

Speaker: **Michael Gofman, Hebrew University**

Title: **Generative AI and the Senior-Junior Wage Premium: Theory and Evidence from U.S. Labor Markets**

Joint with Yigal Newman

Abstract:

We study how generative AI affects the wage premium of senior workers relative to junior workers. We develop a dynamic oligopoly model in which firms choose training for juniors and hiring of seniors while competing in product markets. AI raises productivity and increases the substitutability of seniors for juniors. A training network externality—capturing economies of density in shared training infrastructure—generates strategic complementarities. When AI progress exceeds a threshold, multiple steady states emerge: a high-training resilient equilibrium and a low-training “talent trap” with first-order welfare losses. Using U.S. Quarterly Workforce Indicators data from 2017–2025, we document that the senior-junior wage gap reversed sharply after ChatGPT’s release (Q4 2022), with the effect twice as strong in high-AI-exposure industries (Information, Finance, Professional Services). This reversal operates through natural attrition: high-AI sectors reduce junior hiring without increasing layoffs. Our findings are robust to placebo tests, event studies, matching estimators, synthetic control, and Bartik instrumental variables. The results support resilience-oriented competition policy that allows cooperation on training infrastructure while preserving product-market rivalry.