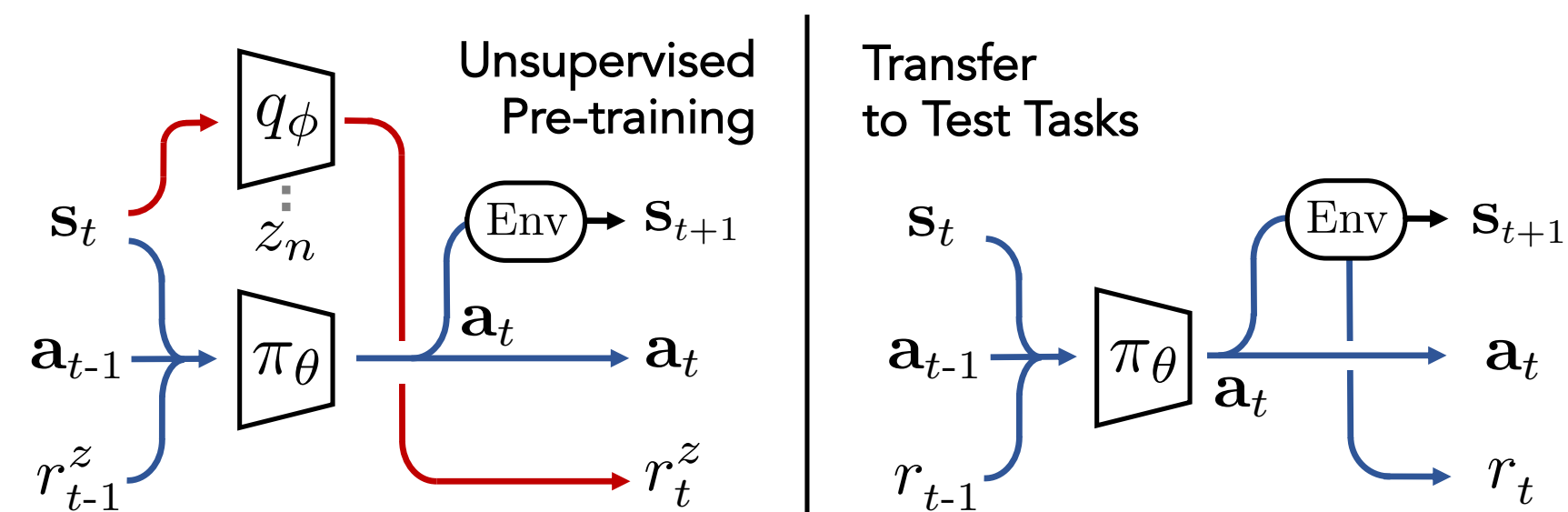


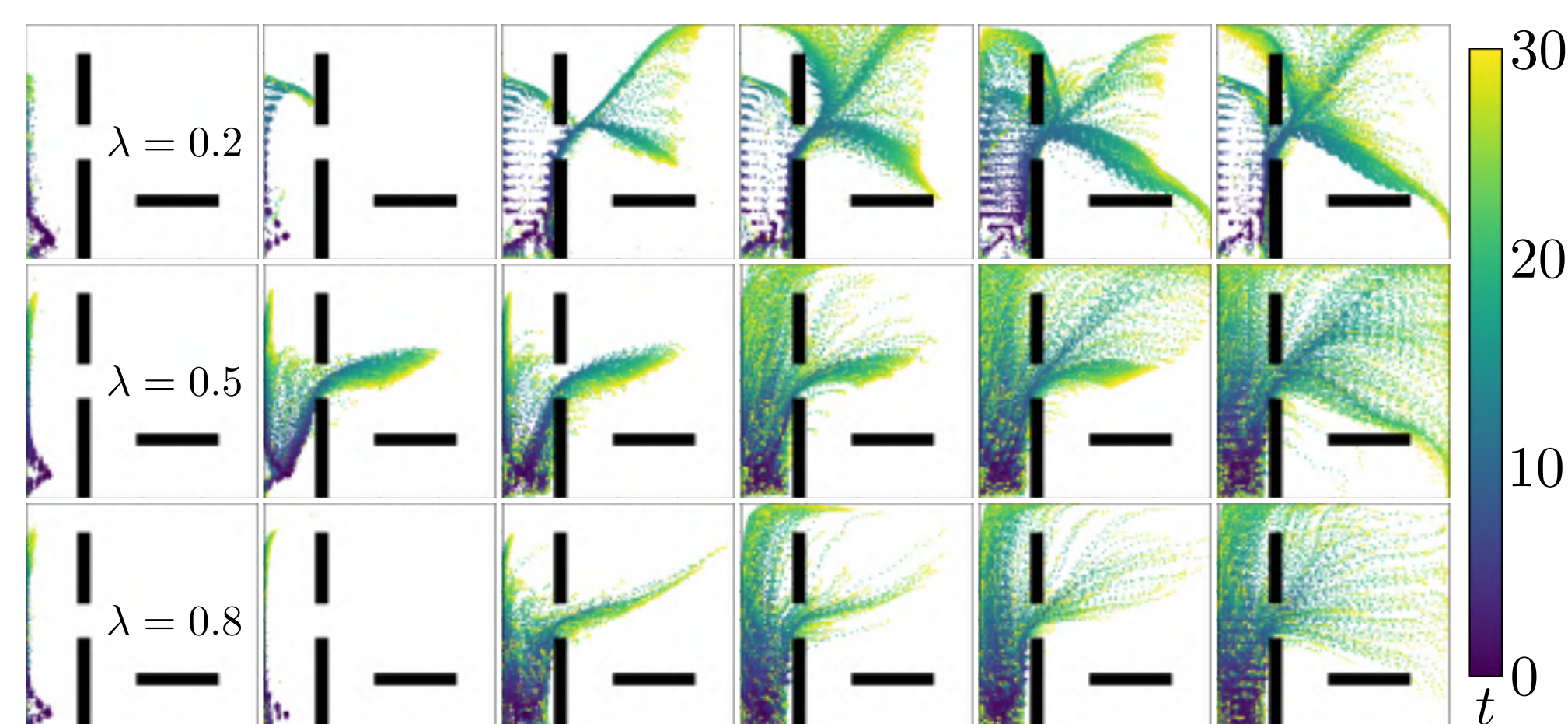
# Unsupervised Curricula for Visual Meta-Reinforcement Learning

Allan Jabri, Kyle Hsu, Ben Eysenbach, Abhishek Gupta, Sergey Levine, Chelsea Finn

