

Introduction to the Climate Change and Health Research Coordinating Center (CAFÉ)

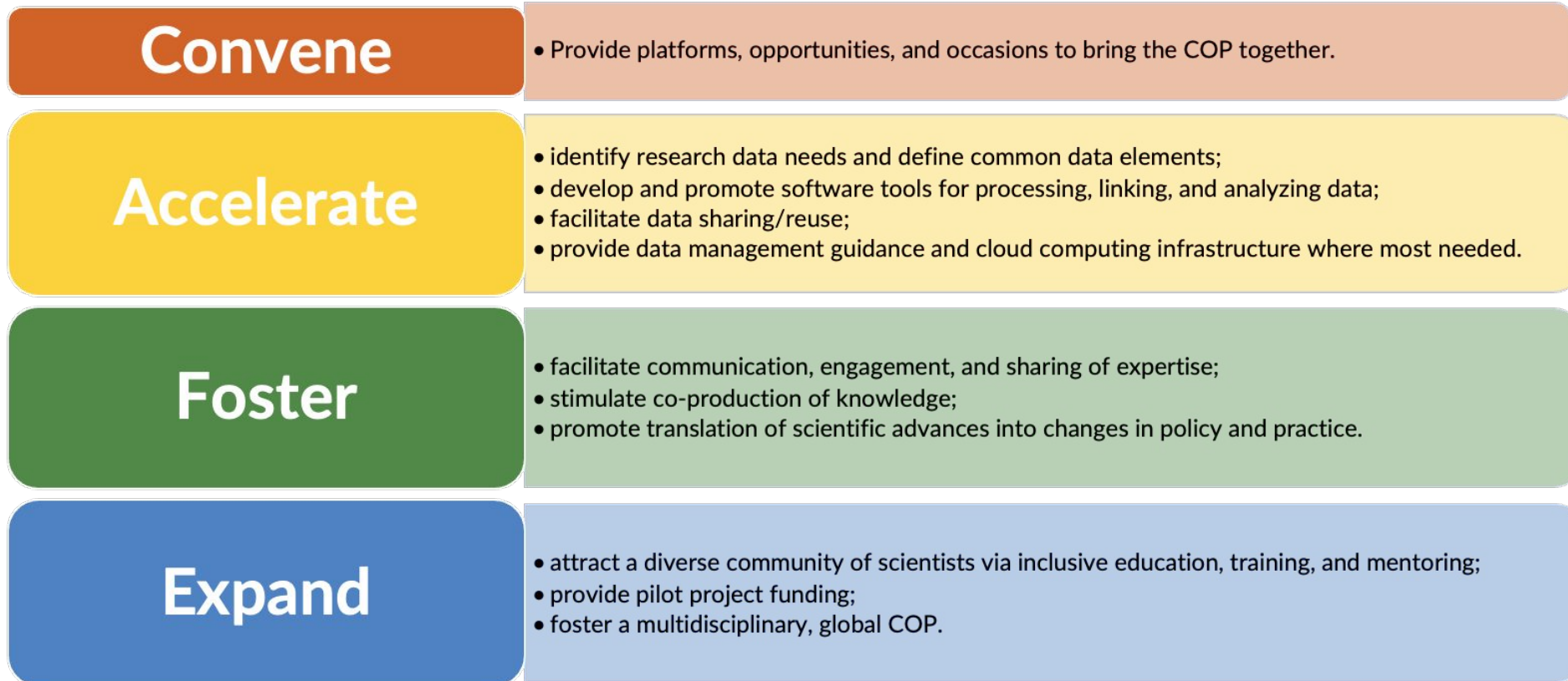


*Stefano Aicus, Harvard University, Sonia Barbosa, Harvard University. Joshua S. Cetron, Harvard University, Kezia Irene, Harvard University, Michelle Audirac, Harvard University, Gregory A. Wellenius, Boston University, Amruta Nori-Sarma, Boston University, Kevin Lane, Boston University
Danielle Braun, Harvard University*

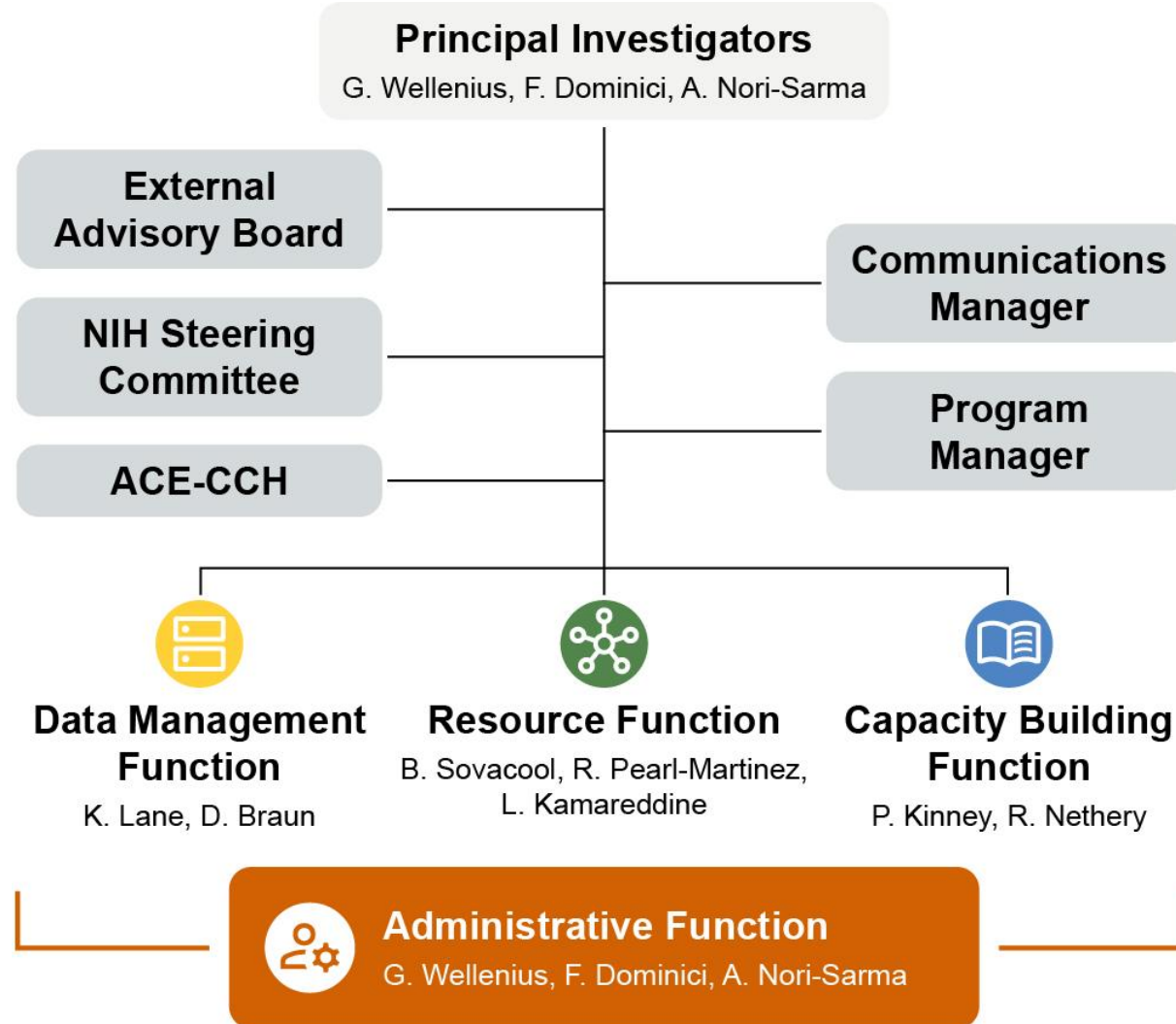
Goals of CAFÉ



A research coordinating center which seeks to to accelerate the pace of research and translation in climate change and health by supporting and growing the Community of Practice (COP).



