Travis R. Franck, Ph.D.

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Experience

Climate Modeling and Policy Director   **August 2022 – Present**

The Fletcher School at Tufts University; Medford Massachusetts

- Lead a team of modelers, fellows, and students to climate leaders in countries around the world identify deep decarbonization pathways.

- Coordinate modeling efforts with Tufts faculty and external partners, ensuring rigorous modeling methodology and execution.

- Envision strategic direction for the Climate Policy Lab as part of the management team.

Chief Technology Officer   **November 2019 – July 2022**

Climate Interactive; Remote

- Led a team of modelers and programmers that develop leading climate, energy, and food system models. These models are deployed on the web, macOS, and Windows and have been experienced by over 190,000 people in 104 countries.

- Coordinated partnerships with external modeling groups, top-tier media websites, museums, and software companies that share or use intellectual property with Climate Interactive.

- Presented the En-ROADS, C-ROADS, and food system simulators to government, private sector, and NGO audiences. These interactive and dynamic presentations allow participants to rapidly visualize policies that are high leverage and to improve mental models about low-leverage actions.

- Designed and implemented process improvements that allow the modeling team to deliver complicated projects with a high degree of analytic rigor.

Program Director   **October 2013 – November 2019**

Climate Interactive; Remote

- Designed and implemented multiple client-led modeling projects in Ethiopia, Morocco, Kenya, Brazil, Nigeria, and the Democratic Republic of Congo. Projects focused on the impacts of drought on pastoralist livelihoods, ways to improve household resilience after climate shocks and other disruptions, and national-scale modeling of land use and climate-smart agriculture.

- Managed $200k-$1.2m budgets and hired staff over multiple years to disseminate Climate Interactive's modeling work across Africa.

- Facilitated stakeholder focus groups to understand their local complex systems and integrate their varying perspectives into a cohesive modeling product.

- Represented Climate Interactive at meetings with funders, partner organizations, and numerous UN Framework Convention on Climate Change (UNFCCC) conferences (COPs).

Senior Scientist and Policy Analyst   **September 2010 – October 2013**

Climate Interactive; Remote

- Analyzed national pledges at UNFCCC COP15 in Copenhagen and helped developed the Climate Scoreboard to report the state of the global climate negotiations. The Climate Scoreboard was an important contribution to the UN Environmental Program's Emissions Gap Report.

- Helped architect En-ROADS, a low-carbon economy decision-support tool, to understand the dynamics of embodied energy requirements of capital.

- Developed portions of the C-ROADS climate simulator, a decision-support tool for UNFCCC leaders that evaluates the performance of possible international agreements. Engaged developed and developing countries and NGOs to understand and integrate varying stakeholder perspectives.

- Participated in a partnership with Tsinghua University, in which Climate Interactive and MIT worked with Tsinghua colleagues to adapt the C-ROADS model for China's internal policy processes.

Climate and Energy Systems Consultant   September 2003 – Present

Independent Consulting; Belmont, Massachusetts

- Work with NGOs, governmental organizations, and private firms on climate and energy issues. Analyze the economics and environmental performance of domestic and international climate policies.

- Analyzed fast-action greenhouse gas policies for the OECD, including worldwide black carbon strategies.

- Conducted workshops on risk mitigation in developing countries, including sea-level rise and hurricane risks in Latin America.

- Provided real-time analysis and advice for UN delegates and US officials at COP11 (Montreal), COP14 (Poznan), and COP15 (Copenhagen).

Research Fellow   September 2009 – August 2010

Center for International Environment and Resource Policy, The Fletcher School; Medford, Massachusetts

- Assessed how climate and energy policies interact and affect adoption of carbon capture and biofuel technologies, including an analysis of current and likely US biofuel regulations.

- Focus was on carbon capture with algae and the subsequent downstream markets for algal by-products.

Research Assistant   September 2003 – August 2009

Joint Program on the Science and Policy of Global Change, MIT; Cambridge, Massachusetts

- Evaluated the economic and environmental impacts of climate policy alternatives using a computable general equilibrium (CGE) model.

- Analyzed the uncertainty in economic and climatic projections inherent in MIT's Integrated Global Systems Model.

- Developed a dynamic integrated assessment model of climate change adaptation in coastal regions, combining hurricane, economic, and sea-level rise projections into a unified framework.

Climate Policy Researcher   May 2004 – August 2004

Organization for Economic Co-operation and Development (OECD); Paris, France

- Reviewed regional climate change impact literature for global trends and implications for post-Kyoto Protocol policy options.

- Worked on an international team supporting Annex 1 (UNFCCC) and other OECD member countries regarding climate change policy. Co-authored paper on post- Kyoto commitments.

Software Engineer   August 2001 – July 2003

Adobe Systems; San Jose, California

- Designed and implemented features in Acrobat Professional and related software products. Collaborated on a small, multidisciplinary team to create, market, and support a Portable Document Format (PDF) scanning product. Managed relationships with external developers and marketing professionals.

