

# Opening Doors

## Team B-7061:

### Data for Opportunity in Occupation Reskilling Solution

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**D O O R S**

**We are facing a  
skills gap  
emergency.**

A close-up photograph of a white sign with black text hanging from a metal chain. The sign is slightly tilted and has a soft blue glow around it. The background is blurred, showing what appears to be a glass door or window.

**CLOSED**  
**COVID-19**

# PHASE I

## Learning Workforce Needs, Challenges, Goals

### JOE'S ACTUAL DECISION

- Earns **\$500/week**, supports three children.
- Joe hears truck drivers can make **\$1100/week**.
- Joe **enrolls** in truck driving school.
- One year later Joe is **worse off**, making **\$500/week** truck driving, struggling to pay off training debt.

### IMAGINE A BETTER WAY

- Earns **\$500/week**, supports three children.
- Joe uses DOORS to view **objective ROI information** for each reskilling option.
- Joe enrolls in an IT certificate with projected **\$800/week** earnings.
- One year after graduation, Joe is **earning more** and is able **to provide for his family**.

# PHASE I

## Learning Government Needs, Challenges, Goals

We **interviewed over 80 policy leaders** in at State Labor Departments and Workforce Boards Across the country.

Policy leaders **want to support their workforce with data** to gain valuable skills in an efficient and effective reskilling market.

They **need integrated science + technology partnerships** to accomplish their goal.

"We feel like we're **10 years behind** because we work for the state. **Operating in silos is difficult.** We welcome this effort to put our heads and our data in the right direction."

# DOORS creates a virtuous cycle for reskilling America.



**01. CLOUD COMPUTING**

**02. SCIENCE TO DEVELOP RETURN-ON-INVESTMENT**

**03. ROI DELIVERED STRAIGHT TO WORKERS**

**04. IMPROVED DECISIONS**

**05. BETTER OUTCOMES PER DOLLAR SPENT ON TRAINING**

# The DOORS coalition will deliver opportunity to millions.



brighthive



CUTTING  
EDGE  
TECH



CROSS-SECTOR  
GOVERNMENT CAPACITY  
SPECIALISTS



MISSION-DRIVEN INVESTMENT

FOUR DIVERSE STATES

+ ADDITIONAL SCALING



WASHINGTON

RHODE ISLAND

COLORADO

MICHIGAN

VIRGINIA

CALIFORNIA

TEXAS

DARTMOUTH

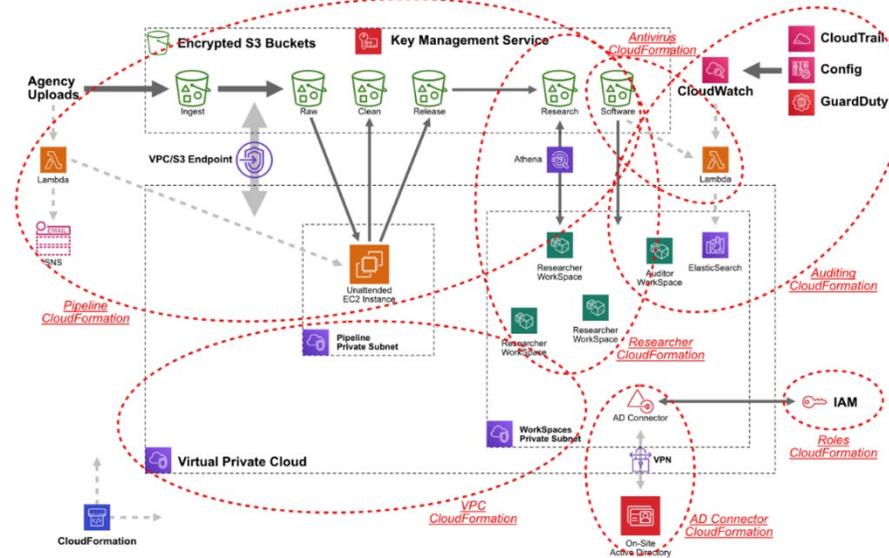


STANFORD

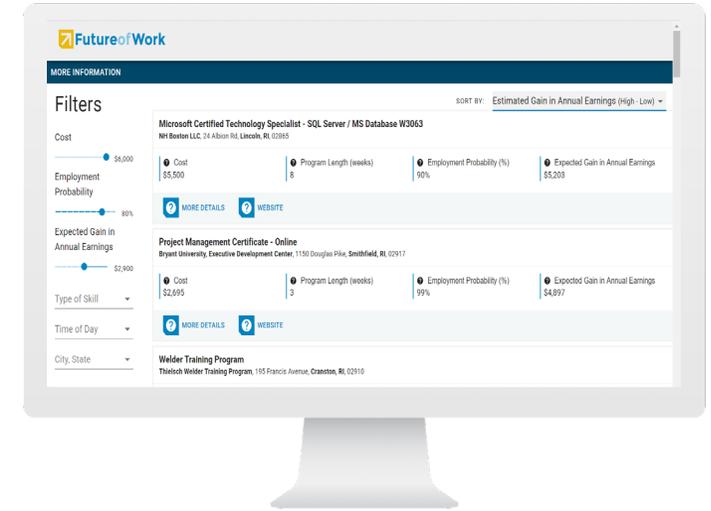


LEADING SCIENTISTS

Delivering strong proof-of-concept.

