

Retrain toward AI, or away from it?

What federal job-training records from 2012 to 2024 say about workers in AI-exposed jobs, and what workforce agencies could build next.

Based on Hyman, Lahey, Ni & Pilossoph, “How Retractable Are AI-Exposed Workers?” NBER Working Paper 34174 (revised August 2026)

SUMMARY

The short version

1

The payoff grew

For workers leaving highly AI-exposed jobs, the earnings gain from training rose from about \$1,000 to \$3,000 a quarter.

2

Direction matters

People in low-exposure jobs did best moving toward AI. People in highly exposed jobs did best moving away.

3

Many can adapt

About 45% of occupations are “AI-retrainable”: people who retrain move into more AI-exposed work and earn more.

THE QUESTION

When AI changes a job, where should the worker go next?

Toward AI

Retrain into work that uses AI and rewards skills that complement it.

Away from AI

Retrain into work with less AI exposure, out of the path of disruption.

Most of the debate runs on forecasts. This study measures what actually happened to people who retrained through WIOA, the Workforce Innovation and Opportunity Act, the main U.S. public job-training program.

THE DATA

Real retraining outcomes, 2012–2024

119,463

training spells from U.S.
Department of Labor WIOA
records

134,317

job seekers who got only job-
search help: the comparison
pool

2

AI-exposure measures: what
AI could do, and what people
actually use Claude for

Each trainee is compared with a similar person who came to the same system for help but got only job-search assistance. Earnings come from state unemployment-insurance records for three quarters before and after.

Many trainees come from AI-exposed jobs

HIGHEST AI EXPOSURE · TOP FIFTH

Job before training	Trainees
Customer service reps	4,027
General office clerks	1,390
Receptionists	850

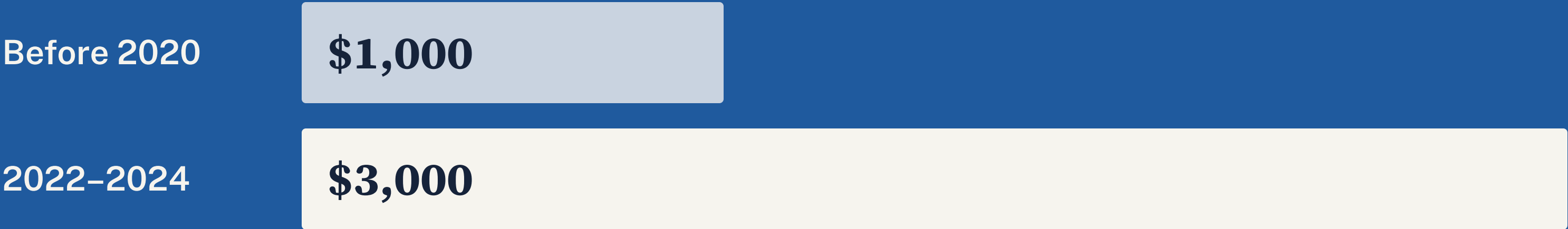
LOWEST AI EXPOSURE · BOTTOM FIFTH

Job before training	Trainees
Production workers	2,635
Laborers, material movers	2,093
Production helpers	1,598

Trainees cluster at both ends of the exposure scale, and their mix closely tracks unemployed workers nationally.

THE HEADLINE

For workers in AI-exposed jobs, the payoff from retraining tripled



About how much more trainees from highly AI-exposed jobs earned per quarter than matched job-search-only peers (2010 dollars).

For comparison, trainees from low-exposure jobs averaged about \$2,400 a quarter over 2012-2024.

THE PATTERN

The best move depends on where a worker starts

STARTING IN A LOW-EXPOSURE JOB

Move up, toward AI

The biggest gains come from retraining into more AI-exposed, better-paid work.

17 → 23 points

more likely than matched peers to move up, before 2020 vs. 2022–2024

STARTING IN A HIGH-EXPOSURE JOB

Move away from AI

Gains come mostly from moving into less-exposed work, such as nursing assistant jobs.

20+ points

more likely than matched peers to move to less-exposed work in 2022–2024

WHAT CHANGED

Why the payoff rose

3% → 11%

of training gains came from which jobs people moved into, before 2020 vs. 2022–2024

~4×

growth in WIOA-eligible programs with AI content in three years, from about 70 at the end of 2021

~25%

of WIOA-eligible programs taught general tech skills by 2024. AI-specific courses are still rare.

The authors also note that 2022–2024 was a tight labor market, when a training credential may carry extra weight with employers.

