



Colorado Education Work Lab

January, 2020



COLORADO
Department of
Higher Education

LEARNING  ECONOMY

COLORADO LAB GOALS & OUTCOMES

GOALS

- Study Colorado's Data Ecosystem
- Conduct Stakeholder Workgroups & Pilots
- Build & Test New Infrastructures
- Unify Fragmented Institutions
- Quantify Student Outcomes & Skills

DELIVERABLES

- Local Research & Stakeholder Workgroups
- Foundational Pilots
- Community Pilot Sandbox
- CO State Learning Ledger & Skills Graph
- A Suite of Applications & Dashboards
- CO State Implementation Report & Roadmap**





Colorado Education Work Lab

The **C-Lab (Colorado Education Work Lab)** provides the whole state of Colorado with a unified but decentralized ecosystem for innovation, pilots, research, and collaboration for the future of education and work. It will incubate and launch a statewide **Colorado Learning Ledger and Skills Graph** then publish a report for other states to implement similar 21st century education and workplace infrastructures.

Colorado Lab

C-Lab Stakeholders

Government

- CO Department of Higher Education (CDHE)
- Office of Economic Development and International Trade (OEDIT) / Blockchain Council
- Governor's Office of Information Technology

University

- CU Boulder / CU Blockchain Alliance
- University of Denver
- CSU Pueblo

Non-Profit

- Colorado Technology Association
- Denver Education Attainment Network
- Western Interstate Commission for Higher Education
- Aproflo
- T3 Innovation Network

Service Partners

- BrightHive
- Salesforce
- Credential Engine
- Linux Foundation / Hyperledger

Foundational Research

American Workforce Policy Advisory Board

White Paper on Interoperability Learning Records

Harvard Kennedy School

Enhancing Blockchain Innovation via Regulation: The Case for an Economy Corporation (E-Corp)

T3 Innovation

Competency is the New Currency (Report)
Learning & Work Data Workgroup Reports

Claremont McKenna College

21st Century Student Equity & Governance

IBM

Blockchain Revolution in Education and Lifelong Learning

San Jose State University

Blockchain (Library Futures Series, Book 3)

Senior Advisors

Carissa Carter *Director of d.school at Stanford*

Chloe Autio *AI Policy, Intel Corporation*

Alex Philp *Data Scientist, IBM, NASA*

Phil Long *ASU's Trusted Learner Network*

Conor Lennon *Public Information Officer, UN*

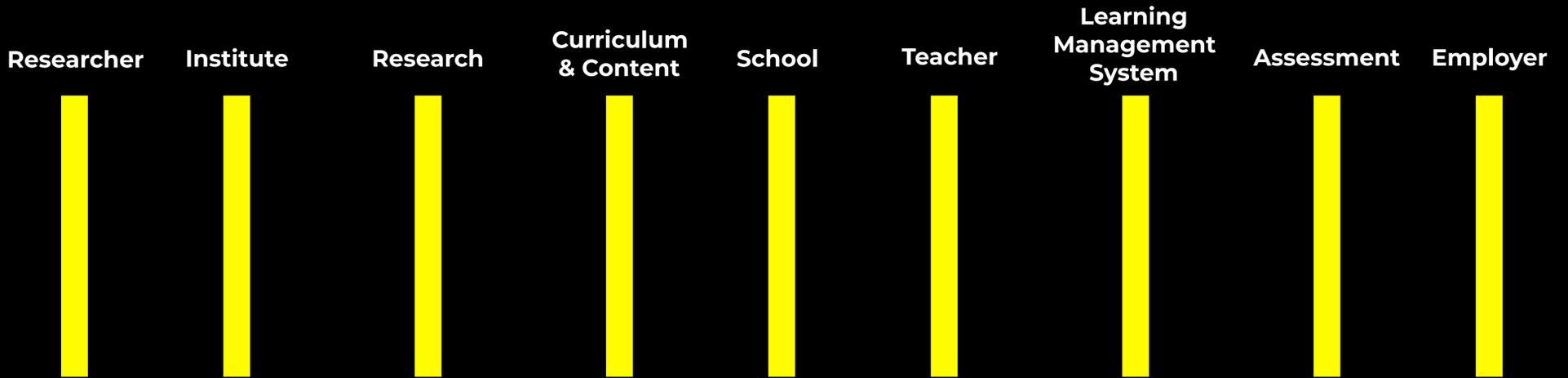
Hiram Chodosh *President, Claremont McKenna College*

Bob Sumner *Sr. Director, Disney Research*

Phil Komarny *VP Innovation, Salesforce*

36 Total Advisors

TODAY'S EDUCATION SUPPLY CHAIN



Today's education and workplace supply chain is totally fragmented.