Overview of CAFÉ



CAFÉ Leadership Team



Danielle Braun
Principal Research Scientist
HSPH/DFCI



Greg Wellenius
Professor BUSPH



Francesca Dominici
Professor HSPH



Amruta Nori-Sarma
Assistant Professor BUSPH



Leila Kamareddine
Regulatory and Compliance
Manager, HSPH



Pat Kinney
Professor BUSPH



Rachel Nethery
Assistant Professor HSPH



Rebecca Pearl-Martinez
Executive Director, BU IGS

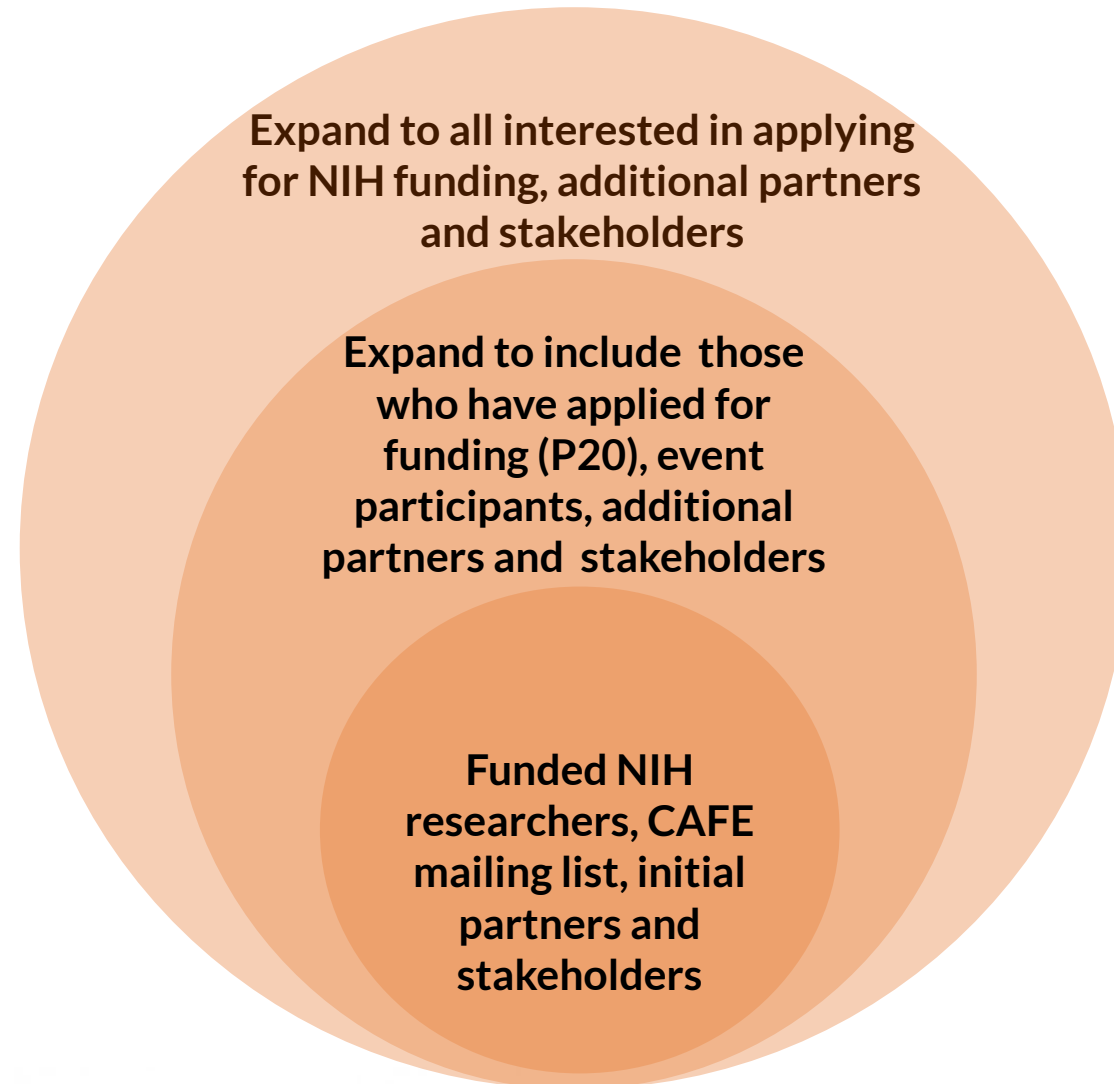


Benjamin Sovacool
Professor & Director, BU IGS



Kevin Lane
Assistant Professor
BUSPH

Community of Practice (COP)



