Promoting Successful Transitions to Careers for Young Adults: Impacts on School to Work Sequences

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Panel on the Paths They Take: Transitions to Careers Among Low-Income Young Adults
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Auspices

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- Work in progress aimed at describing trajectories of young adult participants in RCTs of promising career entry programs
- A sub-study of PACE—a wider evaluation of nine programs sponsored by the federal Administration for Children and Families, Office for Planning, Research, and Evaluation

Our Problem

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- Leading sectoral training programs seek to generate “career entry with momentum”
- Rigorous evaluations find that such programs can generate substantial increases in average earnings
- But we do not understand the effects on school-work pathways underlying these impacts
- Key questions:
  - *How do programs affect the paths young adults take? What school-work sequences are typical in the treatment and control groups? Do steps tend to be short or long, few or many, static or upward?*
  - *Are impacts on “growth pathways” widely shared or concentrated in a relatively small subset of program participants?*
- One challenge has been translating steps in different occupations into uniform schema useful in comparing career progress across dissimilar careers and contexts

This Presentation

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- Describes an approach to analyzing impacts on sequences of comparable school and work statuses
  - With possible statuses varying in time intensity and wage level
  - An application of Sequence Analysis—methods originating in genetics (DNA sequences), spreading to business (purchases) and social science (occupation, family formation, school-work, migration)
- Provides an illustrative application for one program
  - Year Up, a national program, offers a full year of full-time occupational training and supports, including 6-month internship, in IT and other high-demand fields
  - Produced large positive impacts on average earnings during the first three follow-up years
- Identifies extensions in a forthcoming working paper

The Data

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- 2,544 young adults with high school credentials in nine cities, randomly assigned to treatment and control groups (2:1) in 2013-14
- Follow-up survey (71% response, n=1,815) obtains retrospective measures on every school and work spell over three years post-random assignment, including
  - Beginning and ending dates
  - School spells: full-time, part-time, or a mix
  - Work spells: hours and wages at beginning and ending of spell
- Use to construct primary status in each of months 0-36 (see next slide)
- Analysis includes all survey respondents—addressing missing data through imputation and (for a small number of sample members) assigned status of "missing"

Possible School-Work Statuses in the Analysis

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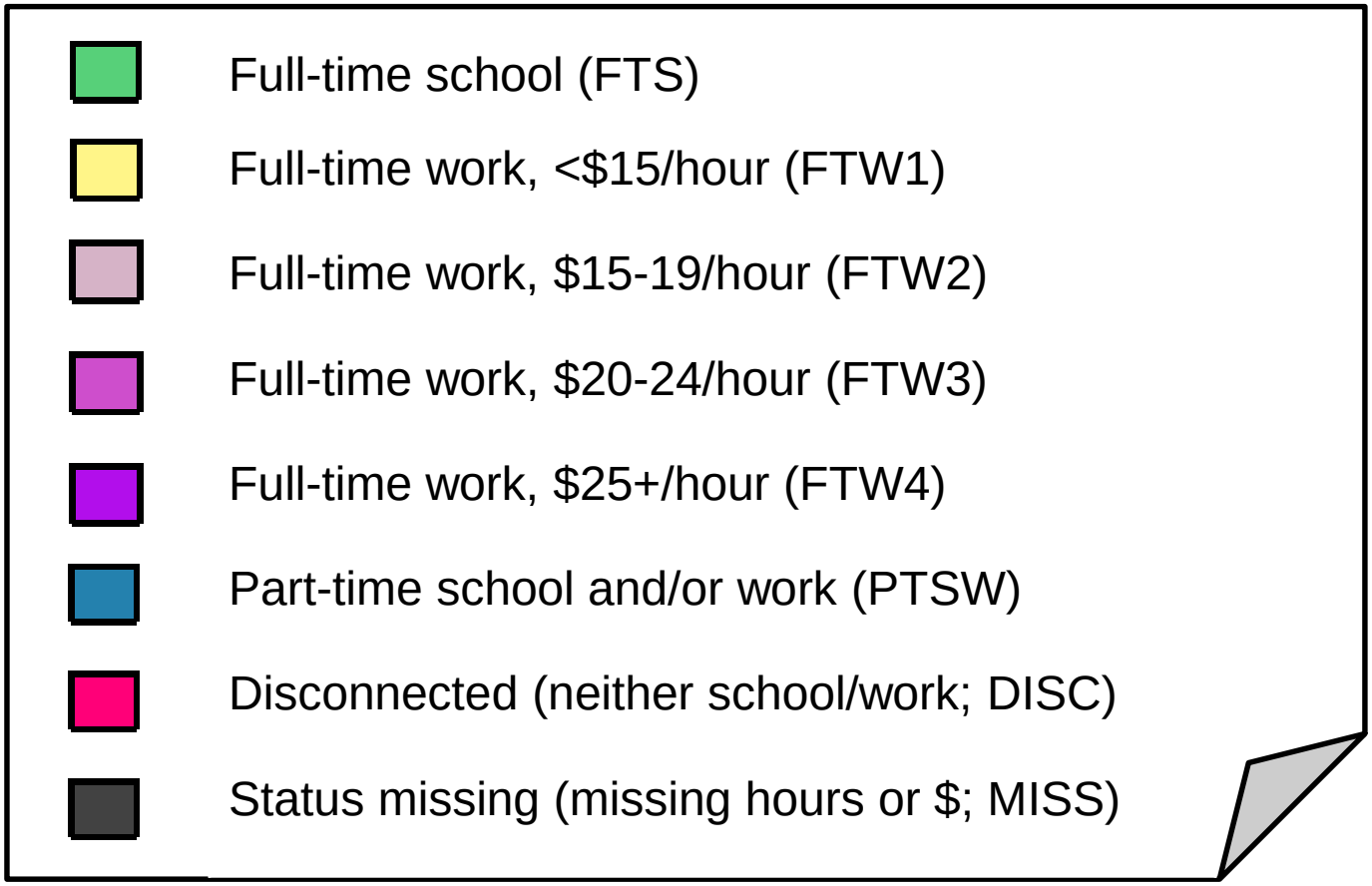