**Motivation:** Can useful meta-RL tasks be discovered in an unsupervised manner?



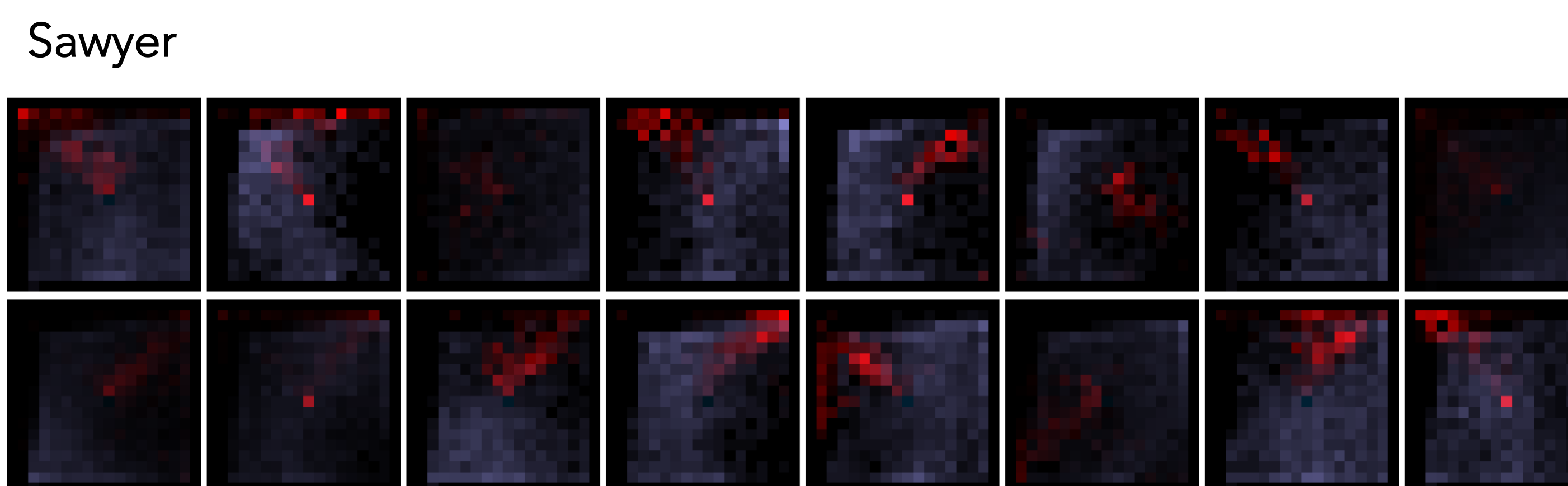
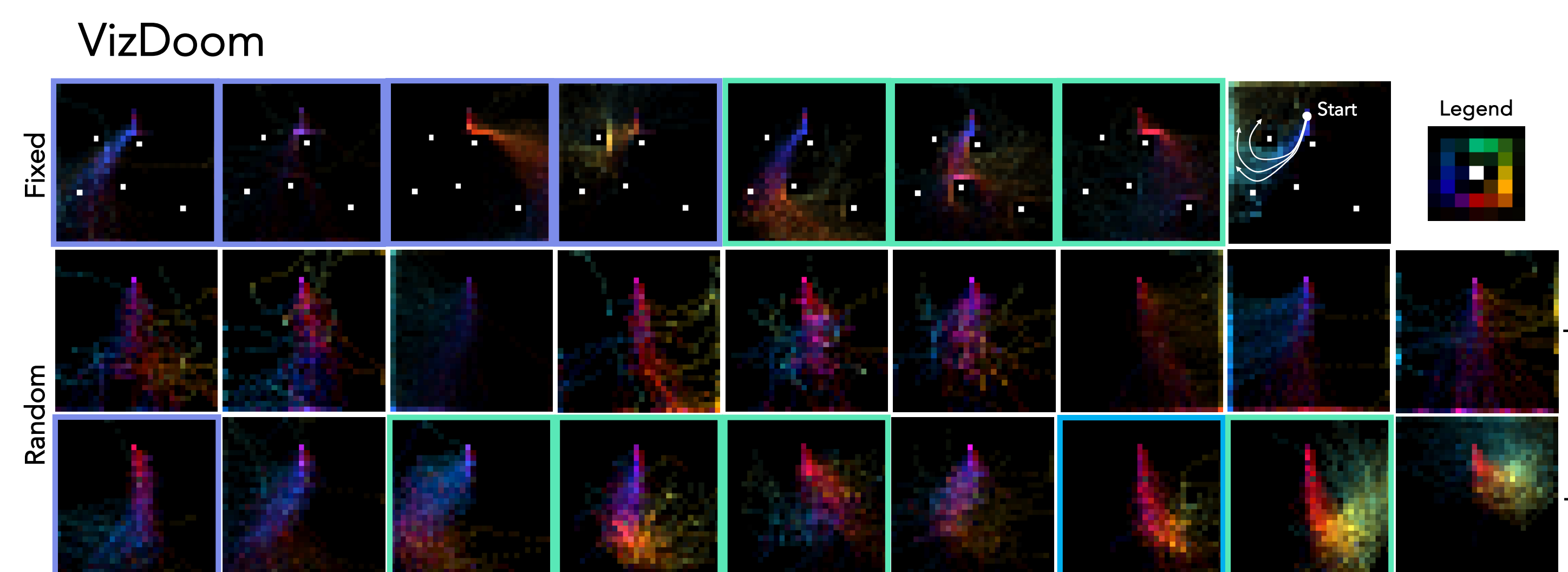
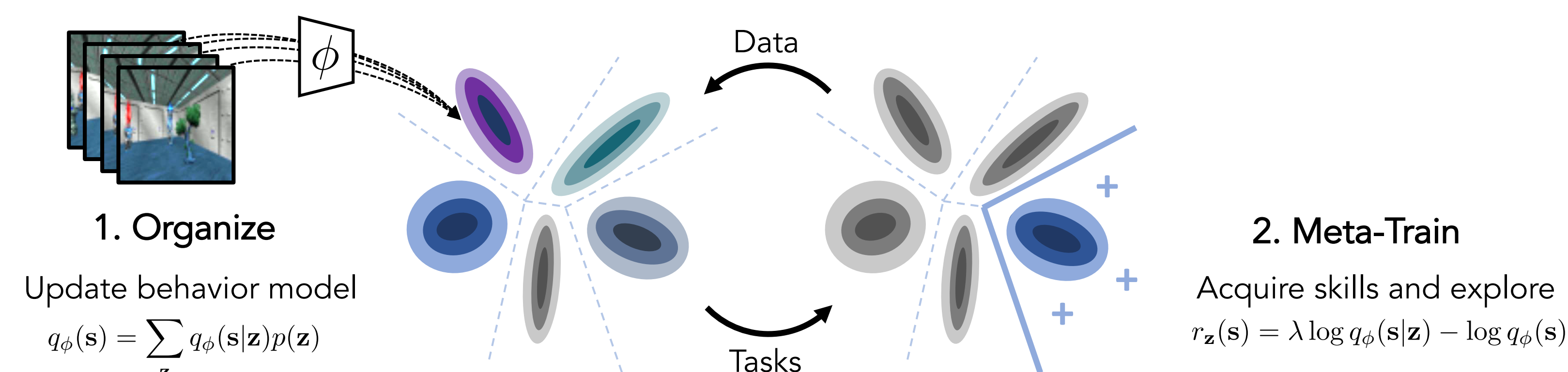
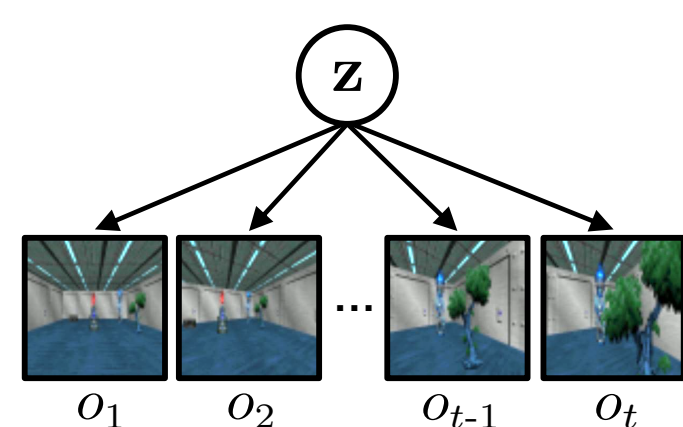
**Idea:** Search for useful tasks via information maximization between a meta-learner and a self-generated task distribution.