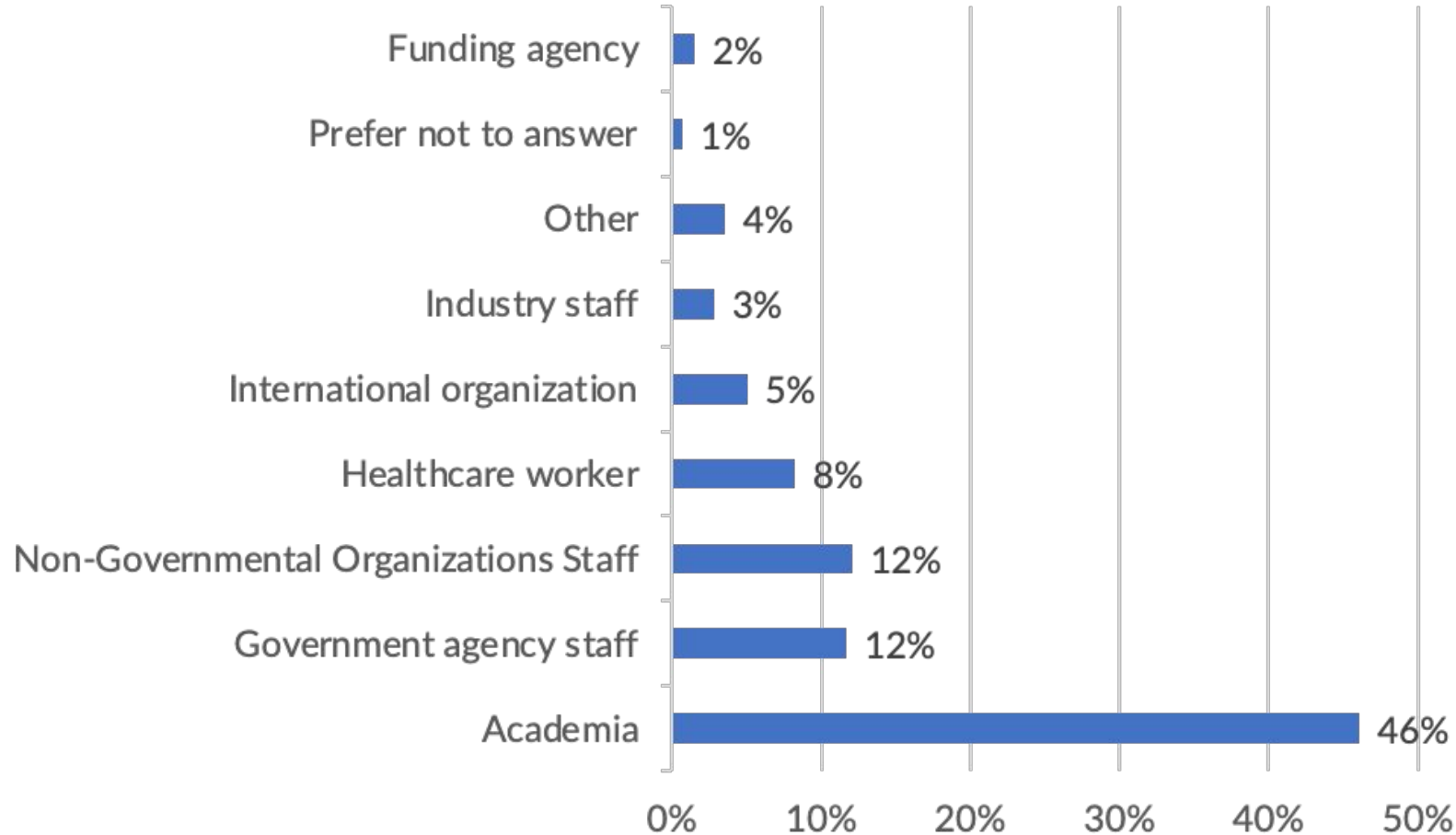


Community of Practice (COP)

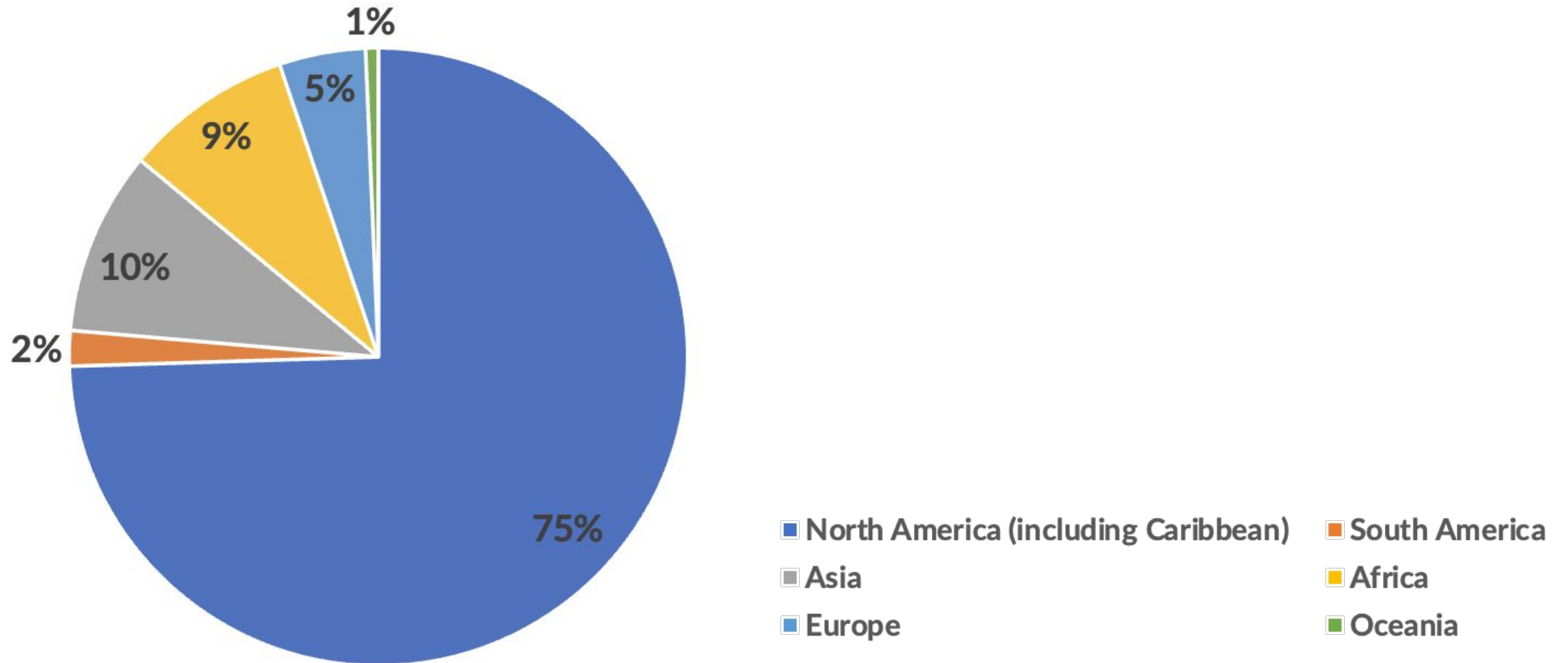
- Who is in the COP?
 - **Anyone** who is professionally interested in climate and health
 - Includes:
 - **academic researchers**
 - **those working in healthcare, government agencies, NGOs, funding agencies, community-based organizations, industry, foundations, and more!**