Percent in Various School-Work Statuses in Successive Follow-up Months

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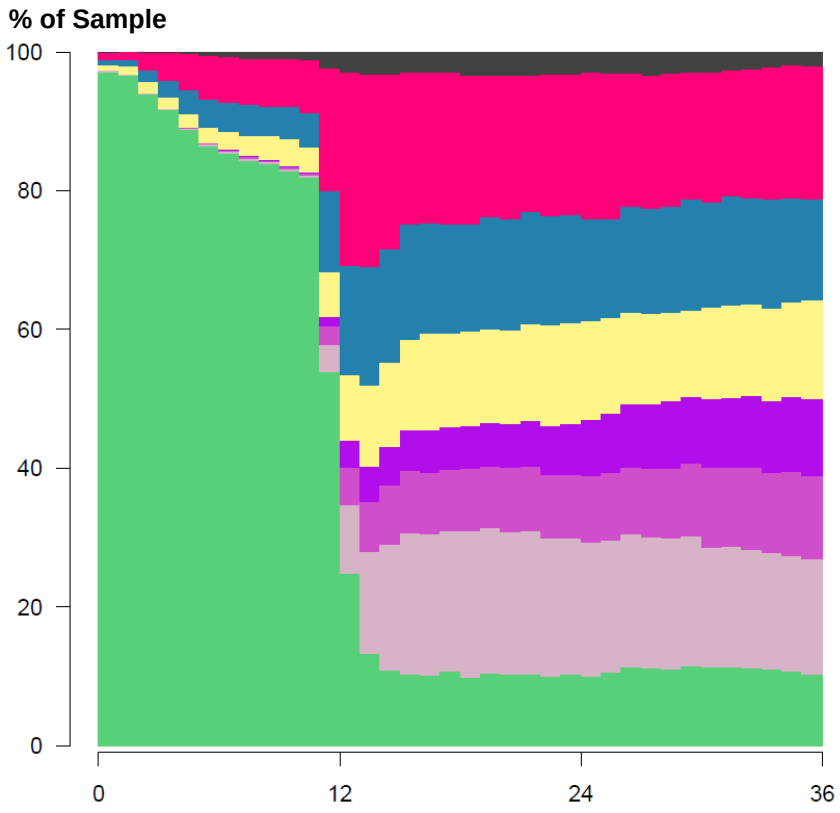
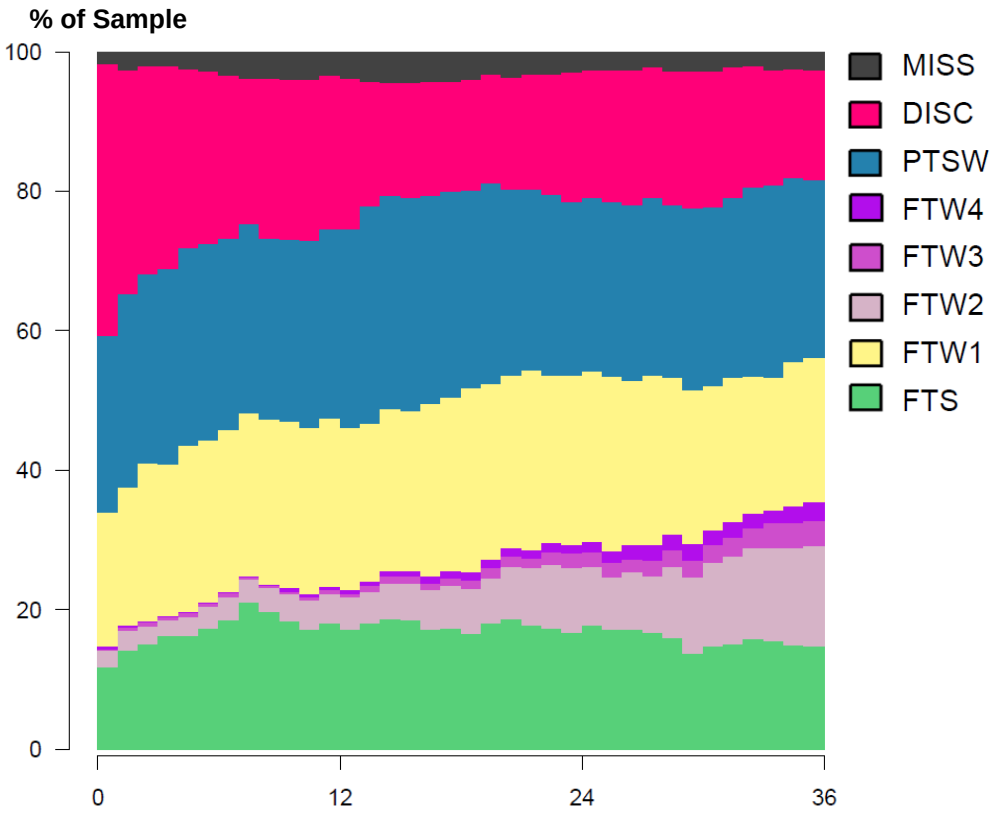
Treatment Group



