

**ANGELA E. KILBY**  
**JANUARY 2022**

**Contact  
Information** Department of Economics  
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**EDUCATION/EMPLOYMENT HISTORY**

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| <b>Academic<br/>Positions</b>              | Assistant Professor of Economics<br>Northeastern University   | 2017 – Present |
|  | Affiliate Member, Institute for Experiential AI,<br>Northeastern University   | 2021 – Present |
|  | NBER/ NIA Post-Doctoral Fellow in<br>Aging and Health Research  | 2016 – 2017    |
| <b>Education</b>                           | Ph.D. Economics<br>Massachusetts Institute of Technology<br><i>Dissertation:</i> “The Economics of Pain Management”<br><i>Advisors:</i> Jonathan Gruber, Amy Finkelstein,<br>Heidi Williams<br><i>Fields:</i> Health, Public Finance, Development | 2016           |
|  | S.B. Economics<br>S.B. Political Science<br>Massachusetts Institute of Technology   | 2007           |
| <b>Previous<br/>Relevant<br/>Positions</b> | Co-founder and Chief Economist at Adherean, Inc.  | 2011 – 2013    |
|  | Research Analyst for Rachel Glennerster<br>Jameel Poverty Action Lab  | 2009 – 2011    |
|  | Research Assistant to Ben Olken and Rema Hanna<br>Jameel Poverty Action Lab and World Bank Indonesia  | 2008 – 2009    |
|  | Luce Scholar (Indonesia)<br>and Researcher, Akatiga Foundation  | 2007 – 2008    |

## RESEARCH/SCHOLARSHIP/CREATIVE ACTIVITY

### Publications

Kilby, Angela E. “Algorithmic Fairness in Predicting Opioid Use Disorder Using Machine Learning.” In *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency*, 272. FAccT ’21. New York, NY, USA: Association for Computing Machinery, 2021.  
<https://doi.org/10.1145/3442188.3445891>.

#### **Media Coverage:**

*Wired*,

[“The Pain Was Unbearable. So Why Did Doctors Turn Her Away?”](#)

### Works in Progress and Other Manuscripts

Kilby, Angela. “Opioids for the masses: Welfare tradeoffs in the regulation of narcotic pain medications.” June 2021.  
(under review)

#### **Media Coverage:**

*The Boston Globe*,

["With opioids, can you fight addiction without causing pain?"](#)

*The Boston Globe*,

[“Strict opioids laws hit chronic pain sufferers hard”](#)

*The Chicago Tribune*,

["Column: Fewer opiates mean more suffering"](#)

*Quartz*,

["What’s killing white, middle-aged women in America?"](#)

*Marginal Revolution*,

["Opioids for the masses?"](#)

Guo, Jiawei, Angela Kilby, and Mindy Marks. “The Impact of Scope-of-Practice Restrictions on Access to Medical Care.” July 2021. (under review)

Kilby, Angela and Charlie Denhart. “Location inference on social media data for agile monitoring of public health crises: An application to opioid use and abuse during the Covid-19 pandemic.” October 2021. (under review)

Kilby, Angela. “Algorithmic Fairness in Predicting Opioid Use Disorder Using Machine Learning.” January 2021.

Kilby, Angela, Zachary Finn, Byron Wallace, and Leo Beletsky. "Machine learning to predict and prevent opioid use disorder and opioid overdose: A systematic literature review." October 2021.

Kilby, Angela. "The Medicaid expansion and increased access to prescription medications: Implications for the opioid overdose crisis." 2021.

**Popular Press Publications**

Gruber, J. and Kilby, A. ["Opinion. The Senate health bill would make the epidemic worse. Here's how."](#) Washington Post. July 13, 2017.

**Invited and Accepted Presentations and Discussions**

Northeastern University Institute for Experiential AI Expeditions in Experiential AI Series: Invited talk for "Algorithmic Fairness in Predicting Opioid Use Disorder Using Machine Learning" 2021

NBER Conference on Machine Learning in Health Care: Accepted presenter for "Algorithmic Fairness in Predicting Opioid Use Disorder using Machine Learning" 2021

Accepted presenter, American Public Health Association, "Big Data Needs Big Ethics:" Algorithmic Fairness in Predicting Opioid Use Disorder using Machine Learning 2020

Invited speaker, Bentley University Department of Economics: Algorithmic Fairness in Predicting Opioid Use Disorder using Machine Learning 2020

Presentation at Faculty Works in Progress Colloquium Series: Algorithmic Fairness in Predicting Opioid Use Disorder using Machine Learning 2019

Paper presentation at Stanford Institute for Theoretical Economics (SITE) Occupational Licensing Conference: The Impact of Scope-of-Practice Restrictions on Access to Medical Care (with Jiawei Guo and Mindy Marks) 2019

Discussant at Empirical Health Law Conference (BU 2019), "Regulating Opioid Supply in Canada through Insurance Coverage" 2019

Guest lecturer for NUSL 7447: "Economics, Econometrics, and Causal Inference" 2019