1500+ members

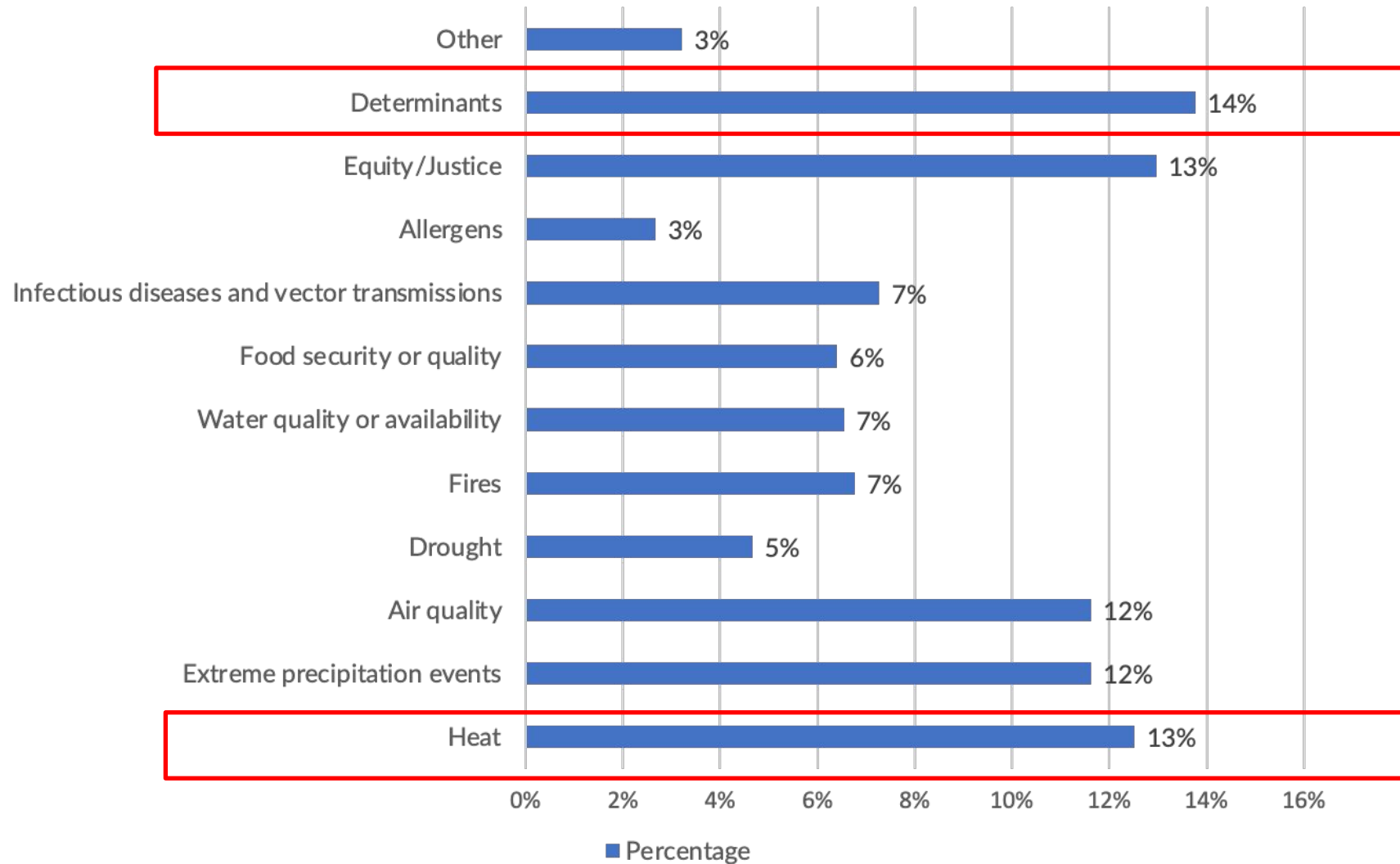
With which Professional Group(s) do you identify?



Geographic Diversity



Areas of Professional Interest



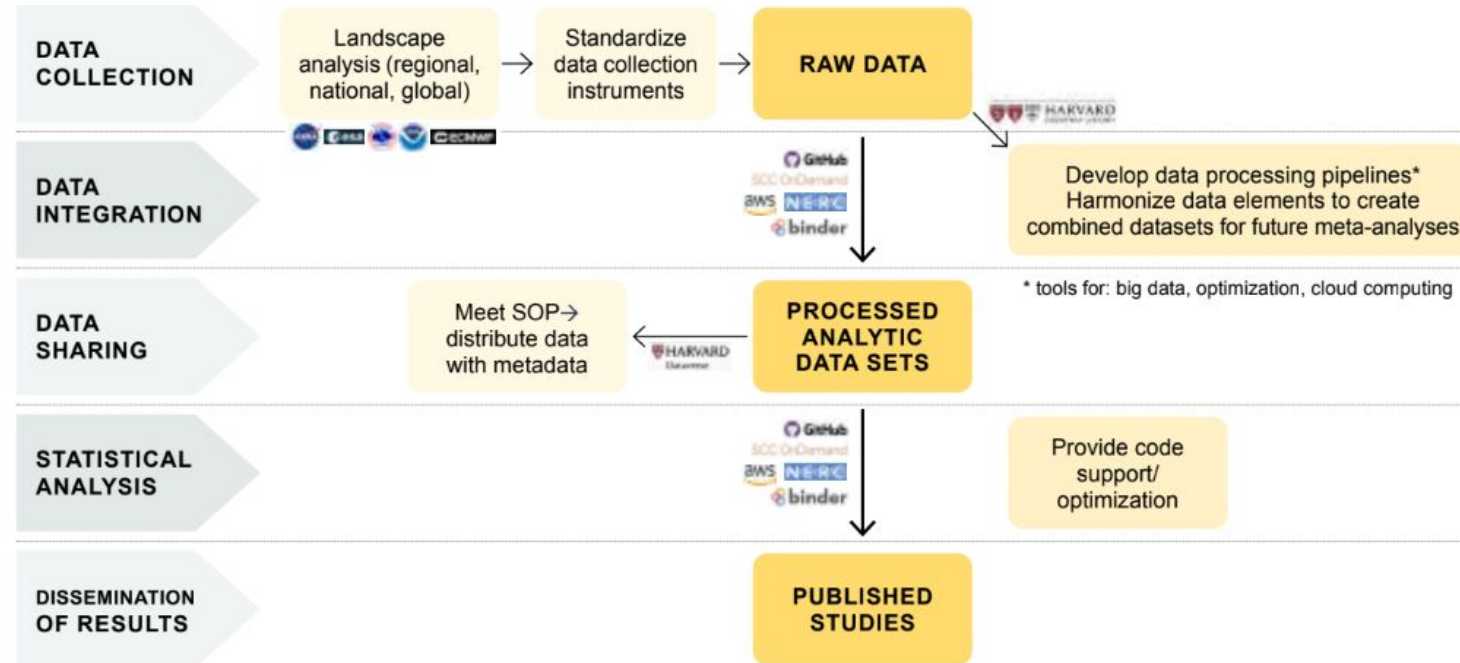
CAFÉ Climate Health Data Resources



Data Management Function Aims



1. Identify CCH research data needs and define common data elements across the COP
2. Develop and promote data science and software tools for processing, linking, and analyzing common CCH data
3. Facilitate sharing and reuse of CCH data
4. Provide data management and dissemination guidance and cloud computing infrastructure to those who need it most



Note: CAFE is not a data processing/analysis service center! Focus is on curating commonly used datasets and coding pipelines.



