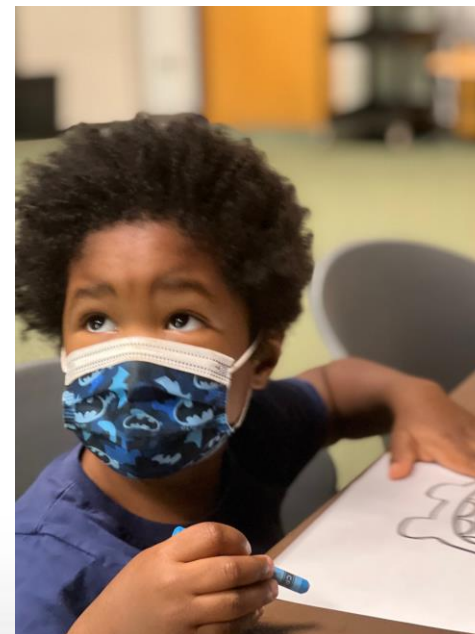


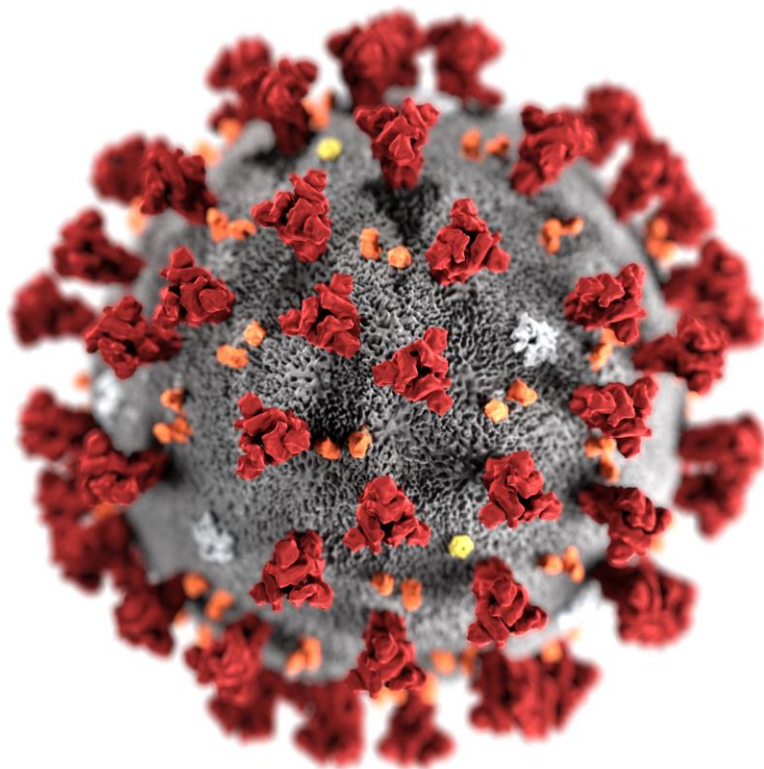


Environmental Justice, Risk and Innovation

Environmental Measurement Symposium Plenary Talk: Where do we go from here?