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|   | Invited speaker: Drug Dependence Epidemiology Training (DDET) Program Fellows at Johns Hopkins School of Public Health   | 2017        |
|   | Discussant at 2017 ASSA, “Evaluating Behavioral Policy Applications Using Administrative Data”   | 2017        |
|   | Association for Public Policy Analysis and Management invited presentation, ‘Opioids for the Masses,’ in session <i>the Role of Research in making Government more Effective</i>   | 2016        |
|   | Invited speaker: Tri-State Occupational Medicine Association (TSOMA) annual conference   | 2016        |
|   | Invited speaker: Providers’ Clinical Support System For Opioid Therapies (PCSS-O)  | 2016        |
| <b>Fellowships, Honors, and Awards for Research and Scholarship</b> | NBER/ NIA Post-Doctoral Fellowship in Aging and Health Research  | 2016 – 2017 |
|   | NBER Health and Aging Pre-Doctoral Fellowship  | 2015 – 2016 |
|   | National Science Foundation Graduate Research Fellowship   | 2011 – 2016 |
|   | Henry Luce Scholar   | 2007 – 2008 |
|   | Lemelson-MIT prize, IDEAS Competition  | 2007        |
|   | Political Science department Outstanding Thesis Award  | 2007        |
|   | Sigma Xi   | 2007        |
| <b>Ongoing Data Collaborations</b>                                  | Extracting geospatial data from social media to understand and characterize illicit opioid markets (collaboration with the Crime and Justice Policy Lab at the University of Pennsylvania, formerly NU Center on Crime and Community Resilience) |             |
|   | <a href="#">“Lost on the Frontline”</a> – constructing a database of U.S. health care workers who died due to COVID-19 contracted on-the-job (with Kaiser Health News and the Guardian)  |             |

## GRANTS

### Internal Grants

Machine learning to predict and prevent opioid use disorder: clinical value, health equity, and algorithmic fairness  
 PIs: Angela Kilby, Leo Beletsky, and Byron Wallace  
 TIER 1 grant  
 Status: Funded  
 Amount Awarded: \$49,940  
 Dates of award: July 1, 2020 -- March 31, 2022

## TEACHING AND ADVISING

### Courses

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| Econ 1230: Healthcare and Medical Economics  | 2021        |
| Econ 3413: Health Economics and Health Care Policy (new course developed)  | 2020 – 2022 |
| Econ 7200: Health Economics and Health Care Policy (new course developed)  | 2017 – 2021 |
| Econ 3916: Health Economics and Health Care Policy (new course developed)  | 2017 – 2019 |
| Econ 7976: Research Directed Study   | 2021        |
| Econ 4971: Junior/Senior Honors Thesis   | 2019        |
| Econ 4991: Research  | 2019        |
| 14.21 Health Economics (Undergraduate)<br>Teaching Assistant to Professor Jeffrey Harris, MIT  | 2016        |
| 14.31/14.310 Data Analysis for Social Scientists (Undergraduate/Graduate). Teaching Assistant to Professors Esther Duflo and Sara Ellison, MIT | 2016        |
| 14.01 Principles of Microeconomics (Undergraduate)<br>Teaching Assistant to Professor Jeffrey Harris, MIT                                      | 2014        |
| 14.01 Principles of Microeconomics (Undergraduate)<br>Teaching Assistant to Professor Jonathan Gruber, MIT                                     | 2013        |

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| <b>Supervision of Graduate Students</b> | Ph.D. Committee for Jiapei Guo (expected completion: 2021) | 2019 – 2020 |
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| <b>Supervision of Undergraduate Students</b> | Supervised Senior Honors Thesis for Jackson Reimer (completed 2019) | 2017 – 2019 |
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| <b>Other Advising Activities</b> | <p><i>Ph.D. research advising:</i> Zachary Finn, Philip Rubin-Streit</p> <p><i>Master's research advising:</i> Shuyuan Zhou</p> <p><i>Plus-One research advising:</i> Charles Denhart, Ciara Tenney, Maggie Rodriguez</p> <p><i>Undergraduate research advising:</i> Jackson Reimer, Jessica Ofurie, August Granath, Jennifer Goldberg, Pooja Amin, Joshua Bao, Sawyer Dixon, Advising as part of the Dean's Collaborative Research Award program</p> |  |
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| <b>Honors and Awards for Teaching</b> | CSSH Outstanding Teaching award | 2020 |
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## SERVICE AND PROFESSIONAL DEVELOPMENT

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| <b>Service to the Institution</b> | Member, Faculty Search Committee in Artificial Intelligence/Technology Policy      | 2021 – 2022    |
|                                   | Northeastern University Research Computing Committee                               | 2020 – present |
|                                   | CSSH Outstanding Teaching Award Committee  | 2020 – present |
|                                   | Chair, Department of Economics Undergraduate Research Committee (member 2019-2020) | 2020 – present |
|                                   | Department of Economics Seminar Committee  | 2017 – present |

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| <b>Service to the Discipline</b> | Referee for <i>Quarterly Journal of Economics</i> , <i>American Economic Journal: Economic Policy</i> , <i>Journal of Health</i> |  |
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*Economics, Forum for Health Economics & Policy,  
Addiction, NeurIPS (Conference on Neural Information  
Processing Systems)*

**Honors and  
Awards for  
Service**

MIT Graduate Student Council Service Award 2013

**Professional  
Development**

NUSL Workshops on Promises and Perils of PDMPs 2019

NBER Machine Learning in Health Care workshops  
(invited participant) 2019

RAND Summer Institute – Workshops on Demography,  
Economics, Psychology, and Epidemiology of Aging,  
and the Mini-Medical School for Social Scientists  
(accepted participant) 2018