

# Assistant Professor Francis Dennig

Yale-NUS College  
12 College Ave West, #01-201  
Singapore 138610

Email: [fdennig@yale-nus.edu.sg](mailto:fdennig@yale-nus.edu.sg)  
Website: <https://fdennig.github.io/>  
Updated in November 2021

## Current position

2021 *Economist* – World Bank Group, Washington, D.C.  
since 2015 *Assistant Professor* (on leave in 2021) – Yale-NUS College, Singapore

## Research interests

Environmental economics; economics of climate change; economics of inequality; economics of education and intergenerational mobility

## Past positions

2018-19 *Fellow at the Center for Advanced Study in the Behavioral Sciences* – Stanford University  
2013-15 *Values and Public Policy Associate* – Princeton School of Public and International Affairs, Princeton University  
2012 *Dissertation fellow* – Inter-American Development Bank  
2012 *Visiting researcher* – Institute for Global Change Studies, Tsinghua University  
2012 *Delegate for Paraguay* – COP18, Doha

## Education

2009-13 D.PHIL in Economics, *On the welfare economics of climate change*, University of Oxford  
2007-09 M.PHIL in Economics (with Distinction), University of Oxford  
2004-07 B.Sc in Mathematics, ETH Zürich

## Grants & awards

2019-22 NUS Grant on climate change and health impact modelling (40,000 SGD)  
2009-12 Doctoral fellowship, Economics and Social Research Council (ESRC), UK (full scholarship and living expenses)

## Research

### JOURNAL ARTICLES

- 2021 Budolfson, M., **Dennig, F.**, Errickson, F., Feindt, S., Ferranna, M., Fleurbaey, M., Klenert, D., Kornek, U., Kuruc, K., Méjean, A., Peng, W., Scovronick, N., Spears, D., Wagner, F., Zuber, S., “Climate action with revenue recycling has benefits for poverty, inequality and well-being,” *Nature Climate Change*, November 2021, 1–6, <https://doi.org/10.1038/s41558-021-01217-0>
- Budolfson, M. B., Anthoff, D., **Dennig, F.**, Errickson, F., Kuruc, K., Spears, D., Dubash, N. K., “Utilitarian benchmarks for emissions and pledges promote equity, climate and development,” *Nature Climate Change*, 2021, <https://doi.org/10.1038/s41558-021-01130-6>
- Scovronick, N., Anthoff, D., **Dennig, F.**, Errickson, F., Ferranna, M., Peng, W., Spears, D., Wagner, F., Budolfson, M., “The importance of health co-benefits under different climate policy cooperation frameworks,” *Environmental Research Letters* 16, no. 5 (2021): 055027, ISSN: 1748-9326, <https://doi.org/10.1088/1748-9326/abf2e7>
- 2020 Scovronick, N., Ferranna, M., **Dennig, F.**, Budolfson, M., “Valuing Health Impacts In Climate Policy: Ethical Issues And Economic Challenges,” *Health Affairs* 39, no. 12 (2020): 2105–2112, ISSN: 0278-2715, <https://doi.org/10.1377/hlthaff.2020.01117>
- Kraemer, M. U. G., Pigott, D. M., Hill, S. C., Vanderslott, S., Reiner, R. C., Stasse, S., Brownstein, J. S., Gutierrez, B., **Dennig, F.**, Hay, S. I., Wint, G. R. W., Pybus, O. G., Castro, M. C., Vinck, P., Pham, P. N., Nilles, E. J., Cauchemez, S., “Dynamics of conflict during the Ebola outbreak in the Democratic Republic of the Congo 2018–2019,” *BMC Medicine* 18, no. 1 (2020): 113, ISSN: 1741-7015, <https://doi.org/10.1186/s12916-020-01574-1>
- Mintz-Woo, K., **Dennig, F.**, Liu, H., Schinko, T., “Carbon pricing and COVID-19,” *Climate Policy*, 2020, <https://doi.org/10.1080/14693062.2020.1831432>
- 2019 Scovronick, N., Vasquez, V. N., Errickson, F., **Dennig, F.**, Gasparrini, A., Hajat, S., Spears, D., Budolfson, M. B., “Human health and the social cost of carbon: a primer and call to action,” *Epidemiology* 30, no. 5 (2019): 642–647, <https://doi.org/10.1097/EDE.0000000000001057>
- Scovronick, N., Budolfson, M. B., **Dennig, F.**, Errickson, F., Fleurbaey, M., Peng, W., So-colow, R. H., Spears, D., Wagner, F., “The impact of human health co-benefits on evaluations of global climate policy,” *Nature communications* 10, no. 1 (2019): 2095, <https://doi.org/10.1038/s41467-019-09499-x>
- 2018 Budolfson, M., **Dennig, F.**, Fleurbaey, M., Scovronick, N., Siebert, A., Spears, D., Wagner, F., “Optimal climate policy and the future of world economic development,” *The World Bank Economic Review* 33, no. 1 (2019): 21–40, <https://doi.org/10.1093/wber/lhx016>