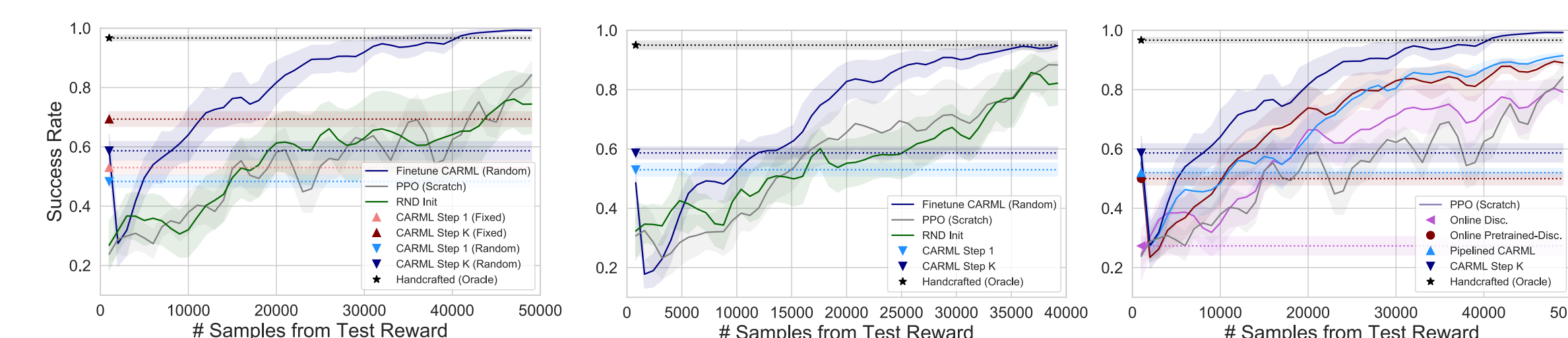
## Key Challenges:

1. Mode-collapse of task distribution in high-dimensional observation spaces.
2. Joint task acquisition and meta-learning.
3. Structure and Diversity in task distribution.

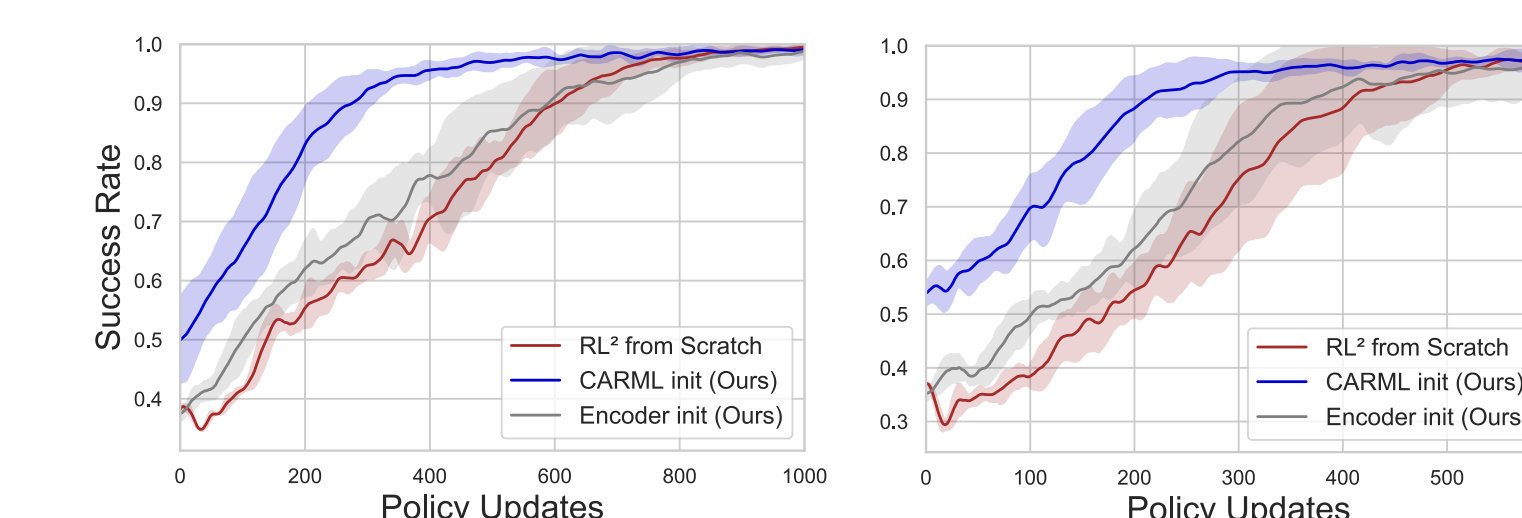
**Simplifying Assumption.** Conditional independence of observations along our trajectories