CCH-COP RAW AND PROCESSED DATA

Commonly used CCH exposure and health datasets and users will be identified by the data landscape analysis and prioritized by the Data Management function working group (Ex: Air Pollution Estimates, Satellite Data, Temperature Data, Census Data, Built Environment Factors)



EXISTING DATA

Users: Any CCH research group with appropriate metadata that meets the Dataverse requirements



Storage and
Dissemination

REFINEMENT & DATA DEVELOPMENT

Users: CCH-COP Research groups in need of common data methods and code to rapidly develop reproducible analyses



Processing, Standard Operating
Procedures, Code

SANDBOX DATA DEVELOPMENT & ANALYTICS

Users: Researchers without the infrastructure to conduct on site CCH research (i.e. Pilot Awardees and LMIC collaborators)



Cloud Computing

CAFÉ Dataverse Collection



 **HARVARD**
Dataverse

[Add Data](#) ▾ [Search](#) ▾ [About](#) [User Guide](#) [Support](#) [Sign Up](#) [Log In](#)



[Climate Change and Health Research Coordinating Center \(CAFÉ\) Collection](#)

(Harvard University, Boston University)

[Harvard Dataverse](#) >

[Contact](#) [Share](#)

Welcome to the [Climate-Health CAFÉ](#) Dataverse collection! This open collection is designed to support and enhance global research initiatives focused on understanding and mitigating the health impacts of climate change. The Climate Change and Health Research Coordinating Center CAFÉ, a joint Boston University School of Public Health and Harvard T.H. Chan School of Public Health Research Coordinating Center (RCC) of the National Institutes of Health (NIH) Climate Change and Health Initiative (U24ES035309). CAFÉ is dedicated to fostering a robust Community of Practice by offering a comprehensive repository for datasets that enable broad, interdisciplinary research and catalyze new collaborations in the area of climate change and health.

As the field of climate change and health evolves, so too will the CAFÉ Collection. Plans for future expansion include fostering partnerships that broaden the scope and impact of the collection. Join our vibrant community in shaping the future of climate and health research – contribute, reuse, and explore datasets in the CAFÉ Collection.

Instructions

To make contributions to the CAFÉ collection, you'll find easy-to-follow steps in our [CAFÉ dataverse upload instructions](#). Emphasizing open access and collaborative research, the CAFÉ Collection invites contributions from a diverse array of stakeholders, including government agencies, NGOs, community-based organizations, industry partners, and academics.

[Collapse Description \[-\]](#)



[Advanced Search](#)

[+ Add Data](#)

<https://dataverse.harvard.edu/dataverse/CAFÉ>



School of Public Health



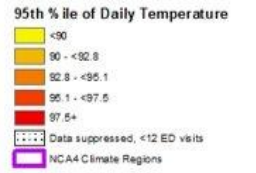
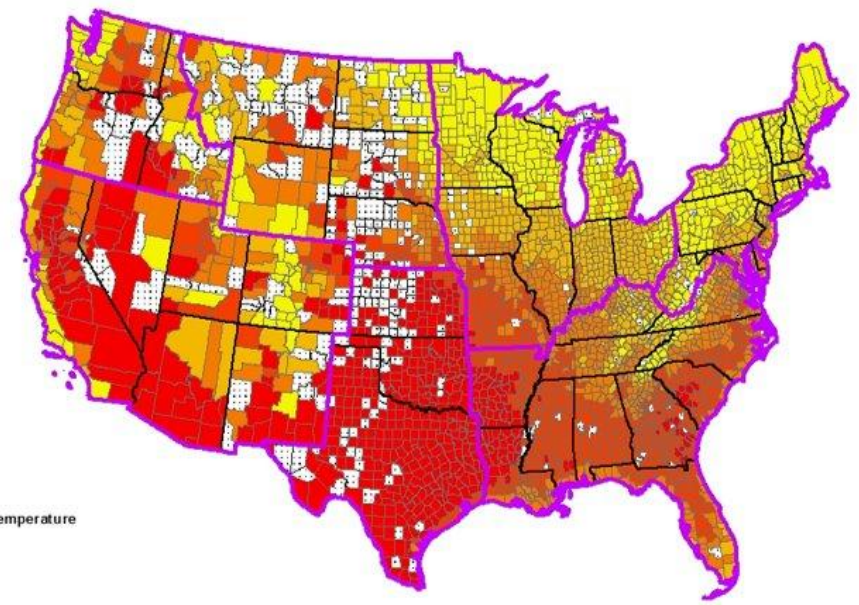
HARVARD
T.H. CHAN

SCHOOL OF PUBLIC HEALTH
Department of Biostatistics

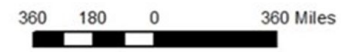
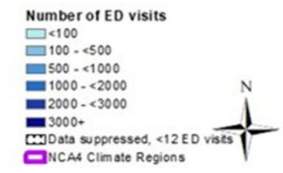
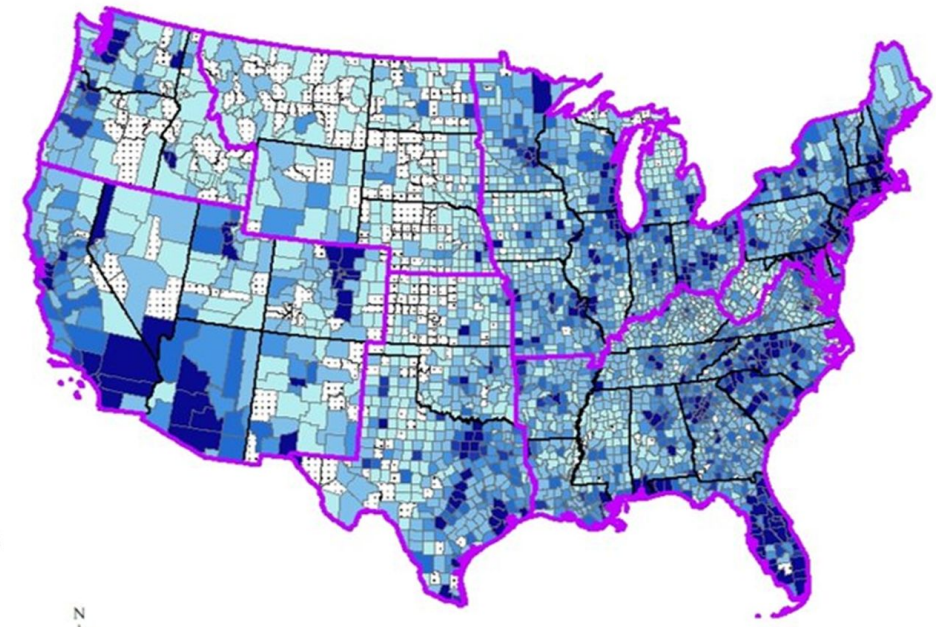


Nori Sarma et al. 2022 Example of Data and Code Sharing

1b



1a

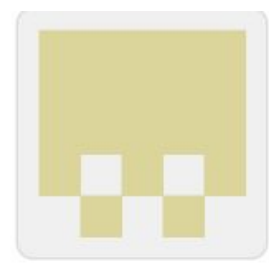


Add Data ▾ Search ▾



Climate Change and Health Research Coordinating Center (CAFE) Collection

(Harvard University, Boston University) **Unpublished**



Climate-CAFE

[Harvard Dataverse >](#)

3L | [statistics](#)

CAFÉ Data Related Resources



Welcome to the Climate CAFÉ Data Management Page

- CAFÉ Dataverse Collection
 - Climate-Health CAFÉ Dataverse Collection
 - Contributing to the Climate-Health CAFÉ Dataverse Collection
 - Example Datasets in the Climate-Health CAFÉ Dataverse Collection
- CAFÉ GitHub Organization
 - Climate CAFÉ GitHub Organization
 - Climate CAFÉ Code-sharing Walkthrough
 - Getting Started with GitHub
 - Reproducible Data Creation Pipeline

Navigation icons: Home, Download, Refresh, Stop, Search. Contents menu icon. Table of content link.