Control Group



Months Since Random Assignment

Considering the Individual-Level Sequences Underlying these Distributions…

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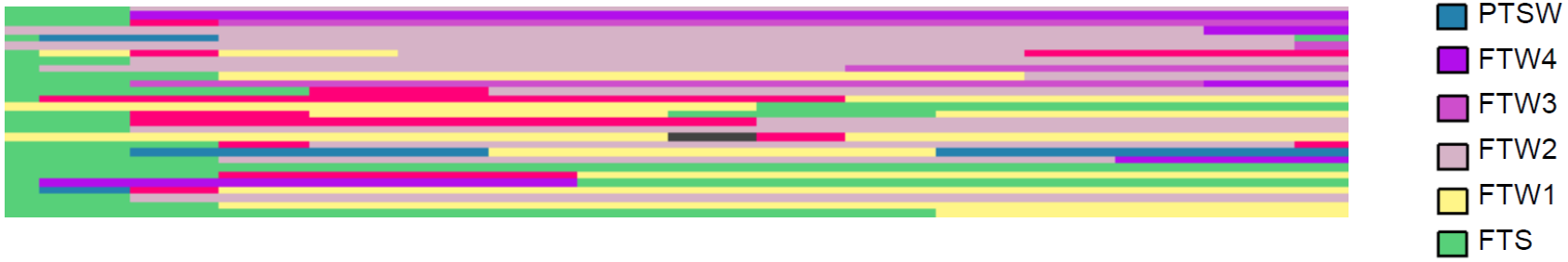
- The steps individuals take over the 36 months vary widely
- As evident in a sample of individual sequences (each row shows monthly statuses for a different person):



- Goal: Filter out small differences, measurement noise to identify clusters of individuals with similar sequence patterns

Analysis Approach

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- Step 1: compute summary "distance" measure for every possible pair of sequences in the sample
  - Changes are substitutions, insertions, and deletions of statuses, each with a defined cost
  - Distance is the cost of the minimum total cost of the changes needed to transform one sequence into the other in each pair
  - Creates an n x n distance matrix (n=sample size)
- Step 2: find clusters of similar sequences in this matrix
  - Use Partitioning Around Medoids (PAM) to find best 2, 4, 6, and 8-cluster solutions
  - Analyze clustering for the full sample and separately for treatment and control groups
- Software (R): TraMineR, WeightedCluster

Presenting Findings

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- Start with summary graphs for each cluster of sequences
  - Visual aids help us to recognize sequence patterns
  - E.g., “status distribution” over time; plots of individual sequences
- Then, assess statistical relationships between cluster membership and hypothesized correlates
- We found 8 salient clusters in the pooled sample (treatment and control)

- Before looking at status distributions for the 8 clusters, helpful to see how the status distribution for a cluster summarizes its underlying individual sequences…

The School-Work Status Distribution (top) Summarizes Individual Sequences (bottom) Assigned to a Cluster