**Experiments** The acquired meta-RL strategies transfer to downstream test task distributions

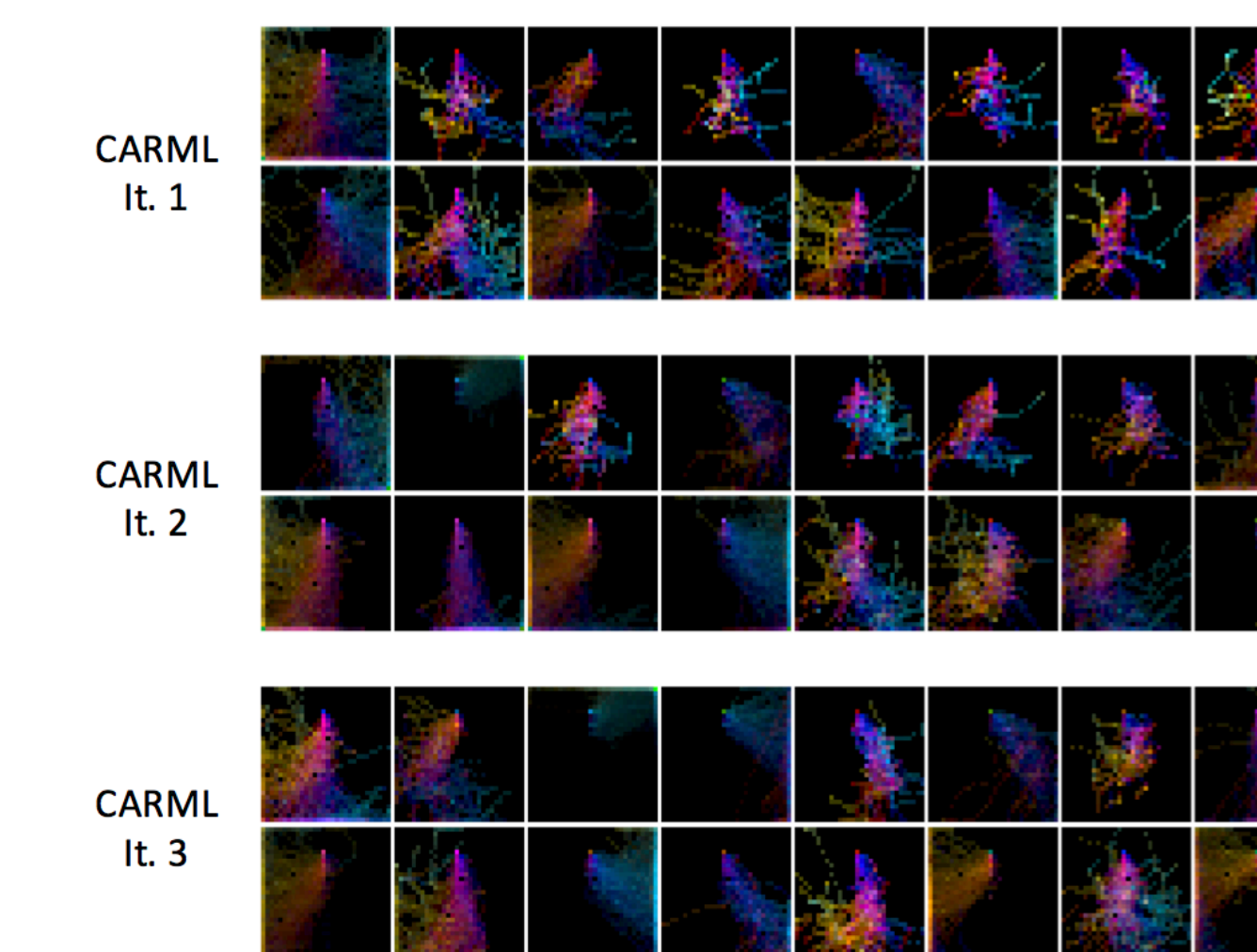


## Direct Transfer and Task-Specific Finetuning



## Meta-Pretraining: Accelerate Supervised Meta-RL

### Evolution of the Task Distribution



## Looking Forward

1. No free lunch -- Semi-supervised!
2. Non-visual task semantics
3. Convergence and Early Stopping
4. Forgetting