Welcome to the Climate CAFÉ Data Management Page

The BUSPH-HSPH Climate Change and Health Research Coordinating Center (CAFÉ) aims to build a Community of Practice by managing and supporting climate change and health research and capacity building efforts.

The CAFÉ data management objective is to aid climate and health community of practice by identifying climate and health research data needs, defining common data elements, developing and promoting data science and software tools for processing data, and providing data management and dissemination guidance.

CAFÉ Climate Health Data Sharing

Harvard Dataverse is an open source generalist data repository where we are amassing a collection of commonly-used climate and health data and linkages, including spatial data. Following FAIR principles, we strongly encourage the community of practice to help expand the Climate-Health CAFÉ Dataverse collection by contributing data for sharing and reuse.

Climate & Health Tutorials and Code Sharing

We have established a community GitHub organization to share code, examples, and tutorials on working with common data formats and sources. We are assembling a collection of standard operating procedures (SOPs) for data processing, integration, harmonization, and analysis with code and tutorials in order to facilitate reproducibility and reusability for the climate and health Community of Practice. We encourage community members to contribute, share, and reuse code and software within the Climate-CAFÉ GitHub organization. Code and tutorials will include tasks such as spatial aggregations, data harmonization, and analysis across languages including R and Python and platforms such as ArcGIS.

Table of content

Climate CAFÉ Data Management page:

<https://climate-cafe.github.io//intro.html>




CAFÉ Dataverse Data Collection

- Harvard Dataverse is an open source established and rapidly growing NIH-supported and funded generalist data repository.
 - Follows FAIR principles
- Launched the Climate-Health CAFE Dataverse collection:
 - The CAFE team will be curating and processing commonly-used climate and health data and linkages, including spatial data. (we need your input!)
- We strongly encourage the community to help expand the Climate-Health CAFÉ Dataverse collection by contributing data for **sharing** and **reuse**. You can:
 - Deposit and share your data and code.
 - Get academic credit!! (DOI for each dataset)
 - Adhere to CAFE NIH DMP template
 - Reuse data.

CAFÉ Dataverse Collection: Example Dataset



 HARVARD Dataverse Add Data ▾ Search ▾ About User Guide Support Sign Up Log In



Climate Change and Health Research Coordinating Center (CAFÉ) Collection

(Harvard University, Boston University)

Harvard Dataverse > Climate Change and Health Research Coordinating Center (CAFÉ) Collection >

Wildfire Smoke PM2.5 per Zipcode

Incomplete metadata Version 2.0



Irene, Kezia; Audirac, Michelle; Spoto, Federica; Childs, Marissa L.; Dominici, Francesca; Braun, Danielle, 2023, "Wildfire Smoke PM2.5 per Zipcode", <https://doi.org/10.7910/DVN/VHNJBD>, Harvard Dataverse, V2

Cite Dataset ▾

Learn about [Data Citation Standards](#).

Access Dataset ▾
Contact Owner Share

Dataset Metrics ?

57 Downloads ?

Description ?

This dataset contains daily aggregated measurements of daily PM2.5 from ambient wildfire smoke in the contiguous United States, spanning from 2006 to 2016. The data is sourced from a study by Childs et al. (2022), titled "Daily Local-Level Estimates of Ambient Wildfire Smoke PM2.5 for the Contiguous US" published in Environmental Science & Technology. To compute the standardized weight across different zip codes, we computed the weight calculation on a 10km grids. To compute the weight, we obtain area-weights that add up to 1 in each polygon of zipcodes. This enabled us to calculate the smoke values per zipcode for the aforementioned period. Those interested in replicating our data processing pipeline can access it at https://github.com/NSAPH-Data-Processing/smoke_aggregation.

Subject ?

Earth and Environmental Sciences; Computer and Information Science

Keyword ?

Smoke, PM2.5, standardized weight

Related Publication ?

Childs, M. L., Li, J., Wen, J., Heft-Neal, S., Driscoll, A., Wang, S., ... & Burke, M. (2022). Daily Local-Level Estimates of Ambient Wildfire Smoke PM2.5 for the Contiguous US. Environmental Science & Technology, 56(19), 13607-13621. pmid: 36134580

License/Data Use Agreement



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SCHOOL OF PUBLIC HEALTH
Department of Biostatistics

CAFÉ Dataverse Collection: Custom Metadata



Metadata About Data Sources

<input checked="" type="checkbox"/> Derived from Another Dataset	Required by Dataverse	
<input checked="" type="checkbox"/> Source Dataset Title	<input type="radio"/> Required	<input checked="" type="radio"/> Optional
<input checked="" type="checkbox"/> Source Dataset Author	<input type="radio"/> Required	<input checked="" type="radio"/> Optional
<input checked="" type="checkbox"/> Source Dataset Institution	<input type="radio"/> Required	<input checked="" type="radio"/> Optional
<input checked="" type="checkbox"/> Source Dataset Version Number	<input type="radio"/> Required	<input checked="" type="radio"/> Optional
<input checked="" type="checkbox"/> Source Dataset DOI or URL	<input type="radio"/> Required	<input checked="" type="radio"/> Optional
<input checked="" type="checkbox"/> Source Dataset Last Modified Date	<input type="radio"/> Required	<input checked="" type="radio"/> Optional
<input checked="" type="checkbox"/> Source Dataset Date Obtained	<input type="radio"/> Required	<input checked="" type="radio"/> Optional
<input checked="" type="checkbox"/> Source Dataset Type	<input type="radio"/> Required	<input checked="" type="radio"/> Optional
<input checked="" type="checkbox"/> Source Dataset Other Type	<input type="radio"/> Required	<input checked="" type="radio"/> Optional

Metadata About Data Sources

<input checked="" type="checkbox"/> Source Dataset Spatial Resolution		
Source Dataset Spatial Resolution Value	<input type="radio"/> Required	<input checked="" type="radio"/> Optional
Source Dataset Spatial Resolution Unit	<input type="radio"/> Required	<input checked="" type="radio"/> Optional
Source Dataset Spatial Resolution Other Unit	<input type="radio"/> Required	<input checked="" type="radio"/> Optional
<input checked="" type="checkbox"/> Source Dataset Timestep	<input type="radio"/> Required	<input checked="" type="radio"/> Optional
<input checked="" type="checkbox"/> Other Source Dataset Timestep	<input type="radio"/> Required	<input checked="" type="radio"/> Optional
<input checked="" type="checkbox"/> Source Dataset Attribution	<input type="radio"/> Required	<input checked="" type="radio"/> Optional
<input checked="" type="checkbox"/> Source Dataset Disclaimer	<input type="radio"/> Required	<input checked="" type="radio"/> Optional

