple...talk to us in our language.

Has to be scalable.
Connecting Credentials Work Group: Aligning Demand and Supply Signals

What should be done to better align diverse credentialing processes and products with emerging employer hiring practices so that job applicants are evaluated based on what they know and can do, rather than who they know and where they went to school?
Emerging Hiring Trends

Skills based hiring makes **keyword literacy critical**. Keywords becoming a "weeding tool."

Employers are **reaching further “upstream”** to source candidates in the hottest fields.

Employers seek both **broad and deep skills** in the same employees, but skill requirements are **changing** quickly.

Careers are **being replaced** by “gigs.”
Aligning Demand and Supply Signals

Key questions to get us from theory to action:

Who owns the comprehensive student record?

Who is best to manage translation engines?

How do we get competency frameworks to talk to each other?
Aligning Demand and Supply Signals

Paths to Adoption?

• Industry-specific competency maps and registries

• Strong support for students/consumers to position themselves

• Large individual employers “lighting the path”

• Uber-style “break-through” platform that matches supply and demand based on competencies.
Thank You

Stay Connected. Join the Innovator Network:
http://eddesignlab.org/innovatornetwork/

Education Design Lab
Designing Education Toward the Future of Work
Academic and/or co-curricular experiences should allow students to intentionally practice the skill. Reflection deepens their understanding of themselves personally and professionally.

Deep knowledge of the skill is critical to acquisition and a student’s ability to recognize and activate the skill.

Assessments need to serve as a developmental guide for students and demonstrate their disposition and strengths to employers.
In-Person
Facilitated Seminar (Georgetown University)
Hybrid
Self-Initiated with Required Meetups (GMU)
Hybrid
Self-Initiated with In-Person Skill-Building & Assessment Modules (Tunis Business School)
Online
Live Kickoff; Self-Paced Experiential Work and Online Tools (Bay Path University)
CLEARER SIGNALS
Building an Employer-led Job Registry for Talent Pipeline Management

U.S. CHAMBER OF COMMERCE FOUNDATION
Center for Education and Workforce
Why Now?

• A growing skills gap
• New evidence of employer collaboration
• Advancement in technology
• Growing adoption of open data standards
The Job Registry

- Job descriptions services
- Resource library
- Job data repository
What Makes it Different?

- Dynamic real-time data
- Open, structured data for improved interoperability
- Heterogeneous taxonomies and content models
- Shared language to communicate similarities as well as differences
<table>
<thead>
<tr>
<th>Apprentice Core Competencies</th>
<th>NIMS Credentials</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify and Demonstrate Use of Machine Safety and Personal Protective Equipment</td>
<td>Measurement, Materials, and Safety Level I</td>
</tr>
<tr>
<td>2. Demonstrate Compliance with Lock-out Tag-out Procedures and OSHA Requirements and Guidelines</td>
<td>Job Planning, Benchwork, and Layout Level I</td>
</tr>
<tr>
<td>4. Parts Inspection</td>
<td>Turning Between Centers Level I</td>
</tr>
<tr>
<td>5. Process Control</td>
<td>Turning Between Centers Level II</td>
</tr>
<tr>
<td>7. Participation in Processes Improvement</td>
<td>Chucking Level II</td>
</tr>
<tr>
<td>10. Sawing</td>
<td>Grinding Level I</td>
</tr>
<tr>
<td>12. Drilling Operations</td>
<td>CNC Programming - Milling and / or CNC Programming - Turning</td>
</tr>
<tr>
<td>13. Turning Operations: Turning Between Centers</td>
<td>CNC Milling and / or CNC Turning 1 axis</td>
</tr>
<tr>
<td>14. Turning Operations: Turning Between Centers</td>
<td>CNC Milling and / or CNC Turning 2 axis</td>
</tr>
<tr>
<td>15. Turning Operations: Chucking</td>
<td>CNC Milling and / or CNC Turning 3 axis</td>
</tr>
<tr>
<td>16. Turning Operations: Chucking</td>
<td>CNC Milling and / or CNC Turning 4 axis</td>
</tr>
<tr>
<td>17. Milling: Square Up A Block</td>
<td>CNC Milling and / or CNC Turning 5 axis</td>
</tr>
<tr>
<td>18. Manual Milling: Vertical and Horizontal</td>
<td>CNC Milling and / or CNC Turning 6 axis</td>
</tr>
<tr>
<td>19. Manual Milling: Vertical and Horizontal</td>
<td>CNC Milling and / or CNC Turning 7 axis</td>
</tr>
<tr>
<td>20. Surface Grinding, Grinding Wheel Safety (Optional)</td>
<td>CNC Milling and / or CNC Turning 8 axis</td>
</tr>
<tr>
<td>21. Surface Grinding, Horizontal Spindle, Reciprocating Table (Optional)</td>
<td>CNC Milling and / or CNC Turning 9 axis</td>
</tr>
<tr>
<td>22. Surface Grinding, Horizontal Spindle, Reciprocating Table (Optional)</td>
<td>CNC Milling and / or CNC Turning 10 axis</td>
</tr>
<tr>
<td>23. CNC Programming - Milling and / or CNC Programming - Turning</td>
<td>CNC Milling and / or CNC Turning 11 axis</td>
</tr>
<tr>
<td>24. CNC: Write a Simple CNC Milling and / or CNC Turning Program and Review Tool Paths</td>
<td>CNC Milling and / or CNC Turning 12 axis</td>
</tr>
</tbody>
</table>

```json
{
  "@context": "http://schema.org",
  "@type": "JobPosting",
  "baseSalary": "100000",
  "jobBenefit": "Medical, Life, Dental",
  "datePosted": "201-03-31",
  "description": "ABC Company Inc. seeks a full-time mid-level software engineer to develop in-house applications. Education Requirements: Bachelor’s Degree in Computer Science, Information Systems or related fields of study.
  "employmentType": "Full-time",
  "experienceRequirements": "Minimum 3 years experience as a software engineer",
  "incentiveCompensation": "Performance-based annual bonus plan, project completion bonuses",
  "industry": "Computer Software",
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  "occupationalCategory": "15-1132.00 Software Developers, Application"
}
```

"qualifications": "Ability to work in a team environment with members of varying skill levels. Highly motivated.
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  "skills": "Web application development using Java/J2EE Web application development using Python or familiar
  "specialties": "Veteran Commitment",
  "title": "Software Engineer",
  "workHours": "40 hours per week"
Job Registry Applications

**Government LMI and “Real Time” Data**
- Improved Labor Market Information (LMI) services and analytics
- Improved “real-time” data from job postings

**Employers**
- Improved job descriptions and postings
- Improved hiring and retention
- Improved HR analytics
- Improved signaling to providers

**Credentialing Organization**
- Improved curriculum and credential alignment
- Improved career services and job placement

**Individuals**
- Improved job search and matching
- Improved signaling of skills to employers

**Job Registry**
- Job description services
- Resource library
- Job data repository

**Job Registry Applications**
- Improved signaling to providers
A Vision for a Public-Private Data Infrastructure

**Credential Registry**
- Credentialing organization-led
- Credential description services
- Credential repository

**Job Registry**
- Employer-led
- Job description services
- Resource library
- Job data repository

**Labor Market Information Services**
- Job trends
- Credential holder employment and earnings

**Student/Jobseeker Platforms and Data Vaults**
- Resumes
- Resume/learner record services
- Personal data vault services
- Student/jobseeker repository