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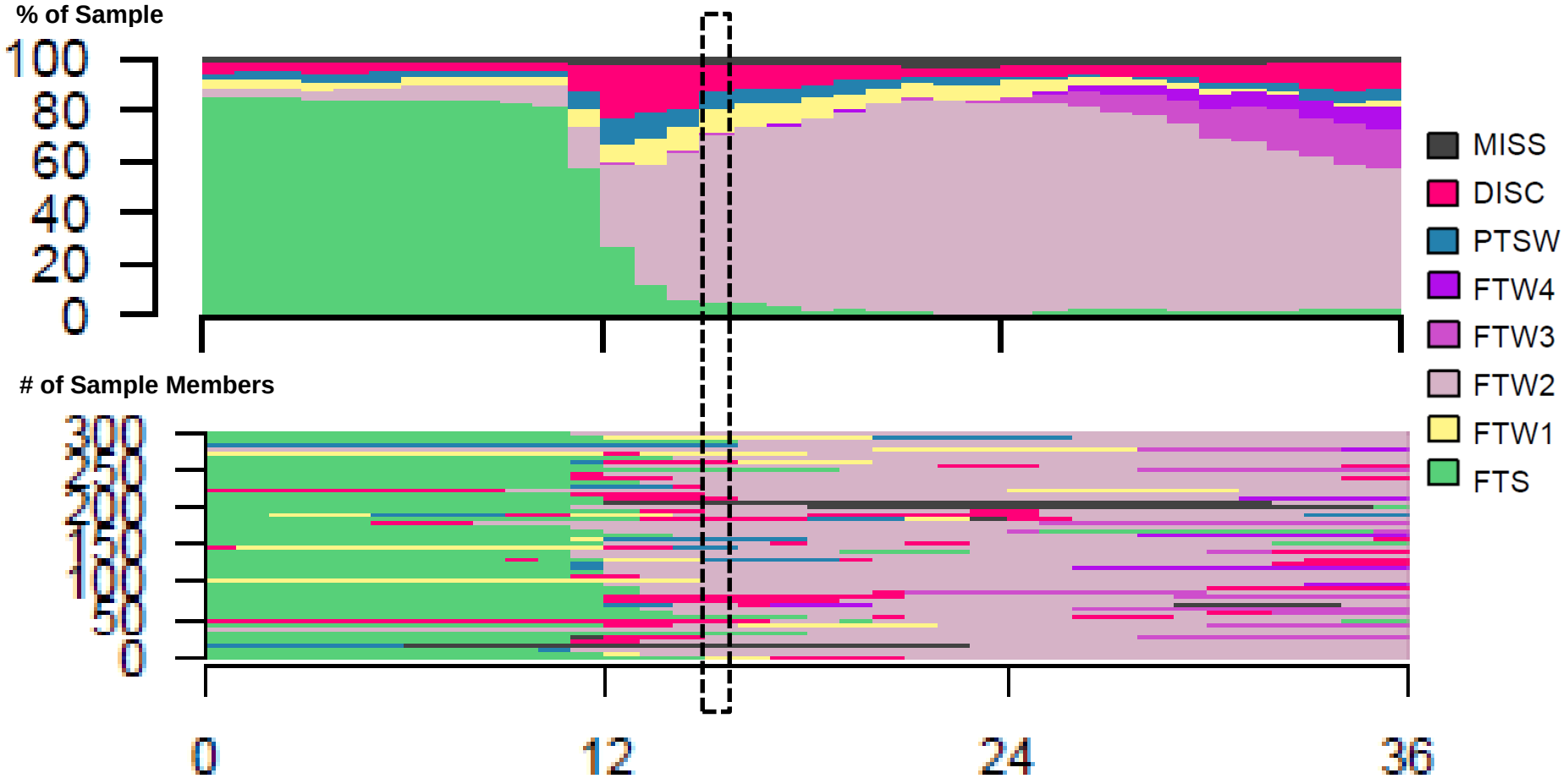

Status Distributions for 4 "Good" Sequence Clusters (8-Cluster Solution for the Pooled Sample)