CAFÉ Dataverse Collection: Custom Metadata



Metadata About Geospatial Files

<input checked="" type="checkbox"/> Includes a Geospatial File	Required by Dataverse
<input checked="" type="checkbox"/> Spatial Reference System	
Spatial Reference System Name	<input type="radio"/> Required <input checked="" type="radio"/> Optional
Spatial Reference System URL	<input type="radio"/> Required <input checked="" type="radio"/> Optional
<input checked="" type="checkbox"/> Spatial File Type	<input type="radio"/> Required <input checked="" type="radio"/> Optional
<input checked="" type="checkbox"/> Other Spatial File Type	<input type="radio"/> Required <input checked="" type="radio"/> Optional
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Spatial Resolution Value	<input type="radio"/> Required <input checked="" type="radio"/> Optional
Spatial Resolution Unit	<input type="radio"/> Required <input checked="" type="radio"/> Optional

CAFÉ Dataverse Collection: Contributing Data



Welcome to the Climate CAFÉ Data Management Page

CAFÉ Dataverse Collection

Climate-Health CAFÉ Dataverse Collection

[Contributing to the Climate-Health CAFÉ Dataverse Collection](#)

Example Datasets in the Climate-Health CAFÉ Dataverse Collection

CAFÉ GitHub Organization

Climate CAFÉ GitHub Organization

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Contents

Prerequisites

Steps

Contributing to the Climate-Health CAFÉ Dataverse Collection

This tutorial provides step-by-step instructions on how to upload data to [Dataverse](#) and select the "Climate CAFE" organization as the Host Dataverse. Dataverse is a robust platform for sharing, archiving, and collaborating on research data.

To ensure the reproducibility of your data, it's essential to include a link to your GitHub repository in the dataset's description. This link should lead to the pipeline that outlines the process for creating the data.

HARVARD Dataverse Add Data Search About User Guide Support

Harvard Dataverse >

Host Dataverse Changing the host dataverse will clear any fields you may have entered data into.

Harvard Dataverse

*Asterisks indicate required fields

Citation Metadata

Title

Add "Replication Data for" to Title

Author

Name Irene, Kezia **Affiliation** Harvard University +

Identifier Type Select... **Identifier**

Point of Contact

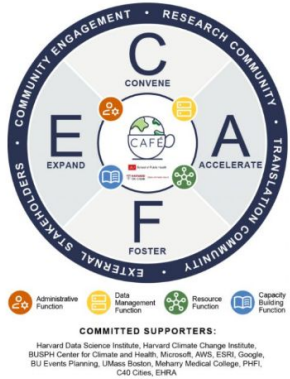
Name Irene, Kezia **Affiliation** Harvard University +

E-mail kirene@hsph.harvard.edu

Description This field supports only certain HTML tags.

<https://climate-cafe.github.io/tutorial.html>

CAFÉ Tutorials/Code Walkthroughs



Welcome to the Climate CAFÉ Data Management Page

CAFÉ Dataverse Collection

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Contents

Current Tutorials and Code Walkthroughs

Our team members have created tutorials and code examples for several key data management procedures and common analysis challenges that climate and health researchers may encounter. These tutorials are intended to provide usable example materials that researchers can download and step through on their own.

Many of these materials are still under active development, so please check back regularly for updates.

- Climate & Health Tutorials and Code Sharing
- Current Tutorials and Code Walkthroughs**
- Live Tutorials and Code
 - Under Development
 - Expanding Our Efforts

Live Tutorials and Code

Title	Description	Repository Link
Population Weighting Raster Data	Using the gridded meteorological dataset PRISM as an example, this tutorial demonstrates how to aggregate raster data to administrative units (e.g., counties) with population weights.	Climate-CAFE/population_weighting_raster_data
Joining Tabular & Spatial Data	This repository provides tutorial scripts in R and Python for spatializing and mapping tabular temperature data at the county level.	Climate-CAFE/tabular_spatial_data_join
US Census yearly time series tutorial	A succinct tutorial for generating time series of socio-economic variables from the US Census Bureau using its API.	Climate-CAFE/census_tutorial

Under Development

Title Description

Tutorials/code sharing resources for processing, linking, and analyzing CCH data: hosted on Git

https://climate-cafe.github.io/cafe_github_org.html



CAFÉ Resources on NIH Data Management and Sharing Policy

- NIH issued a new Data Management and Sharing policy (effective January 25, 2023).
 - Promotes sharing of scientific data.
- Leveraging Harvard Dataverse, we provide a NIH Data Management and Sharing Policy template for the CAFE community:
 - <https://climate-cafe.github.io//intro.html>

CAFÉ More Data Related Resources (coming soon!)



- More data/tutorials/code/resources.
 - conducting a landscape analysis.
- More guidelines for data curation, processing, harmonization, and code sharing.
- Community engagement:
 - working groups related to datasets, tutorials, data curation, processing, and harmonization
 - webinars and training sessions:
 - e.g. github training session
 - slack channels focused on datasets, tutorials, data curation, processing, and harmonization
 - virtual office hours

CAFÉ Education and Training Resources



CAFÉ inclusive education and training resources



- **CAFÉ Website** now hosts initial details on free / low-cost resources for Climate and Health training materials
- First training was on temperature mortality epidemiology study designs

BUSPH PHX Courses

1. [Mini Master in Public Health](#)
2. [Foundations in Public Health, Parts 1-3](#)
3. [Quantitative Methods Primer](#)
4. [Cyclones and health \[podcast\]](#)

Other Online Courses

1. [Coursera: Global Warming I: The Science and Modeling of Climate Change](#)
2. [Coursera: Global Warming II: Create your own models in Python](#)
3. [Coursera: From Climate Science to Action](#)
4. [Coursera: Climate Change Mitigation in Developing Countries](#)
5. [Coursera: Companies and Climate Change](#)
6. [Coursera: Feeding the World](#)
7. [Coursera: Introduction to Environmental Law and Policy](#)
8. [GIS for Climate Action - ESRI](#)

Trainings

1. [NIH Grant-Writing Short Course for Junior Investigators](#)
2. [GitHub Reproducible Research Training](#)
3. [Spatial Data Science with R](#)

CAFÉ Pilot Award Program



2023–2024 CAFÉ Pilot Project Request for Proposals

CAFÉ is a Climate Change and Health Research Coordinating Center supporting the NIH Climate Change and Health Initiative, with the overarching goal to build a Community of Practice by enabling, expanding, and supporting climate change and health research and capacity building efforts. CAFÉ is pleased to announce its first request for proposals for pilot projects. The objective of the CAFÉ pilot program is to provide small seed funding for activities (e.g., data collection, community engagement, training, and workshops) that will allow