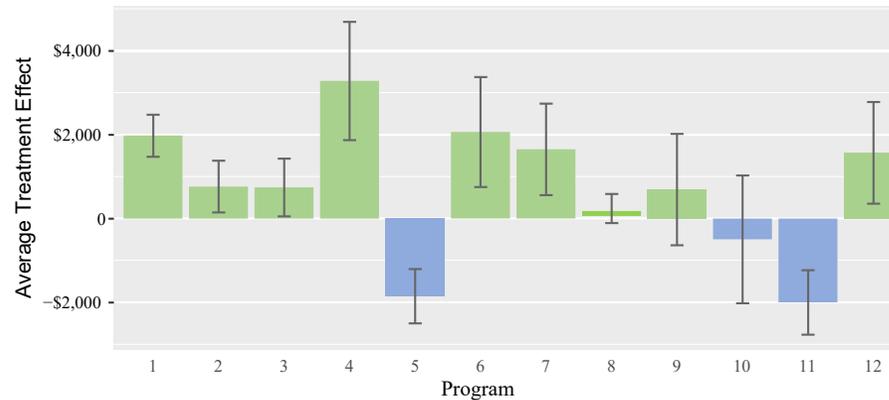


RESEARCH DATA LAKE PROTOTYPE



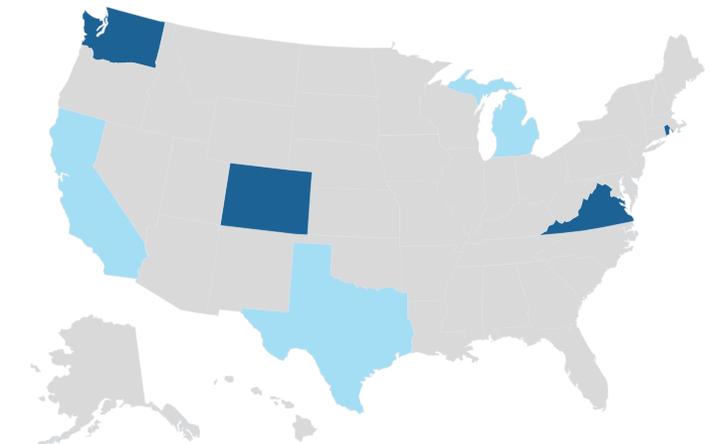
WEB AND MOBILE APP PROTOTYPE

Causal estimates of the impact of twelve Rhode Island training programs on earnings using a DML estimator.



Notes: Y-axis measures average earnings in post-training quarters 3 and 4. Program names are removed for confidentiality. Programs are ordered from largest enrollment (1) to lowest enrollment (12). Error bars indicate 90% confidence intervals.

RETURN-ON-INVESTMENT PROTOTYPE



SCALING PLAN

# PHASE II : Finalize, Launch & Evaluate DOORS in 4 States



**01. OPEN-SOURCE CLOUD-BASED GOV RESEARCH DATA LAKE SOLUTION**

**02. SCIENTIFICALLY-VALID ROI MEASURES, TRAINED & TUNED WITH 4 STATES**

**03. OPEN-SOURCE, USER-CENTERED WEB AND MOBILE APP**

**04. TECHNICAL RESOURCES AND TRAINING MATERIALS FOR STATE GOVERNMENT**

**05. OPEN-SOURCE, ITERATED SOLUTION WITH TURN-KEY MANUAL**

**06. IMPACT EVALUATION OF DOORS: RESKILLING CHOICES & EMPLOYMENT OUTCOMES**

**07. PERFORMANCE METRICS GUIDING GOVERNMENT DECISIONS**

**08. GROWING CULTURE & COMMUNITY OF PRACTICE**

# Roadmap to Success

Q3 2020

Q4 2020

Q1 2021

Q2 2021

Q3 2021

Q4 2021

Q1 2022

Q2 2022

## **PLAN AND LAUNCH RDLS IN ALL FOUR STATES**

Assess technological capabilities; conduct focus groups and interviews; develop training materials.

## **FINALIZE ROI MEASURES; WEB AND MOBILE APP**

Develop forecast models of demand and impact of training programs; plan Pay for Success; develop dashboards for reskilling ecosystem.

## **LAUNCH APP, TRAINING, AND DASHBOARDS IN ALL FOUR STATES**

Deploy training materials for counselors and workers; high-impact programs develop plan to expand; host track success convening to utilize ROI measures; host DOORS convening with states; evaluate DOORS short-run impacts.

## **PILOT SCIENCE-AS-SERVICE; PILOT SOCIAL MEDIA; DEVELOP DOORS PACKAGE AND SCALE**

Expand ROI measures to include social services costs; host convening with track teams; expand high-impact programs; evaluate DOORS long-run impact; train government to own and operate DOORS.

## **MILLIONS OF AMERICANS USE DOORS AND OBTAIN PROVEN RESKILLING**

Finalize and release DOORS open-source package; finalize evaluation and disseminate; scale to other interested states; disseminate final research.

## Broader Impact:

Collectively Delivering  
Track Success

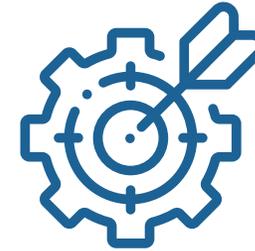


**D O O R S**

**Teams:  
B-6656;  
B-6956;  
B-6857;  
B-6968**



**Provide ROI  
measures for  
Teams to use  
in their Apps**



**Evaluate and  
measure  
impact  
across tracks.**



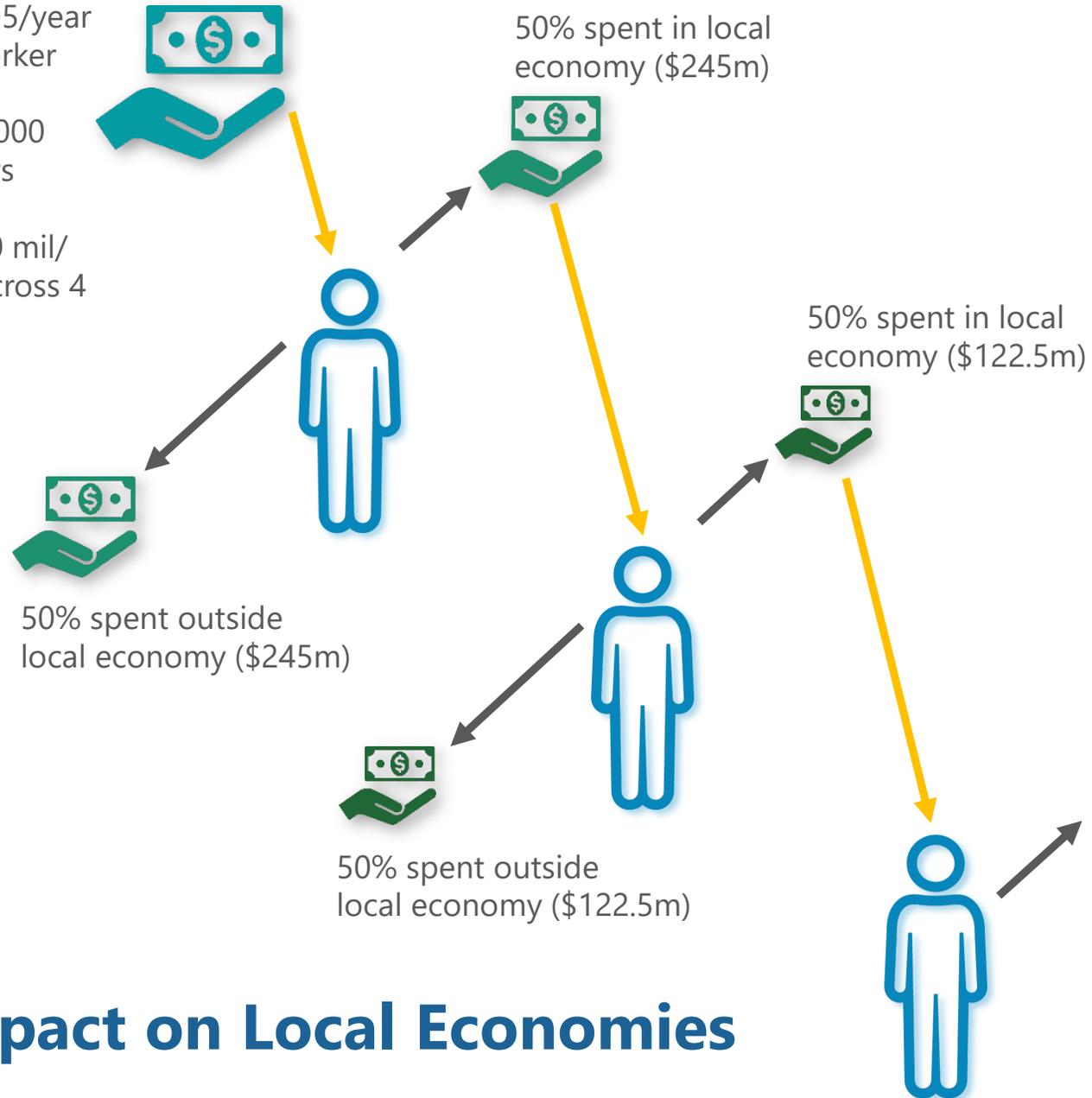
**Convene  
government  
and research  
teams.**

## Broader Impact:

DOORS delivers economic value, growth, & opportunity.

*What if we just moved workers in the bottom 50% of programs to the top 50%?*

+ \$3,095/year per worker moved  
+ 158,000 workers moved  
+ \$490 mil/year across 4 states



**x1.5 =  
\$735  
Million**

**Net Present  
Value over  
10 Years =  
\$6 Billion**

**Min. 4-State  
DOORS ROI =  
120,430 %**

## Impact on Local Economies

## Broader Impact: Opening Doors of Opportunity for all Americans

*“This partnership is helping us fully leverage our data to help workers re-enter the workforce and prepare all workers for in-demand jobs. Even more, it helped us build the capacity to swiftly tackle COVID-19 challenges with tech and science.”*

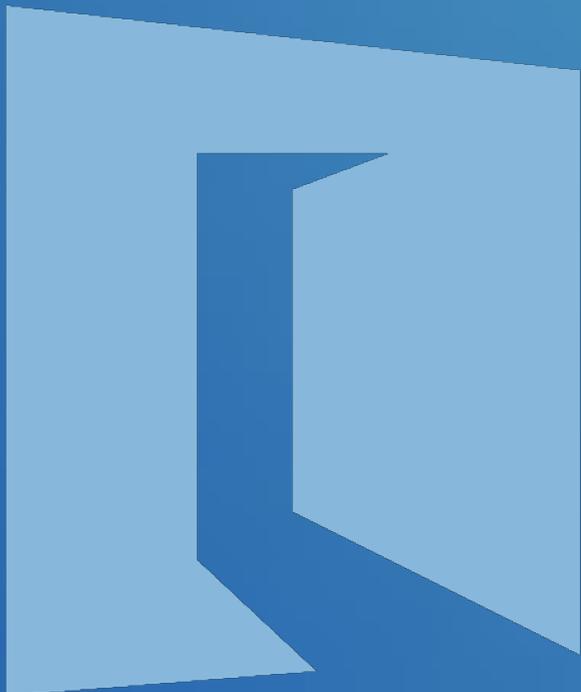
– Scott Jensen,  
Director of Rhode Island Department  
of Labor and Training

**We will deliver billions annually in value and economic growth to the American taxpayer: A 120,430% 10-year ROI.**

**We will empower government to use data better in success or crisis.** Rhode Island has already used our system to be the first in the nation to deliver emergency COVID-19 assistance. Over 30,000 Rhode Islanders now have benefits!

**We aren't stopping at 23 million.** DOORS is positioned to scale across the country with growing network throughout Phase II.

# Appendices



## **DOORS**

Data for Opportunity  
in Occupation  
Reskilling Solution

# Appendix A: Phase I: Key Learnings

## Interviews: Summary

**23 interviews with job seekers** in Rhode Island and Chicago career centers.

**8 interviews with job counselors** in Rhode Island career centers.

**80 interviews with policy leaders** in government and nonprofits nationally.

- **Workers** need the ROI measures so they can make wise decisions for the future, instead of relying on anecdote, hearsay, word of mouth. They need it delivered in a way that works.
- **Job counselors** need the measures to empower their customers with objective, data-driven measures. They need it delivered in a way that works.
- **Government** wants to use their data to make better, evidence-based policy, to get greater returns for tax payer \$\$\$. They need it delivered in a way that works.

# Appendix A: Phase I: Key Learnings

National Survey and Conjoint

**2,015** respondents nationwide.

**Low and middle-income workers** who were currently unemployed or recently filed for UI.

**Conjoint analysis** simulates how **real people** make choices.

- Workers choose **high-value programs** when they are given information about **earnings gains** from each program.
- These findings will hold for workers from **all backgrounds**, but **lowest-income** and **least-educated** workers are least sensitive to all types of information.
- The takeaway? Earnings information will **help workers make informed choices about training**. The people who need this information the most **will benefit from having job counselors empowered with facts** to help them effectively make wise decisions.

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Summary statistics from nation-wide survey				
	Employed Full-time	Employed Part-time	Unemployed (0-6 mo.)	Unemployed (>6 mo.)
<b>% Industry of Work Impacted by COVID*</b>	28.4%	26.8%	28.9%	25.6%
<b>Mean Age (St.Dev.)</b>	43.0 (12.4)	45.4 (14.0)	39.0 (13.5)	44.6 (13.2)
<b>Female</b>	56.0%	72.1%	63.7%	56.6%
<b>Minority</b>	32.1%	34.2%	39.4%	38.4%
<b>% Worried about job loss</b>	37.1%	38.6%	-	-
<b>Top 3 Current/Most Recent Industries</b>				
	Manufacturing	Retail	Retail	Retail
	Retail	Education	Leisure & Hospitality	Healthcare
	Education	Self-employed	Healthcare	Manufacturing
<b>Top 3 Training Areas of Interest</b>				
	Business management	Business management	Business management	Computer and IT
	Computer and IT	Computer and IT	Computer and IT	Health
	Health	Health	Health	Business management
<b>Top 3 Features for Choosing Training Program</b>				
	Employment & Earnings	Employment & Earnings	Employment Earnings	Employment Earnings
	Program Length	Total Cost	Total Cost	Total Cost
	Total Cost	Program Length	Program Length	Program Length
<p><b>Notes: *Industries most directly affected by COVID-19 include retail trade, wholesale trade, manufacturing, and leisure and hospitality.</b></p>				

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Estimated demand elasticities across conjoint models.		
Model 2	Model 3	Model 4
-0.900***	-0.838***	-0.657***
-0.077**	-0.033	-0.041
-0.218***	-0.170***	-0.101***
0.735***	0.512***	NA
NA	1.730***	1.328***
NA	NA	-0.271***

Notes: Statistically significant at the \*\*\*<0.001, \*\*<0.01, \*<0.05 level. Elasticities represent the estimated percentage change in the share of individuals choosing a program when the feature characteristics increases by 1%.

# Appendix A: Phase I: Key Learnings

## Key Quotes

***"I want to see if [a program] is worth it.*** I can't spend valuable time on something that will not benefit me in the end."

*Training seeker*

***"This will make us more credible.*** People will like us better if we have data [and] can answer their questions with confidence."

*State job training counselor*

"My priority is to improve the lives of jobseekers across the State. ***We want to build something exactly like this system to do it.***"

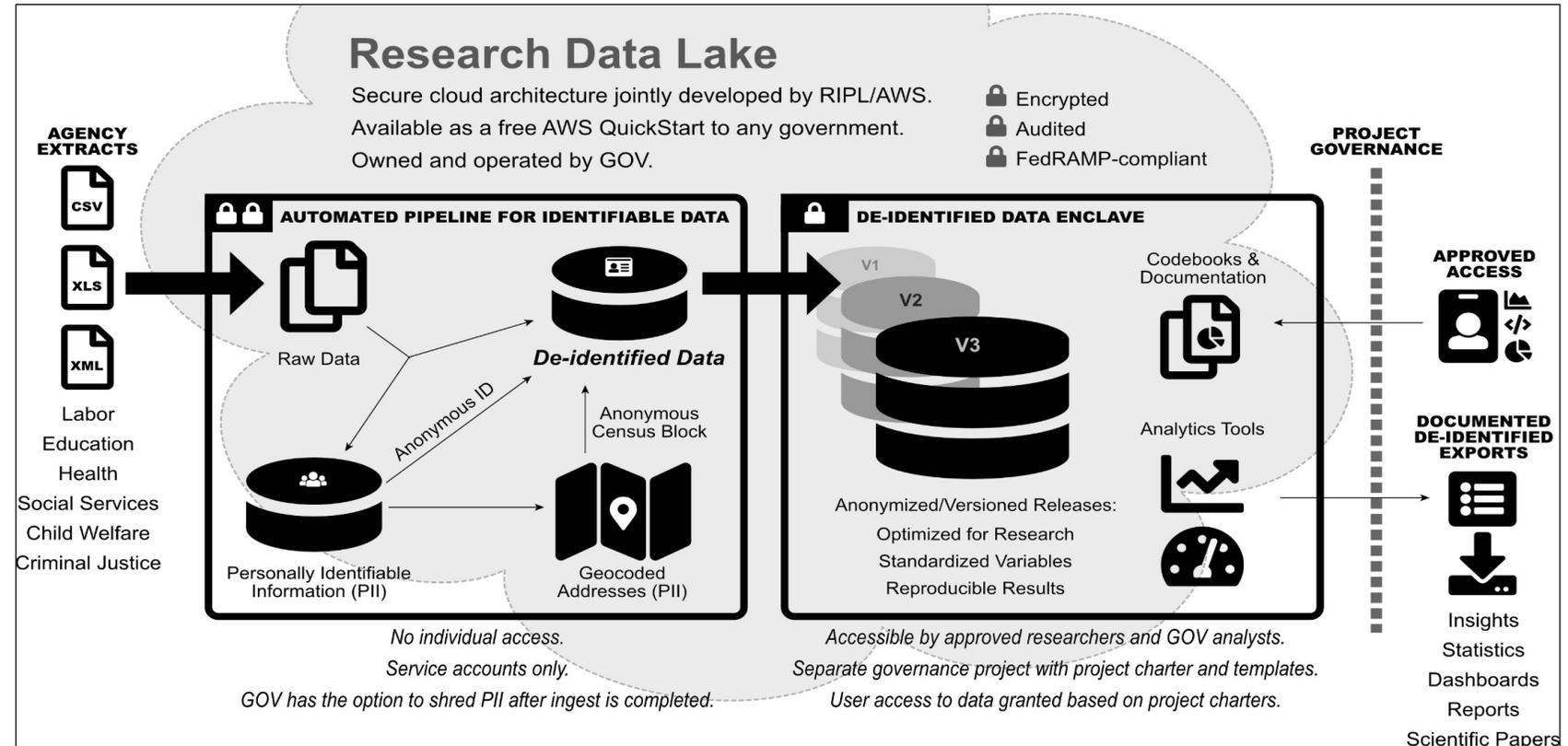
*State policymaker*

# Appendix B:

## Phase I: Prototypes

### Research Data Lake

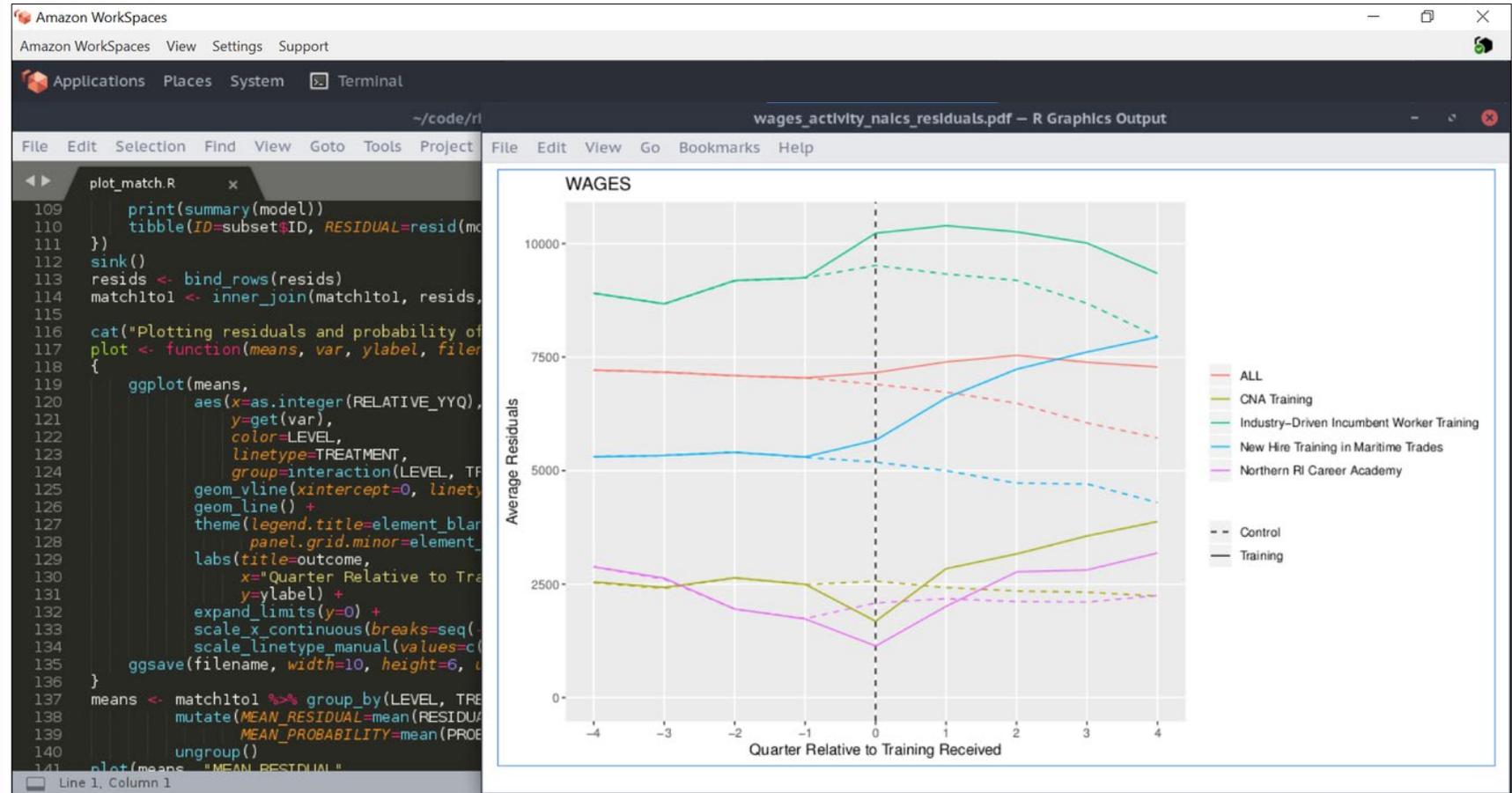
1. Bringing data into the system for 360-degree insights.
2. Secure cloud hosting and ownership.
3. Automated pipeline for integrating and anonymizing data.
4. Creating a de-identified data enclave for research at the speed of policy.
5. Governance process to manage access and facilitate research partnerships.



# Appendix B: Phase I: Prototypes

## Research Data Lake

Screenshot of using the secure Research Data Lake to create a graph showing average wages received by workers in labor training programs in the quarters before and after receiving training, relative to matched control group.



# Appendix B:

## Phase I: Prototypes

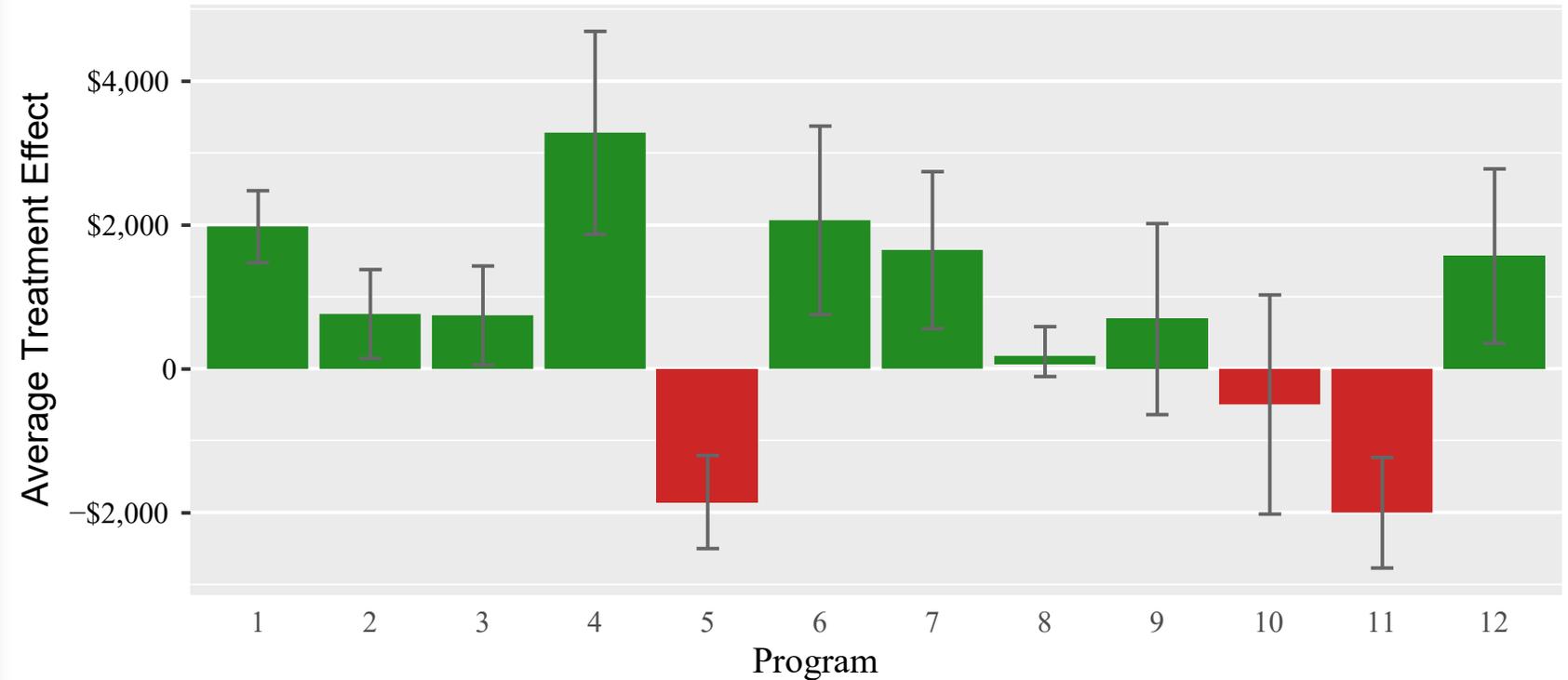
### Causal Machine Learning

Linked administrative records from Rhode Island and Double/Debiased Machine Learning (DML) to measure causal impact of Workforce Innovation and Opportunity Act training programs on earnings.

DML also allows for analysis of impact on subgroups.

Learn more about DML [here](#).

**Causal estimates of the impact of twelve Rhode Island training programs on earnings using a DML estimator.**



Notes: Y-axis measures average earnings in post-training quarters 3 and 4. Program names are removed for confidentiality. Programs are ordered from largest enrollment (1) to lowest enrollment (12). Error bars indicate 90% confidence intervals.

# Appendix B:

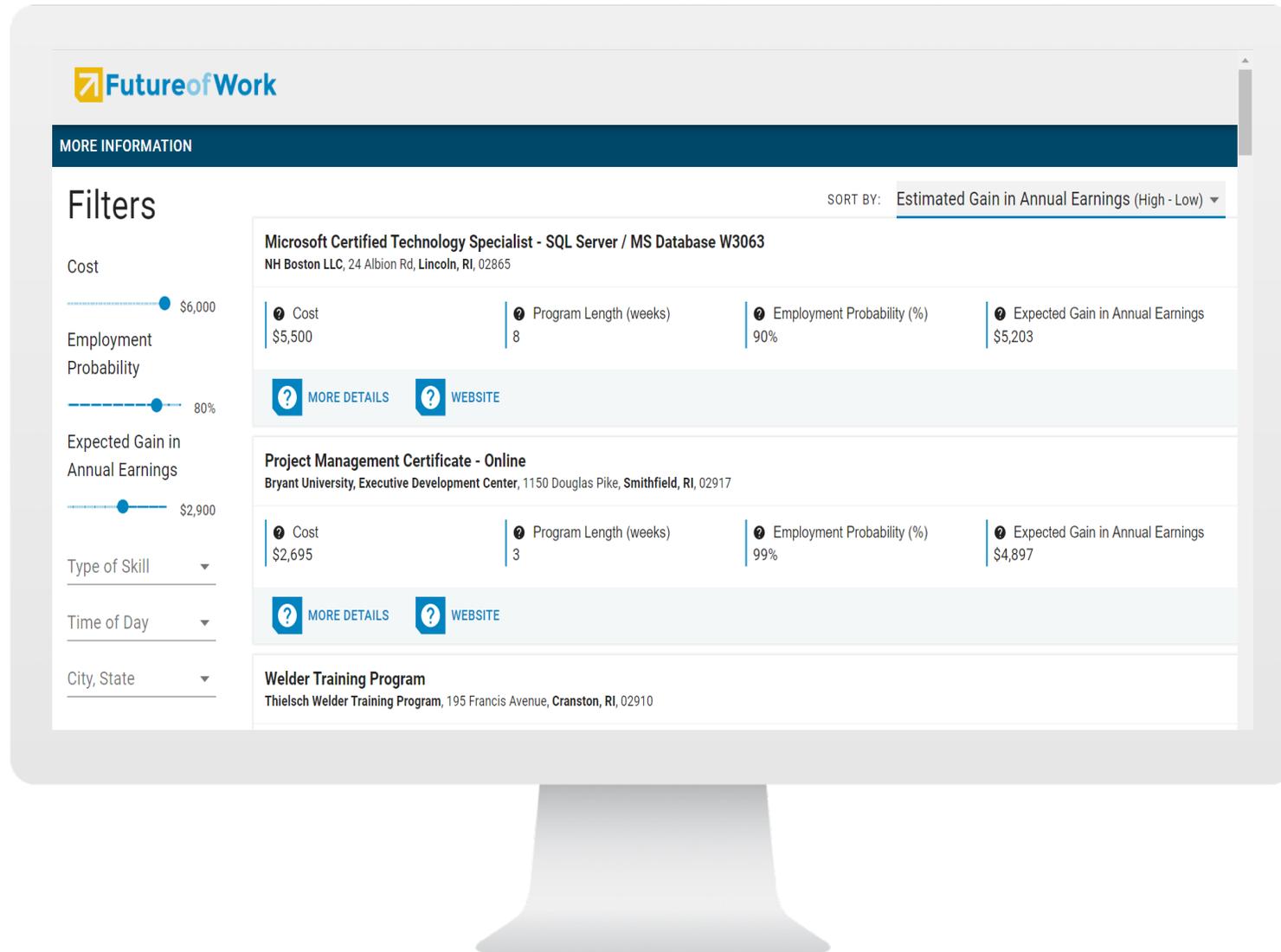
## Phase I: Prototypes

### Web and Mobile App

Designed to help users search for training and certificate programs based on the key learnings in Phase I.

Information can be sorted based on expected gains in earnings, employment probability, and cost, and to filter programs on type of skill, time of day, and location.

Powered by an API from the Research Data Lake.



# Appendix C:

## Delivering COVID-19 Assistance in RI

"I am in awe of what we have collectively accomplished in partnership with RIPL. We have paid over 30,000 PUA applicants in Rhode Island already, all of which were quickly, efficiently processed and verified on a cloud platform that took only days to build... We adapted our response to the scale of the challenge — thinking and innovating our way out of this — and are honored to serve our neighbors and communities with a system that shows the power of data, science, and technology to deliver real results that Rhode Islanders can rely on."

*Scott Jensen, Director of the Rhode Island Department of Labor and Training*

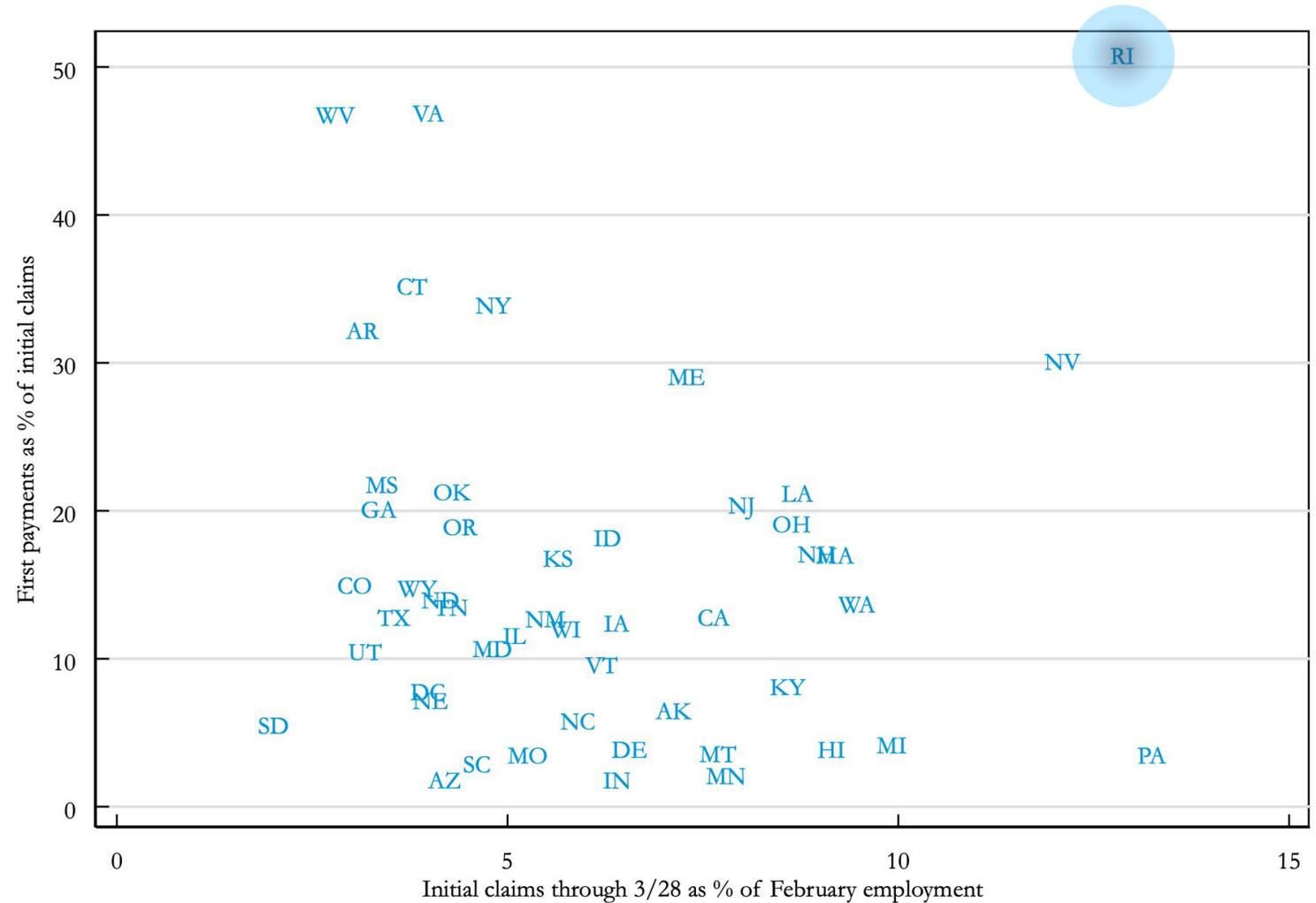
- State and legacy systems are crashing under tidal wave of unemployment claims.
- RIPL, AWS, and Rhode Island partnered to make Rhode Island the **first state to deliver Pandemic Unemployment Assistance (PUA) benefits** by building and launching a cloud-based PUA system in just 10 days.
- Received a record 11,000+ claims on its first day seamlessly. Processed 50,000+ applications to date.
- System developed into an open-source package, RIPL CARES, that is scalable, easily installed, and free to use for any state.
- Read more here: <https://www.ripl.org/ripl-and-state-of-rhode-island-partnership-leads-nation-in-response-to-covid/>

# Appendix C:

## Delivering COVID-19 Assistance in RI

Rhode Island paid the most claims, the fastest of any state in the first days of crisis.

Source: Kevin Rinz, US Census Bureau, "Understanding Unemployment Insurance Claims and Other Labor Market Data During the COVID-19".

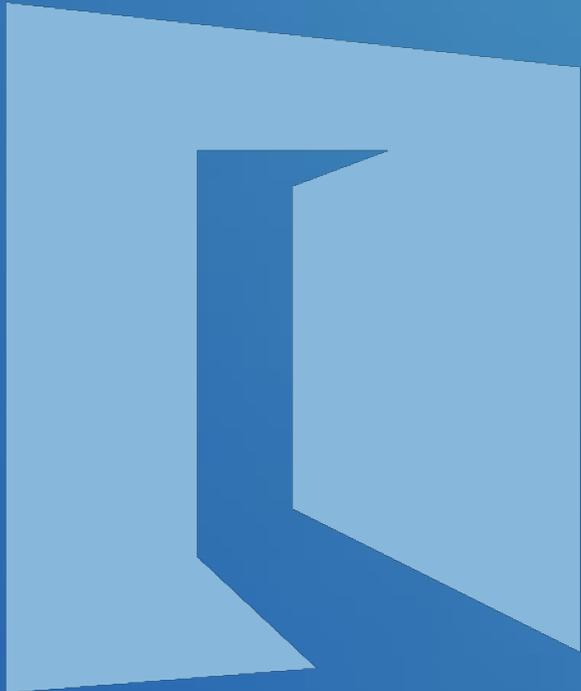


# Appendix D:

## Research Improving People's Lives (RIPL)

RIPL provides powerful scientific grade insights at the speed of policy directly to policy makers. We do this by adapting the best existing data and science methodologies for the government environment and enlisting the help of academic researchers to apply their skills and insights to solving policy problems.

- Learn more about RIPL Research Data Lakes (RDLs) [here](#).
- Read RIPL's paper in *Communications of the ACM* about the technical infrastructure for securely integrating administrative data [here](#).
- Read RIPL's paper at the Brookings Institute on unlocking data and science in partnership with government to create fact-based policy [here](#).
- Read the prototype manual for RIPL's RDL and governance [here](#).
- See the Phase I Deliverables from Team B-7061 on the RIPL website [here](#).



# DOORS

Data for Opportunity  
in Occupation  
Reskilling Solution