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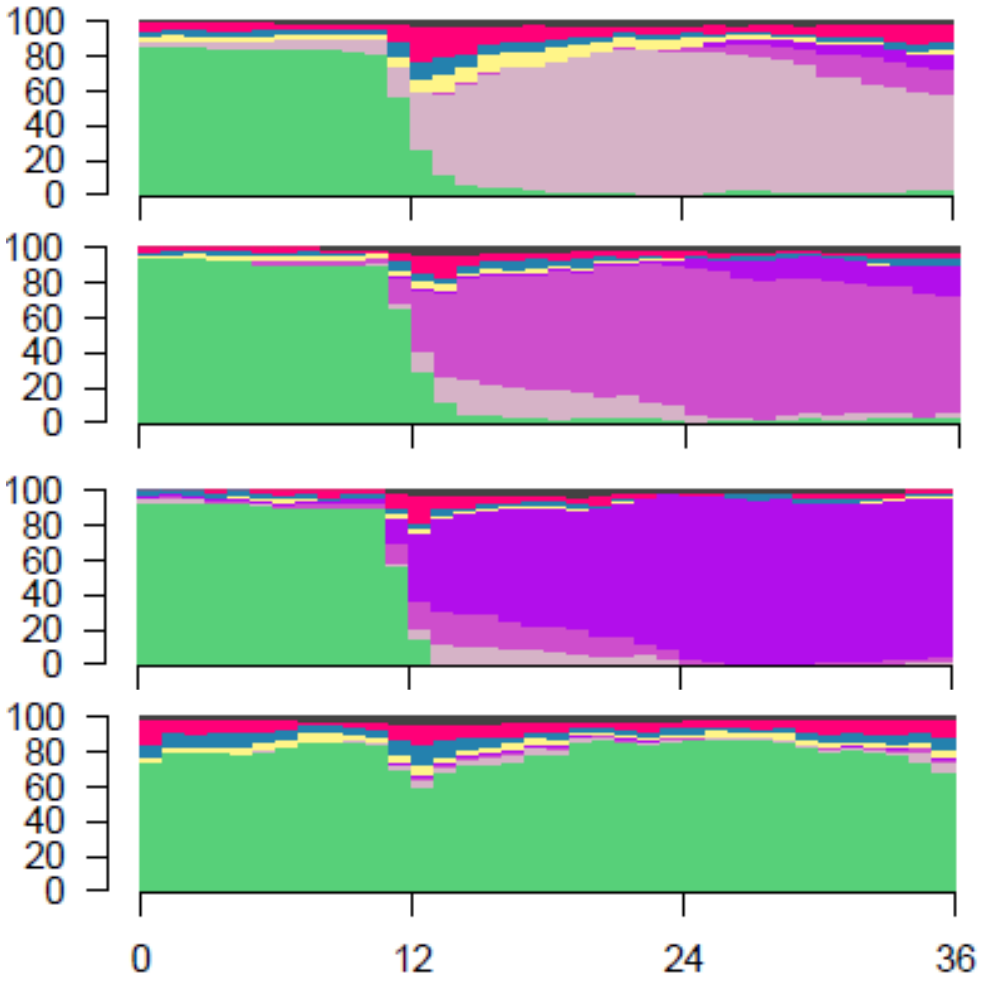

Cluster	% of all Ts	% of all Cs
FTS-FT**W2**	21	7
FTS-FT**W3**	10	1
FTS-FT**W4**	8	1
FTS-FTS	10	14

MISS
DISC
PTSW
FTW4
FTW3
FTW2
FTW1
FTS

(Continued)

Status Distributions for 4 "Not So Good" Sequence Clusters (8-Cluster Solution for the Pooled Sample)

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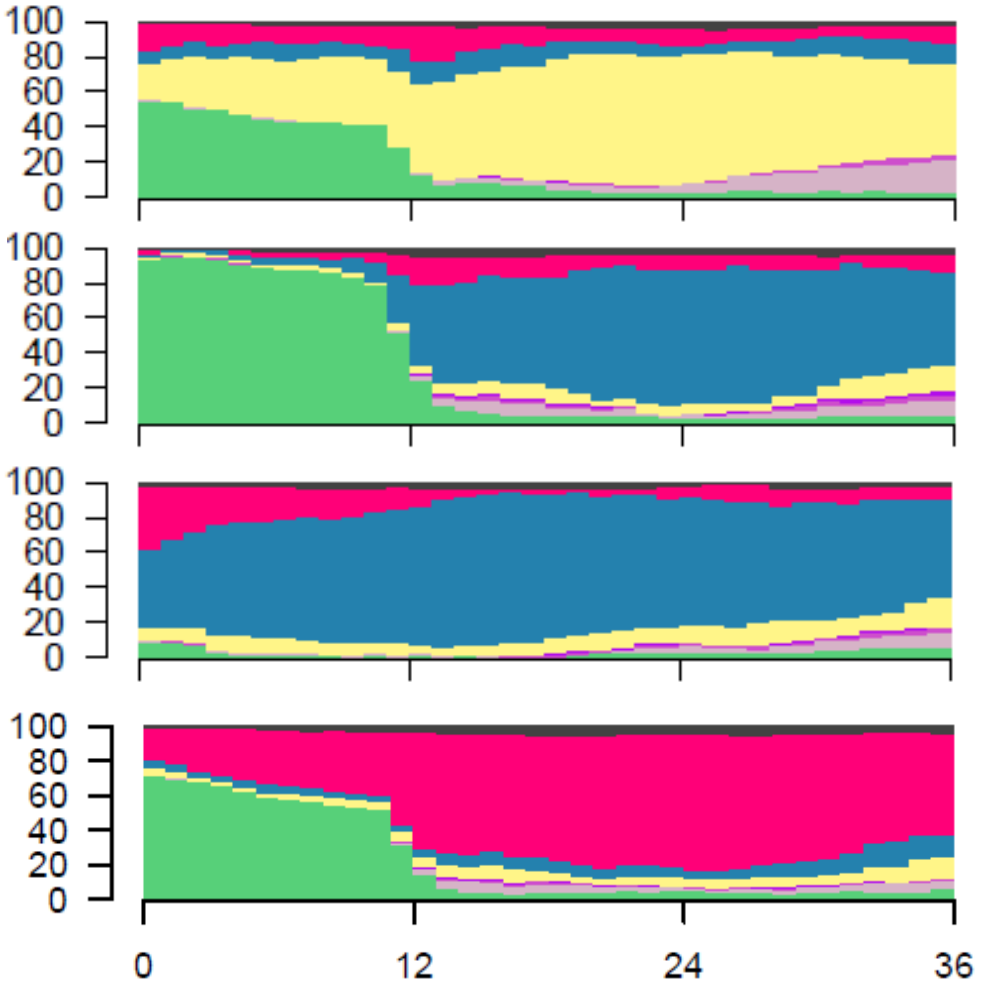