Fleurbaey, M., Ferranna, M., Budolfson, M. B., **Dennig, F.**, Mintz-Woo, K., Socolow, R. H., Spears, D., Zuber, S., “The Social Cost of Carbon: Valuing Inequality, Risk, and Population for Climate Policy,” *The Monist* 102, no. 1 (2018): 84–109, <https://doi.org/10.1093/monist/ony023>

**Dennig, F.**, “Climate change and the re-evaluation of cost-benefit analysis,” *Climatic change* 151, no. 1 (2018): 43–54, <https://doi.org/10.1007/s10584-017-2047-4>

2017 Scovronick, N., Budolfson, M. B., **Dennig, F.**, Fleurbaey, M., Siebert, A., Socolow, R. H., Spears, D., Wagner, F., “Impact of population growth and population ethics on climate change mitigation policy,” *Proceedings of the National Academy of Sciences* 114, no. 46 (2017): 12338–12343, <https://doi.org/10.1073/pnas.1618308114>

Budolfson, M. B., **Dennig, F.**, Fleurbaey, M., Siebert, A., Socolow, R. H., “The comparative importance for optimal climate policy of discounting, inequalities and catastrophes,” *Climatic change* 145, nos. 3-4 (2017): 481–494, <https://doi.org/10.1007/s10584-017-2094-x>

2015 **Dennig, F.**, Budolfson, M. B., Fleurbaey, M., Siebert, A., Socolow, R. H., “Inequality, climate impacts on the future poor, and carbon prices,” *Proceedings of the National Academy of Sciences* 112, no. 52 (2015): 15827–15832, <https://doi.org/10.1073/pnas.1513967112>

#### BOOK CHAPTERS

2020 Budolfson, M., **Dennig, F.**, “Optimal global climate policy and regional carbon prices,” in *Handbook on the Economics of Climate Change*, ed. Graciela Chichilnisky and Armon Rezai (Edward Elgar Publishing, 2020), ISBN: 978 0 85793 905 0, <https://doi.org/10.4337/9780857939067.00017>

#### WORKING PAPERS

- “On differential fertility and the intergenerational dynamics of inequality” (with Bassel Tarbush; under review) [<http://ssrn.com/abstract=3926772> ]
- “On differential discount rates and carbon prices” (with Johannes Emmerling and David Anthoff; under review) [<http://ssrn.com/abstract=3906413> ]
- “Cocoa pollination, biodiversity-friendly production, and the global market” (with Thomas C Wanger, Eric F Lambin, Manuel Toledo-Hernández, and Teja Tscharnke; under review)
- “Forward-looking belief elicitation enhances intergenerational beneficence” (with Valentina Bosetti, Ning Liu, Massimo Tavoni, and Elke U Weber; under review)
- “Risk, inequality, and climate change” (with Joshua Bernstein, Maddalena Ferranna, and Marc Fleurbaey)
- “The climate debt deal: an intergenerational bargain” (with Niko Jaakkola and David von Below)

## Teaching

|      |   |
|------|---|
| ≥ 3× | Introduction to game theory                                     |
| ≥ 3× | Intermediate microeconomics                                     |
| 2×   | Public economics  |
| 2×   | Quantitative reasoning (core course on numeracy and statistics) |
| 2×   | The economics of inequality                                     |
| 1×   | The economics of climate change                                 |
| 1×   | Political economics   |

## Service to the profession

### PEER REVIEW

- Journal of Environmental Economics and Management
- Journal of the Association of Environmental and Resource Economists
- Ecological Economics
- Journal of Public Economics
- Macroeconomic Dynamics
- Proceedings of the National Academy of Sciences
- Nature Climate Change
- Social Choice and Welfare
- Journal of Mathematical Economics
- The Energy Journal
- Environmental and Resource Economics
- Global Environmental Change
- Journal of Benefit-Cost Analysis
- WIREs Climate Change
- Climate Change Economics
- Nature Communications
- Scientific Reports