Education

Massachusetts Institute of Technology   **Cambridge, MA**   **June 2005 – August 2009**
Ph.D. in Technology, Management and Policy (Engineering Systems)
- Thesis: "Coastal Communities and Climate Change: A Dynamic Model of Risk Perception, Storms, and Adaptation"
- Contribution: Developed a new framework for evaluating the climate change impacts on coastal communities. The dynamic feedback model incorporates sea-level rise, stochastic storms, an endogenous economy, and boundedly rational agents
- Advisors: Dr. John Sterman, Dr. Henry Jacoby, Dr. Robert Nicholls
- Coursework: Microeconomics, macroeconomics, system dynamics, international negotiations and treaties

Massachusetts Institute of Technology   **Cambridge, MA**   **September 2003 – June 2005**
Dual M.S. in Technology & Policy and Civil & Environmental Engineering
- Thesis: "Quantifying the cost uncertainty of climate stabilization policies"
- Contribution: Monte Carlo analysis of a global energy-economic computable general equilibrium model to determine the range of carbon prices given parametric and policy uncertainty
- Coursework: Systems approaches and analysis, energy, technology and environment, environmental economics, analytical frameworks, law and technology, climate change science and policy
- GPA of 4.8 on a 5.0 scale

Iowa State University   **Ames, Iowa**   **September 1996 – May 2001**
B.S. in Environmental Science, Computer Science, and Environmental Studies (triple major)
- Graduated with Honors; GPA of 3.77 on a 4.0 scale
- Phi Beta Kappa, Upsilon Pi Epsilon, and Highest 2% of Class

Selected Publications

Rooney-Varga J.N., Sterman J., Fracassi E., Franck T., et al. (2021). Chapter 29: A Simulation Game that Motivates People to Act on Climate. World Scientific Encyclopedia of Climate Change, pp. 231-243. https://doi.org/10.1142/9789811213960_0029

Beckage, B., Lacasse, K., Winter, J.M., Franck, T., et al. (2020). The Earth has humans, so why don't our climate models?. Climatic Change, 163, 181–188. https://doi.org/10.1007/s10584-020-02897-x

Beckage B., Gross L.J., Lacasse K., et al. (2018). Linking models of human behaviour and climate alters projected climate change. Nature Climate Change, 8, 79–84. https://doi.org/10.1038/s41558-017-0031-7

Rooney-Varga J.N., Sterman J.D., Fracassi E., Franck T., Kapmeier F., Kurker V., et al. (2018). Combining role-play with interactive simulation to motivate informed climate action: Evidence from the World Climate simulation. PLoS ONE, 13(8). https://doi.org/10.1371/journal.pone.0202877

Sterman, J., Franck, T., et al. (2014). World climate: a role-play simulation of climate negotiations. Simulation & Gaming, 46(3-4), 348–382. https://doi.org/10.1177/1046878113514935

Sterman, J., Fiddaman, T., Franck, T., et al. (2013). Management flight simulators to support climate negotiations. Environmental Modelling & Software, 44, 122-135. https://doi.org/10.1016/j.envsoft.2012.06.004.

Sterman, J., Fiddaman, T., Franck, T., et al. (2012). Climate Interactive: The C-ROADS climate policy model. System Dynamics Review, 28(3), 295–305. https://doi.org/10.1002/sdr.1474

Franck, T. (2009). Coastal communities and climate change: A dynamic model of risk perception, storms, and adaptation. Thesis, Cambridge, MA: Massachusetts Institute of Technology, Engineering Systems Division.

Franck, T. (2009). Coastal adaptation and economic tipping points. Management of Environmental Quality, 20(4), 434-450. http://dx.doi.org/10.1108/14777830910963762

Sawin, E., Jones, A., Fiddaman, T., Siegel, L., Wright, D., Franck, T., et al. (2009). Current emissions reduction proposals in the lead-up to COP-15 are likely to be insufficient to stabilize atmospheric CO2 levels: Using C-ROADS, a simple computer simulation of climate change, to support long-term climate policy development. Climate Change - Global risks, Challenges, and Decisions Conference. University of Copenhagen. https://mitsloan.mit.edu/shared/ods/documents?DocumentID=4385

Franck, T. (2008). A Behavioral Model of Hurricane Risk and Coastal Adaptation. Proceedings of the International System Dynamics Conference, Athens, Greece, July 2008.

Franck, T. (2007). Choice of utility functions in integrated assessment: Comparing Subjective Well-being and Traditional functions. Proceedings of the International System Dynamics Conference, Boston, MA, July 2007.

Corfee Morlot, J., Smith, J., Agrawala, S., & Franck, T. (2005). Long-term goals and post-2012 commitments: Where do we go from here with climate policy? Climate Policy, 5(3), 251-272. https://doi.org/10.1080/14693062.2005.9685557

Franck, T. (2005). Quantifying the cost uncertainty of climate stabilization policies. *Thesis*, Massachusetts Institute of Technology, Cambridge, MA.