- **SYSTEMS & DATA**—Total Fragmentation
- **MAPPING**—Only By Relationships
- **TRANSFER**—Email & Web Portal Uploads

Skills Gaps Are Growing

Learning & Workplace Data is Fragmented

Digitalization Threatens Student Privacy

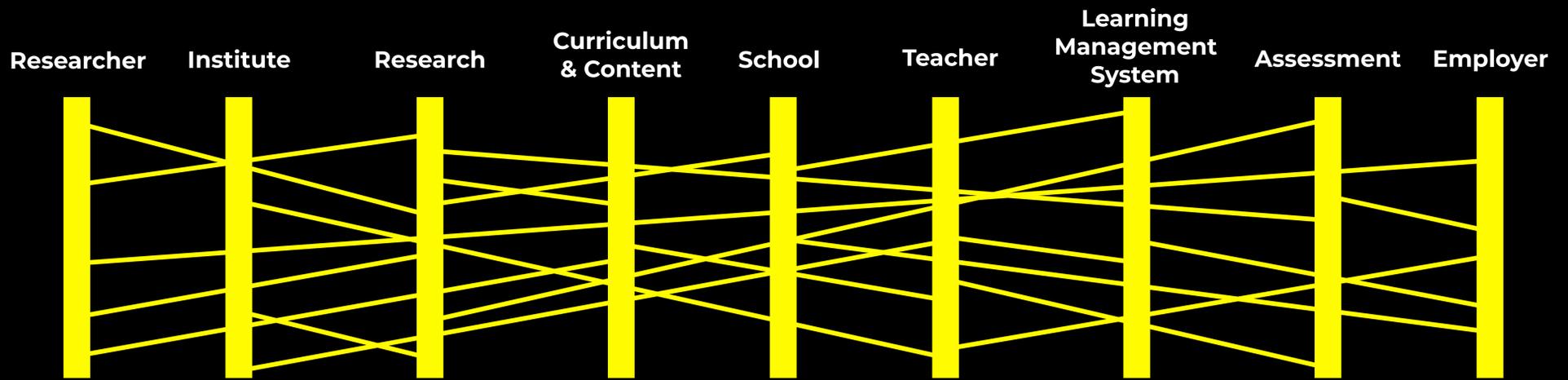
Pain points of a fragmented **Supply Chain.**

Human Capital Investment Is Guesswork

Opportunity/Equity Gaps are Growing

Stakeholder Collaboration is Stifled

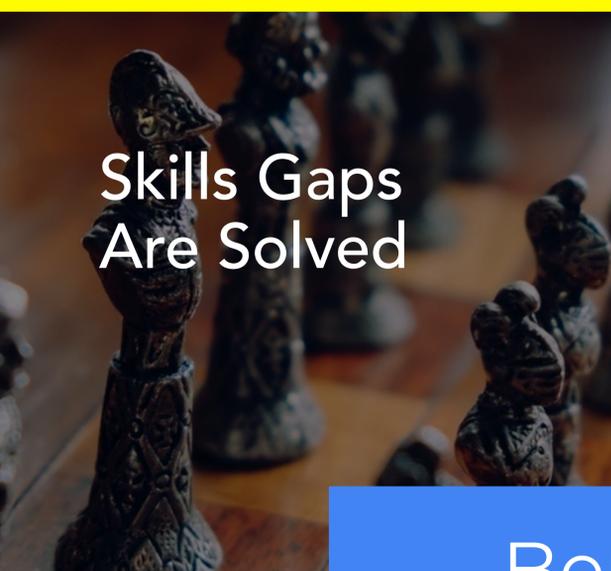
LEARNING ECONOMY'S SUPPLY CHAIN **PROTOCOL**



A **VALUE CHAIN**

- **DATA**—Decentralized & Unified
- **MAPPING**—Neural Net Pathways
- **TRANSFER**—Universal Infrastructure

The **Learning Economy Protocol** transfers information and value between every stakeholder by measuring and unifying the supply chain of education and work.



