

Monica G. Bobra

Principal Data Scientist

San Francisco Bay Area | mbobra@alum.mit.edu | mbobra.github.io

Summary

I have fifteen years of experience leading diverse teams across academia, industry, and government to solve complex problems in economic, social, and environmental sustainability using advanced and ethical modeling techniques. My work empowers communities to make better decisions, save resources, and create meaningful, measurable impact.

Education

University of New Hampshire, Durham NH

M.S. Physics
JANUARY 2010

Boston University, Boston MA

B.A. Astronomy
B.S. Communication
MAY 2004

Executive Qualifications

Navigating challenging political environments

Building strategic partnerships across
academia, industry, and government

Bridging traditionally siloed disciplines

Building engaged and empowered teams

Strong technical background in analysis,
forecasting, modeling, and risk management

Clear and simple storytelling

Awards

Robert H. Goddard Exceptional Achievement
for Science Award (2024)

NASA Group Achievement Award — SunPy
Development Team (2024)

American Astronomical Society Solar
Physics Division Popular Media Award (2021)

NASA Group Achievement Award — Solar
Dynamics Observatory Team (2017)

Robert H. Goddard Exceptional Achievement
for Science Award (2016)

NASA Space Grant Fellowship (2008 - 2009)

NASA Group Achievement Award — Hinode
Team (2007)

Experience

State of California, Office of Data and Innovation / Principal Data Scientist

MAY 2023 - PRESENT, SACRAMENTO & SAN FRANCISCO BAY AREA, CA

Serving as the data science methodology expert for the State of
California as appointed by Governor Newsom

Leading a statewide Data Science Accelerator to improve safety and
sustainability using advanced modeling; for example, worked with the
California Department of Social Services to predict and mitigate welfare
benefit theft, leading to an 83% drop in theft and savings of \$200
million annually

Pioneered initiative to translate academic research into operations
across the State; for example, working with the Stanford Doerr School
of Sustainability and the California Department of Water Resources to
help communities reduce flood risk by monitoring subsidence with
novel, high-precision instruments

Stanford University / Research Scientist

APRIL 2010 - JULY 2021, STANFORD CA

Led multi-stakeholder teams to predict the impact of space weather on
public infrastructure, such as power grids and GPS satellites, by using
petabyte-scale satellite data together with novel machine learning
algorithms as acting PI of NSF and NASA grants (\$1.8M total award)

Led federal science policy in data-driven space weather risk
management by serving on the National Academy of Sciences
Heliophysics Mid-Decadal Committee (2020)

Led the development of open source software in heliophysics as a
SunPy Board member and Journal of Open Source Software editor

Served as a founding member of the Center for Open and REproducible
Science at Stanford Data Science, which develops innovative methods
to enable open science practices across Stanford University

Served as a member of the science team for a \$1B NASA Heliophysics
flagship mission, the Solar Dynamics Observatory, designed to
safeguard the nation against the adverse effects of space weather

Harvard-Smithsonian Center for Astrophysics / Astrophysicist

OCTOBER 2005 - AUGUST 2007, CAMBRIDGE MA

Developed and published a numerical model of the solar magnetic field
that accurately replicates observational data

Served as a member of the science team for two NASA Heliophysics
missions, Hinode and the Transition Region and Coronal Explorer