Cluster	% of all Ts	% of all Cs
FTS-FT**W1**	15	26
FTS-PTSW	13	3
PTSW-PTSW	2	28
FTS-DISC	21	19
All Clusters	100	100

MISS
DISC
PTSW
FTW4
FTW3
FTW2
FTW1
FTS

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Implications of Cluster Membership

Statistical Relationships between the 8 Sequence Clusters and Illustrative Characteristics

Average Quarterly Earnings by School-Work Cluster

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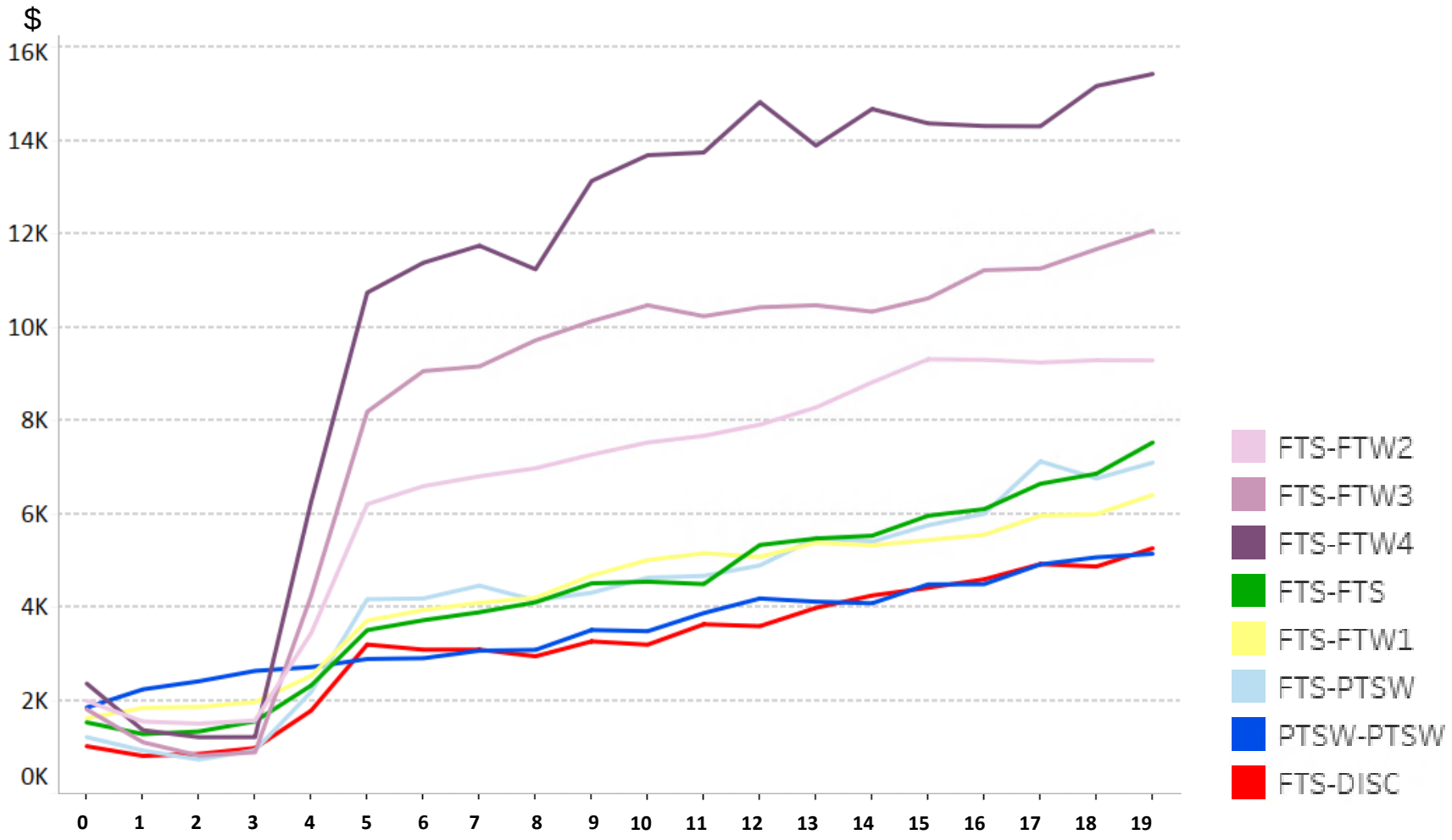