### TEACHING AT SUMMER SCHOOLS

|      |  |
|------|--|
| 2019 | <i>International summer school in economic modelling of environment, energy and climate</i> at the Centre International de Recherche sur l'Environnement et le Développement – Paris |
|------|--|

### ORGANISATION OF RESEARCH MEETINGS

|      |   |
|------|---|
| 2016 | Thematic session on Inequality and Climate Change – EAERE annual conference, Zürich |
| 2015 | Princeton workshop on public economics – Princeton University                       |

## Presentations

### CONFERENCES AND WORKSHOPS

- 2021
  - NAVIGATE-ENGAGE workshop on “Modeling and assessment of impacts, adaptive capacity, and interactions with Sustainable Development Goals in IAMs” – virtual (invited speaker)
- 2020
  - Conference on Carbon Pricing at Pardee Center BU – virtual (invited speaker)
  - Climate Change in a World of Tradeoffs and Synergies: A Virtual Snowmass Climate Change Workshop – virtual (invited speaker)
- 2019
  - The Economics of Inequality and the Environment – Leipzig/hybrid
  - Integrated Assessment Modeling Consortium annual meeting – Tsukuba (invited as plenary speaker, expenses funded by host)
  - Integrating impacts, mitigation, and inequality; Potsdam (invited speaker; expenses funded by host)
- 2018
  - Conference on sustainable resource use and economic dynamics – Ascona
- 2017
  - Asian meeting of the Econometric Society – Hong Kong
  - Impacts World 2017 – Potsdam (invited speaker; expenses funded by host)
- 2016
  - European Association of Environmental and Resource Economists (EAERE) annual conference – Zurich
- 2015
  - Princeton workshop on public economics – Princeton (I was the organiser and presented a paper of my own)
  - Our common future under climate change – Paris (invited speaker; expenses funded by host)
- 2014
  - Conference on sustainable resource use and economic dynamics – Ascona
  - EAERE annual conference – Toulouse
  - Meeting of the Society for Social Choice and Welfare – Boston
  - Princeton Institute for International and Regional Studies workshop on historicizing climate change – Princeton (invited speaker)
  - Princeton-Yale workshop on politics, social choice, and public economics – New Haven (invited speaker; expenses funded by host)

### INVITED SEMINARS

- 2021
  - Wegener Center for Climate and Global Change at the University of Graz – Graz
- 2020
  - SWEEEP Webinar hosted by Grenoble Ecole de Management/ZEW/ETH/EIIEE – on-line
  - University of Sussex Business School – online
- 2019
  - Development Research Group, World Bank – Washington DC
  - Vienna Institute for Demography – Vienna
- 2018
  - CASBS at Stanford University – Palo Alto
  - Johns Hopkins University – Baltimore
- 2017
  - Research Institute for Humanity and Nature – Kyoto
  - Karl-Franzens Universität – Graz
- 2016
  - ETH – Zurich

- 2015
  - Kochi University of Technology – Kochi, Japan
  - Vienna University of Economics and Business – Vienna
  - Iowa State University - Ames
  - Hitotsubashi University – Tokyo
- 2014
  - Princeton University
  - Potsdam Institute for Climate Impact Research – Potsdam
  - Humboldt Universität zu Berlin
  - UC Berkeley
- 2013
  - University of Oxford

## Languages

English, German, Spanish, French – Fluent  
 Chinese – Conversational

Julia, R, Python, EViews, Matlab

## References

Doctoral  
 advisor Professor John Quah  
 Johns Hopkins University and  
 National University of Singapore  
 Email: [john.quah@jhu.edu](mailto:john.quah@jhu.edu)

Professor Valentina Bosetti  
 Bocconi University and  
 RFF-CMCC European Institute on Economics and the Environment  
 Email: [valentina.bosetti@unibocconi.it](mailto:valentina.bosetti@unibocconi.it)

Professor Marc Fleurbaey  
 Paris School of Economics  
 Email: [marc.fleurbaey@psemail.eu](mailto:marc.fleurbaey@psemail.eu)

Professor Ottmar Edenhofer  
 Technische Universität Berlin and  
 Potsdam Institut für Klimafolgenforschung and  
 Mercator Research Institute on Global Commons and Climate Change  
 Email: [ottmar.edenhofer@pik-potsdam.de](mailto:ottmar.edenhofer@pik-potsdam.de)