<https://climatehealthcafe.org/funding>

CAFÉ Community Resources





Ways to Engage with the COP

- Annual Conferences (2024-2026)
- Online Collaboration platform: Slack channel (Live as of 3/20/24)
- Online Networking events (coming soon)
- Webinars/workshops (CAFÉ Website Registration)
- Working groups (coming soon)
 - i. Short term engagements to reach specific milestones
 - ii. Convened through community suggestions

2024 Conference

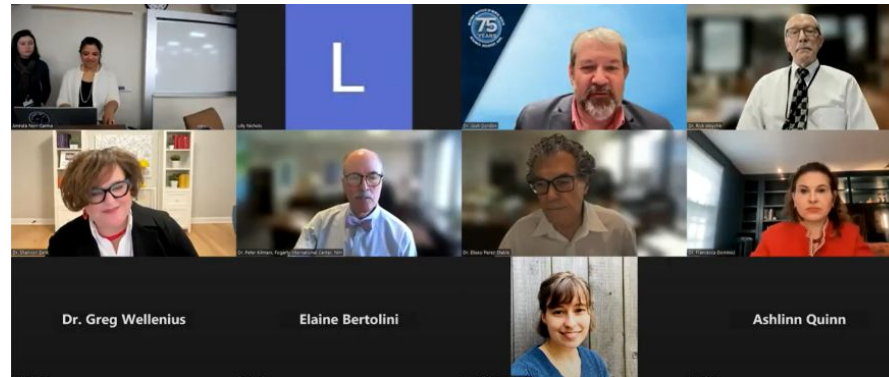
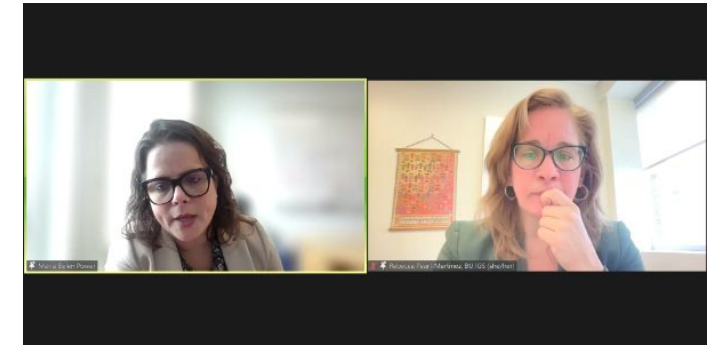


Event Agenda

CAFÉ Climate and Health Conference 2024

Mon, Feb 05, 2024

10:45 AM - 12:00 PM	<p>Welcome and Keynote Day I (NIH) Speakers: Peter Klimarx, Eliseo J. Pérez-Stable, Joshua Gordon, Shannon Zenk, Rick Woychik, Amruta Nori-Sarma, Francesca Dominici</p>
12:00 PM - 1:00 PM	<p>Introduction to CAFÉ Speakers: Greg Wellenius, Danielle Braun, Leila Kamareddine, Patrick Kinney, Kevin Lane</p>
12:00 PM - 1:00 PM	<p>Policy Entrepreneurship 101: Translating Climate and Health Policy Opportunities into Plans of Action Speakers: Grace Wickerson, Alexa White</p>
12:00 PM - 1:00 PM	<p>Alliance for Community Engagement – Climate and Health (ACE-CH) Session 1: Colorado and California Speakers: Mary Masterson, Katherine A James, Paul English, Liam O’Fallon, Katherine Dickenson</p>
12:30 PM - 1:30 PM	<p>Exploring Climate Change and Health with ArcGIS Speakers: Jhonatan Garrido-Lecca, Jared Shultz, Este Geraghty</p>
1:00 PM - 2:00 PM	<p>Panel on Community Resilience and Vulnerability Speakers: Lisa Frueh, Jane Clougherty, Perry Sheffield</p>
1:30 PM - 2:30 PM	<p>Youth Climate Advocacy Speakers: Muskaan Khemani, Shalom Entner, Eilyanne Chlystun-Githae, Sibusiso Mazomba</p>
2:00 PM - 3:00 PM	<p>Granular, Real-time, US-Wide Health Damages from Electricity Consumption Speakers: Scott Delaney, Nat Steinsultz</p>
2:00 PM - 3:00 PM	<p>Assessing conceptual frameworks to support translational research in climate and health: Moving to Action Speakers: Arnab Ghosh, Olivia Keenan</p>
2:30 PM - 3:30 PM	<p>Funders shaping the climate-health nexus Speakers: Victoria McGovern, Chris Hanley, Carrie Wolinetz, Kathryn DeRobertis</p>
3:00 PM - 3:30 PM	<p>Speed Networking Session</p>



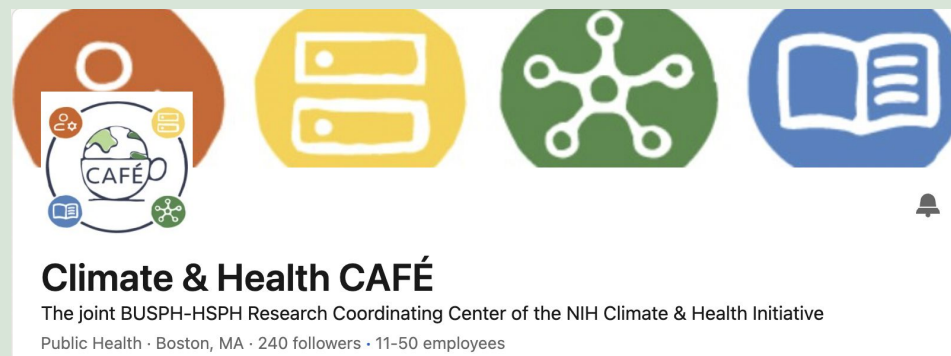


Information Sharing

- Website: <https://climatehealthcafe.org/>
- Newsletter Monthly through COP email
- Instagram page: climatehealthcafe



- [LinkedIn page](#)



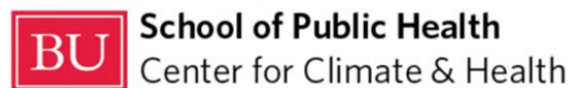
CAFÉ All-Star Team:

- Elaine Bertolini
- Lilly Nichols
- Hannah Kim
- Keith Spangler
- Emma Gause
- Natalia Escobar-Pemberthy
- Heather Clifford
- Jon Levy
- Pam Templer
- Kipruto Kirwa
- Quinn Adams*
- Kathryn (Katie) Hollering*
- Gaurab Basu
- Michelle Audirac
- Kezia Irene
- Julie Goldman
- Stefano Iacus
- Sonia Barbosa
- Joshua Cetron
- Jinjie Liu
- Dan Yuan
- Ceilyn Boyd
- Emily Sharlach*
- Michaela Hoenig*

NIH Partners:



- The NIH CCHI Steering Committee
- Abee Boyles
- Ashlinn Quinn
- Aubrey Miller
- Gabriel Lai
- Richard Kwok
- Aspen Reese



Discussion/Questions?



Join our
Community of
Practice:

