

# Timothy A. Hyde

POSTDOCTORAL FELLOW · ECONOMICS

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## Current Appointment

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2022 - **Gloria T. and Melvin J. (“Jack”) Chisum Postdoctoral Fellow**, University of Pennsylvania

## Education

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### Carnegie Mellon University

Pittsburgh, Pennsylvania

PHD ECONOMICS

2022

- Dissertation title: *Essays on Beliefs about Catastrophic Risks*
- Committee members:
  - Prof. Nicholas Muller (chair), CMU
  - Prof. Saurabh Bhargava, CMU
  - Prof. Dennis Epple, CMU
  - Prof. Lala Ma, University of Kentucky

### Yale University

New Haven, Connecticut

MA ECONOMICS

2014

### Stanford University

Stanford, California

BA ECONOMICS

2010

## Presentations

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2022: Lindau Nobel Laureate Meetings (virtual), Northeast Workshop on Energy Policy and Environmental Economics, Association of Environmental and Resource Economists Summer Conference

2020: Association of Environmental and Resource Economists Summer Conference (virtual).

## Teaching Experience

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Spr 2021	<b>Behavioral Economics in the Wild</b> , Instructor	CMU
Spr 2020	<b>Principles of Economics</b> , Teaching Assistant	CMU
Fall 2019	<b>Principles of Economics</b> , Teaching Assistant	CMU
Spr 2014	<b>Introductory Microeconomics</b> , Teaching Fellow	Yale
Fall 2009	<b>Health Economics</b> , Teaching Assistant	Stanford

## Research Papers

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How do homebuyers adapt after experiencing a natural disaster? Evidence from the Florida real estate market (**JMP**)

- In this work, I test the hypothesis that large flood events shock nearby residents and affect their future real estate purchase habits, even in distant markets. I leverage the natural experiment created by the random timing of flood disasters in the United States and draw on data from over 5 million Florida real estate transactions between 2005 and 2017. I find that flood disaster events in U.S. counties outside Florida have notable effects on buying patterns when residents from those counties subsequently enter Florida real estate markets. These “disaster shocks” lead to an overall decrease in single-family home purchases in eleven coastal Florida metro areas, and to a shift in purchases away from properties near the coast, with sharp – but transient – decreases of 15% to 20% for properties within 3.5 km of the water, relative to farther inland. Using hedonic property models, I find that this retreat pattern can significantly decrease the amenity value of water proximity when an unusually large number of shocked buyers enter a Florida market. I employ a

residential sorting model to estimate the effect of disaster exposure on demand, and measure the welfare consequences under various assumptions about welfare-relevant preferences.

### Financial conservatism in the field (joint with Saurabh Bhargava)

- Economists have long sought to measure individual preferences for taking financial risks. Inferring risk preferences from the field is, however, practically complicated by limited generalizability (game shows), potential confounds such as biased beliefs (betting markets), or imperfect understanding of the choice (health insurance). We overcome these challenges with unusually rich data detailing the financial decisions and beliefs of a diverse sample of 20,000+ employees from 100+ U.S. firms in the context of sales goal rewards program administered by an outside consulting firm. We first document significant financial conservatism in the goal choices of employees relative to first-best, ex post, realizations. This conservatism led to a median foregone reward of \$175 and held even for large financial stakes (> \$2,500) and among the most experienced employees. Second, we show that an EU framework with rational expectations of goal attainment and plausible assumptions of risk aversion cannot rationalize the observed conservatism, nor can accounting for subjective beliefs of employees. To generate direct evidence of mechanisms, we examine the goal choices of experimental subjects in an incentive-compatible rewards paradigm layered atop an online effort task. The paradigm indicates that conservative goal choices in our data do not emerge from risk preferences, biased beliefs, or common departures from EU, but instead reflect a menu-driven choice heuristic. Collectively, our findings emphasize that accurate inference of risk preferences from the field must be informed by an understanding of the underlying decision process and highlight the high welfare stakes of decision aids and careful menu design.

### Behavioral erosion of private knowledge in insurance risk (joint with Saurabh Bhargava)

- Economists have long asserted the seminal role of individuals' private knowledge of risk for understanding insurance markets. While most researchers practically assume that beliefs about such risk are unbiased, findings from behavioral science suggest perceptions of insurance risk may be subject to substantial, and systematic, error. We study unique data from a user-based insurance program administered by a U.S. auto insurer, including telematics data on actual driver risk linked to a detailed survey eliciting driver forecasts of risk, measures of risk preferences, hypothetical insurance choice, and several decision-making assessments. These linked data allow us to measure the degree of private knowledge in this market, the extent to which such knowledge is eroded by predictable behavioral bias, and the implications of erosion for the empirical literature on adverse selection. We find that while a driver has private knowledge of their marginal risk, relative to other similar drivers, that is unobserved by the insurer (i.e., cannot be predicted from insurer ratings variables), most drivers significantly underestimate their average insurance risk. Using driver forecasts and surveyed measures of decision-making, we estimate a "behaviorally-adjusted" risk forecast that suggests that behavioral bias significantly erodes potential private knowledge of risk on average. Finally, we use hypothetical insurance choices from the same sample of drivers to show that behavioral erosion offers a possible resolution to the documented empirical puzzle of insufficient adverse selection within a given insurance market and overly varying adverse selection across markets (Cutler, Finkelstein, McGarry 2008).

### How do risk perceptions change after a disaster? Evidence from flood-prone counties (joint with Caroline Hopkins)

- Prior research has documented a tendency for insurance demand to rise abruptly in the aftermath of natural disasters. We study this phenomenon in action using a longitudinal survey of 1,582 residents of coastal U.S. counties spanning the busy hurricane seasons of 2017-18. First, we study the effect of randomized exposure to neighborhood flood maps. We find clear evidence that information exposure affects beliefs about future flooding, and differentially impacts respondents with more vulnerable homes. Second, we use hurricane exposure in 2017 and 2018 as a quasi-experimental treatment and find that perceived risk and worry attenuate quickly as past storms recede into memory. By contrast, we find minimal evidence that exposure to Hurricane Florence between survey waves increased risk perceptions, although our test is underpowered due to the limited geographic reach of that storm. The large swings in beliefs we observe suggest a subtle decision-making process that may complicate climate adaptation.

## Works in Progress

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Belief externalities: coronavirus attitudes and altruism (joint with Nicholas Muller).

Enticing biased insurance consumers in a model with asymmetric information (joint with Ali Polat).

## Textbook

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Bhattacharya, Jay, Timothy Hyde, Peter Tu. 2013. *Health Economics* (textbook), Palgrave MacMillan.