Follow-up Quarter

Percent of Treatment Group Members Placed in Internships Leading to Jobs

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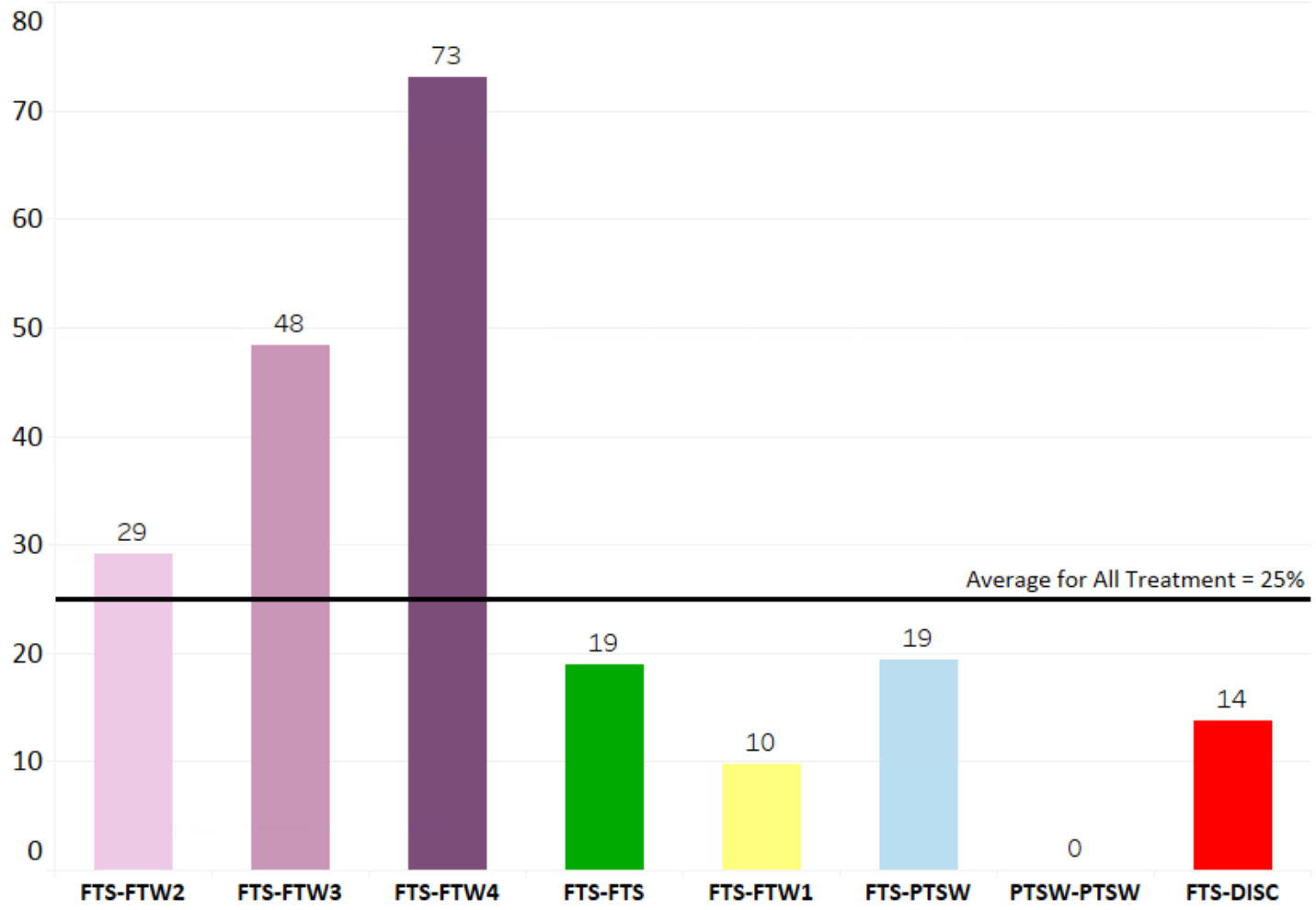