Skills Gaps
Are Solved



Learning & Workplace
Data is Interoperable

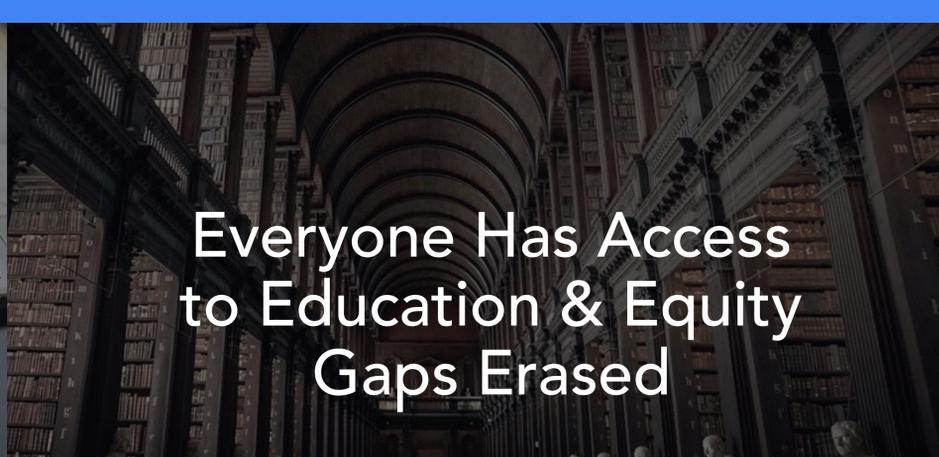


Student
Privacy is
Secured

Benefits of a unified **Value Chain**.



Real Time Data
Empowers Human
Capital Investments



Everyone Has Access
to Education & Equity
Gaps Erased



Stakeholders
Share in a
Collaborative
Ecosystem



Lab STRATEGY



The **Colorado Education Work Lab** employs a 5 step methodology (see above) to align stakeholders around research driven 21st century education and workplace infrastructure. It accomplishes this goal through a variety of programs driven by stakeholder consensus.

Colorado Lab PROGRAMS



	Phase 1 (6 Months)	Phase 2 (6 Months)	Phase 3 (1 Year)	Phase 4 (1 Year)
3rd Party Pilots		Community Pilots	Community Pilots	Community Pilots
Foundational Pilots		Identity Credentials	Equity Employee Pathways Student Pathways	Marketplace Economy
Workgroups	Research Fundraising Dev Specs Equity	Assessment Identity Governance	Pathways Cognitive Assessment	Recommendations Economy Marketplace
Research	Governance Data Standards Stakeholder Incentives	Equity Solutions Identity Privacy Causal Assessment Models	Machine Learning Economy Data Marketplace	Infrastructure Impact Steward Models Human Capital Investment
Unify Supply Chain		3 Schools 3 Employers	20 Schools 20 Employers	100 Schools 100 Employers

Proof Statements

- Innovation & Research Labs
- National & State Proofs
- National Implementation Reports

National Mandates

- Publish with UN & Group of Nations (G7/G20)
- Lobby for National & State Ledger Mandates
- Scale 21st Century Education & Work Infrastructures

2020-2023

2024 - 2029

2030

Solve UN SDG 4 & 8

In time for the 2030 UN Mandate



2020-2023 Generate proof studies and national roadmaps in U.S. State Labs and National Labs in countries with small populations and low legacy.

2024-2030 Publish implementation reports that empower governments to set national mandates.

COLORADO PIONEERS*

** (verb) to prepare the way for others to settle.*

First to give women the vote.

First to legalize cannabis.

First female democrat as Secretary of State.

First to pilot quadratic voting for legislation.

First to directly pay college athletes.

First to map statewide student pathways.

First decentralized education & work infrastructure.



UNIFY THE VALUE CHAIN OF EDUCATION & WORK



LEARNING LEDGER & SKILLS GRAPH

Identity

- Government ID Systems
- Open SSI Systems
- Closed SSI Systems
- Learner Record Systems
- Employer Record Systems

Education

- Learning Management Systems
- Badging and Credential Systems
- Library Information Systems
- Research Information Systems

Workplace

- Hiring Systems
- HR Systems
- Task & CRM Systems
- Compliance & Safety Systems
- Professional Development Systems



Learning Management Systems

Hiring Systems



Badging and Credential Systems

HR Systems



THE INTERNET OF EDUCATION



Library and Metadata Systems

Task & CRM Systems



Identity Systems



Research Information Systems



GOV AGENCY

ONLINE ED

INSTITUTE

EMPLOYER

EMPLOYEE

ORG

STUDENT

K-12

LIBRARY

HIGHER ED



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