Nearly half of occupations are “AI-retrainable”

45%

of occupations: people who leave them for training end up, on average, in better-paid and more AI-exposed work than matched peers.

37%

of individual trainees fit that description (35% using the Claude-usage measure)

39%

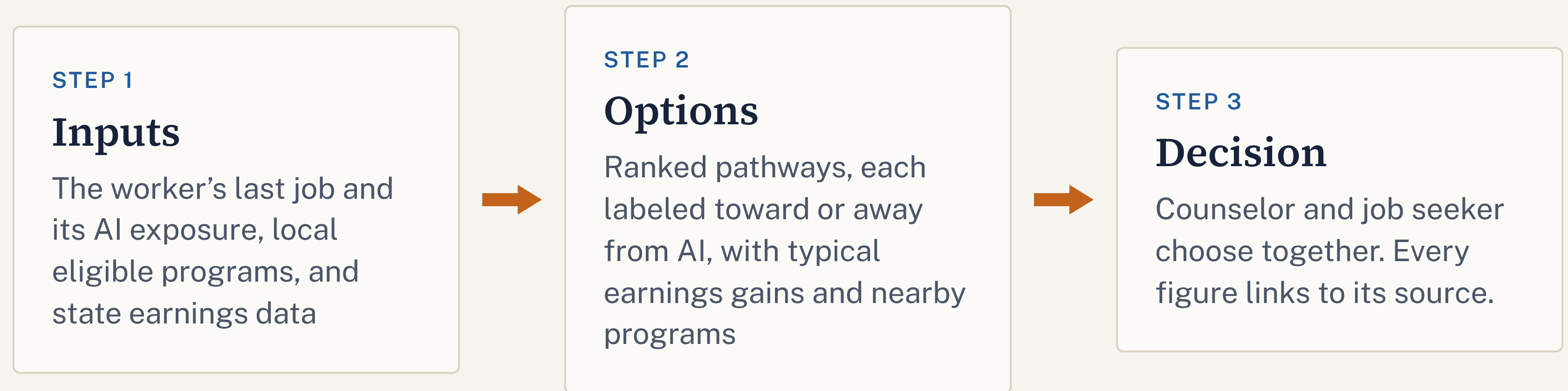
of the U.S. labor force works in these occupations, likely an undercount

How it works: each occupation is scored on two changes at once, both relative to matched peers: the shift in AI exposure and the shift in earnings.

Three moves for workforce agencies

- 1 Advise by starting point**
Point people in highly exposed jobs toward growing, less-exposed fields. Help people in low-exposure jobs move up into AI-complementary work.
- 2 Record the occupation, every time**
Reporting occupation codes is up to local boards, and only 22% of training spells had them. Without them, states can't track these shifts.
- 3 Make AI courses easy to find**
AI programs are growing but still rare, and the researchers had to find them by keyword search. Tag them on eligible-provider lists.

A pathway finder for counselors



DESIGN PRINCIPLES

Starts from the worker's current job

Shows the evidence and its uncertainty

A person makes the call

How we’d know it works

Metric	Study’s national figure	Why it matters
Occupation recorded at exit	22% of training spells	Nothing else can be measured without it
Lands in the targeted job	41% same job; 61% same job family	Shows whether the chosen pathway held
Earnings gain over job-search-only peers	About \$1,200–\$2,400 a quarter, 2012–2024	The outcome workers care about most

Figures are national averages from the study: a starting point, not any one state’s baseline. “Same job” means the same detailed occupation code.

Piloting it in one state

PHASE 1

Fix the data

Make occupation a required field, and record a baseline for each metric.



PHASE 2

Test it

A few job centers use it with job seekers. Compare with centers not yet using it.



PHASE 3

Decide

Expand, adjust or stop, judged on the three metrics from the previous slide.

Earnings gains take time to show. The study measured them over three quarters after training ended, so the decision point comes after that window.

LIMITS

What this study can't tell us

Not randomized

Trainees are matched to similar job seekers. Hidden differences could remain.

Short time frame

Earnings are tracked for three quarters after training ends.

Patchy job data

Only 22% of training spells had complete occupation codes.

An unusual job market

2022–2024 was tight, which may have made credentials count for more.

Not peer-reviewed

It's an NBER working paper, revised in August 2026.

Usage data skews

Claude usage may over-represent industries like software.

SOURCES

Where the findings come from

Hyman, Benjamin G., Benjamin Lahey, Karen Ni, and Laura Pilossoph. “How Retractable Are AI-Exposed Workers?” NBER Working Paper 34174, August 2025, revised August 2026. nber.org/papers/w34174

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