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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
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.

**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
- Aproflow
- 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 AND EMPLOYMENT ECOSYSTEM IS COMPLETELY FRAGMENTED.

A BROKEN SUPPLY CHAIN

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

CHALLENGES IN 2020

Skills Gaps Are Growing
Learning & Workplace Data is Fragmented
Student & Employee Data is Inaccessible

Human Capital Investment Is Guesswork
Opportunity/Equity Gaps are Growing
Stakeholders Duplicate Effort Instead of Collaboration

Pain points of a fragmented Supply Chain.
EXPONENTIAL TECHNOLOGIES ALLOW FOR A DECENTRALIZED BUT UNIFIED SUPPLY CHAIN.

A VALUE CHAIN

LEARNING ECONOMY

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

EDUCATION IN 2030

Skills Gaps Are Solved
Learning & Workplace Data is Interoperable
Students Own Their Universal Learner Portfolio

Benefits of a unified Value Chain.

Real Time Data Empowers Human Capital Investments
Every Human Has Equitable Access to Education
Stakeholders Share in a Collaborative Ecosystem
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

THE INTERNET OF EDUCATION

GOV AGENCY
INSTITUTE
EMPLOYER
EMPLOYEE
ORG
STUDENT
K-12
LIBRARY
HIGHER ED
ONLINE ED
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

<table>
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<th>3rd Party Pilots</th>
<th>Foundational Pilots</th>
<th>Workgroups</th>
<th>Research</th>
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<td>3 Schools</td>
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<td>100 Schools</td>
<td>100 Employers</td>
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**Phase 1 (6 Months)**
- 3 Schools
- 3 Employers

**Phase 2 (6 Months)**
- 20 Schools
- 20 Employers

**Phase 3 (1 Year)**
- 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
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.

Solve UN SDG 4 & 8
In time for the 2030 UN Mandate

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.
Colorado Lab 3 YEAR BUDGET

<table>
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<th>Category</th>
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<th>Personnel</th>
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<td>$3.8 Million</td>
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<td>Research</td>
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$2.74 Million Per Year
$8.23M Total (3 Years)