Among Female Sample Members, Likelihood of a Birth/Current Pregnancy

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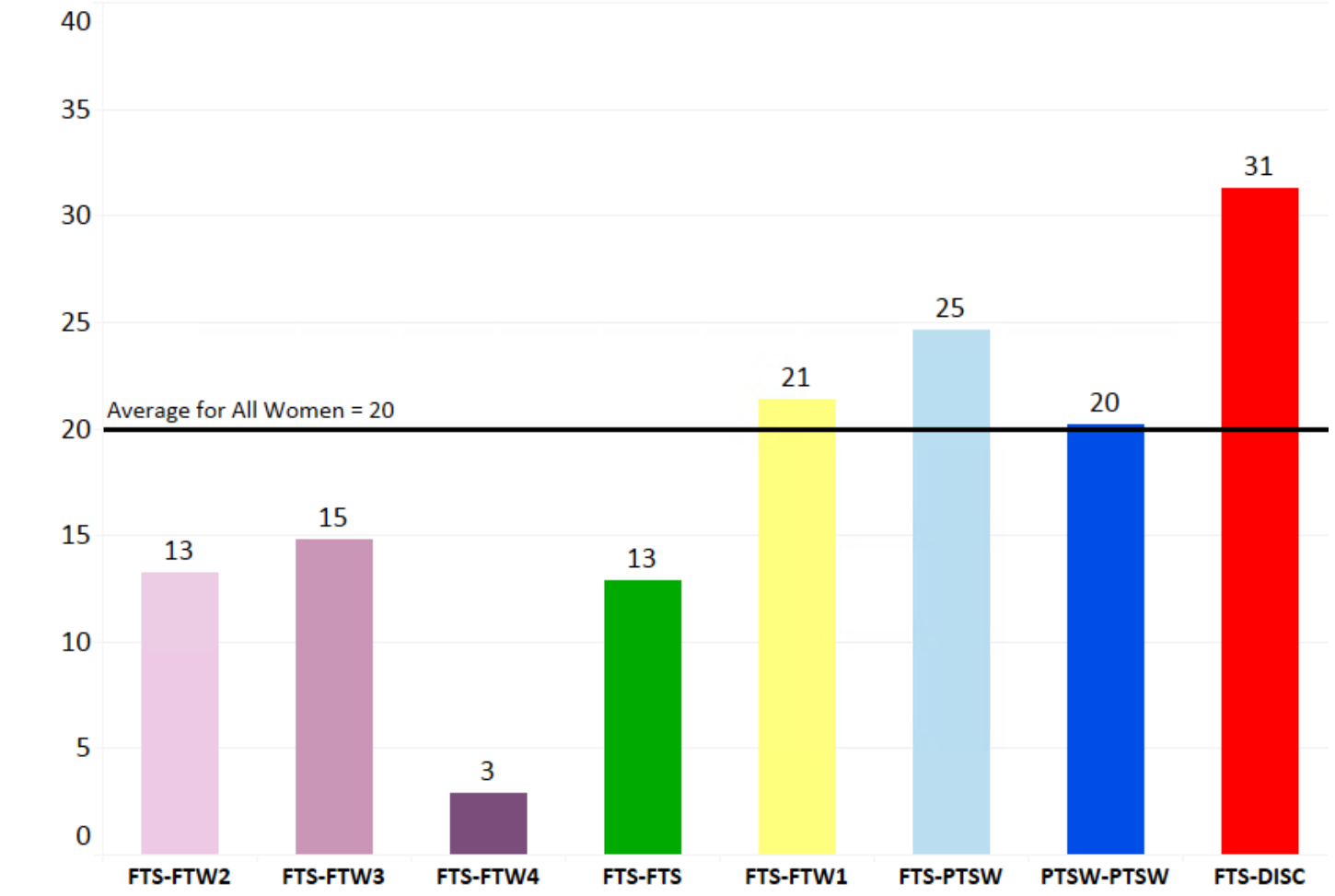

To Summarize

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- Analysis identifies 8 informative clusters of school-work sequences
- Good trajectories were most prevalent in the treatment group
  - And within the treatment group they are fairly concentrated
  - Particularly among young adults whose internships led to IT jobs
- Not so good trajectories – e.g., chronic disconnection, part-time employment – remain prevalent in both groups
- Though most clusters center on <=1 transition, multiple steps are not uncommon… (however, relatively few returns to school)
- Other analyses for paper show some Ts combined part-time school with full-time career-track jobs—but not many

Implications

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For RCTs of workforce programs

- Helpful in understanding trajectories underlying impacts on aggregate outcomes
- Applicable to occupation/career ladders, family formation
- Moderately strenuous data requirements

For programs and policy

- Sectoral programs need to work on broadening their benefits
  - Highly selective in targeting applicants (well-known)
  - Current findings suggest impacts also are concentrated
- And increase supports for subsequent career steps after initial ones

Forthcoming in the Rest of the Paper…

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- Separate cluster analyses for Ts and Cs
- Comparison of sequences in Year Up with VIDA, a longer-term college support program
- Analyses highlighting role of part-time school
- Sensitivity of results to alternative
  - Measures of distance between sequences
  - Clustering approaches
  - Data sources (administrative records)

For More Information Contact

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