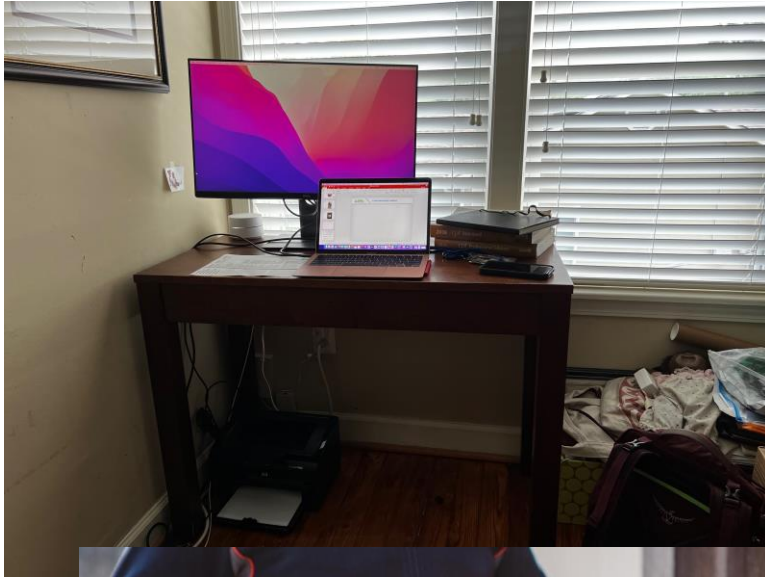
Louie Rivers
EPA ORD













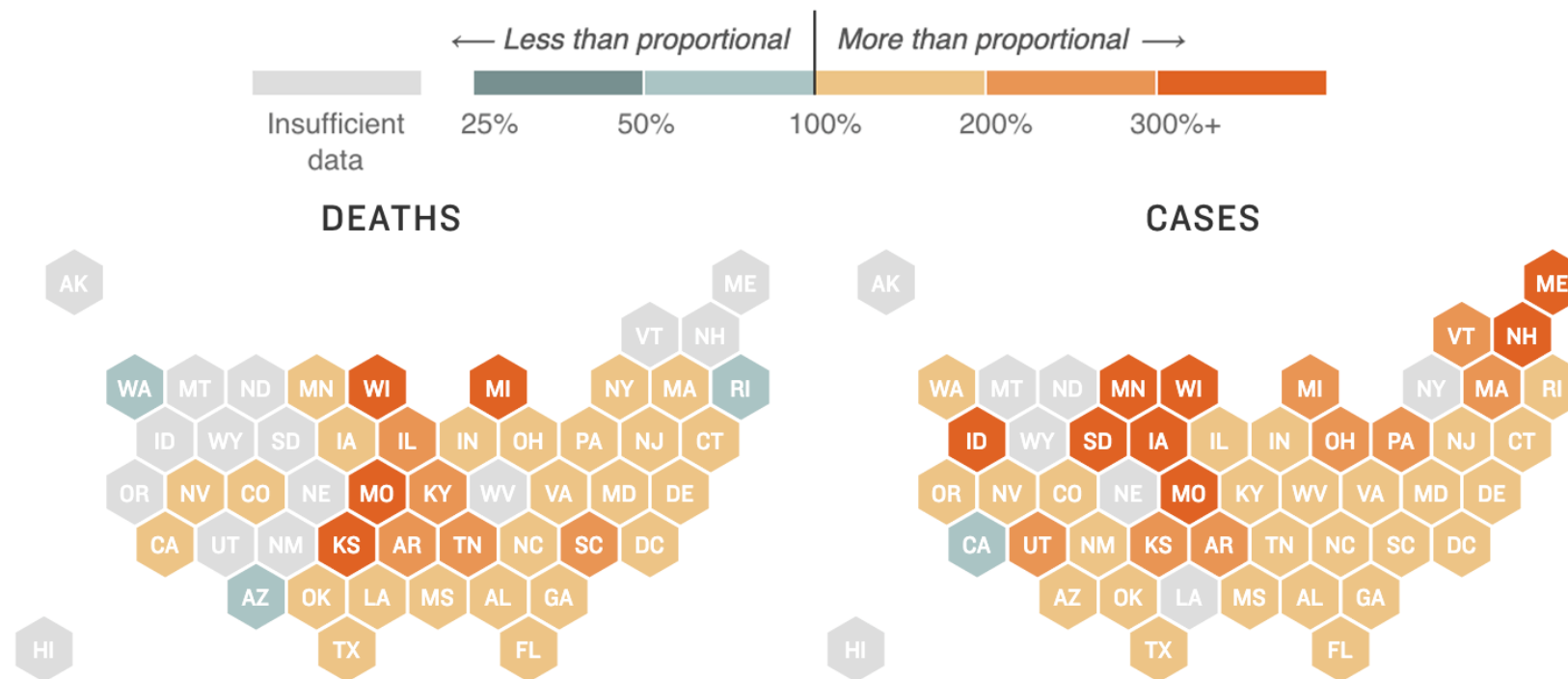






Equity

Coronavirus Deaths and Cases Disproportionately Affect African Americans In Most States





Environmental Justice

- The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.
 - The same degree of protection from environmental and health hazards, and
 - Equal access to the decision-making process to have a healthy environment in which to live, learn, and work.



Environmental Justice

- The fair treatment and ***meaningful involvement*** of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.
 - ***The same degree of protection from environmental and health hazards, and***
 - ***Equal access to the decision-making process to have a healthy environment in which to live, learn, and work.***

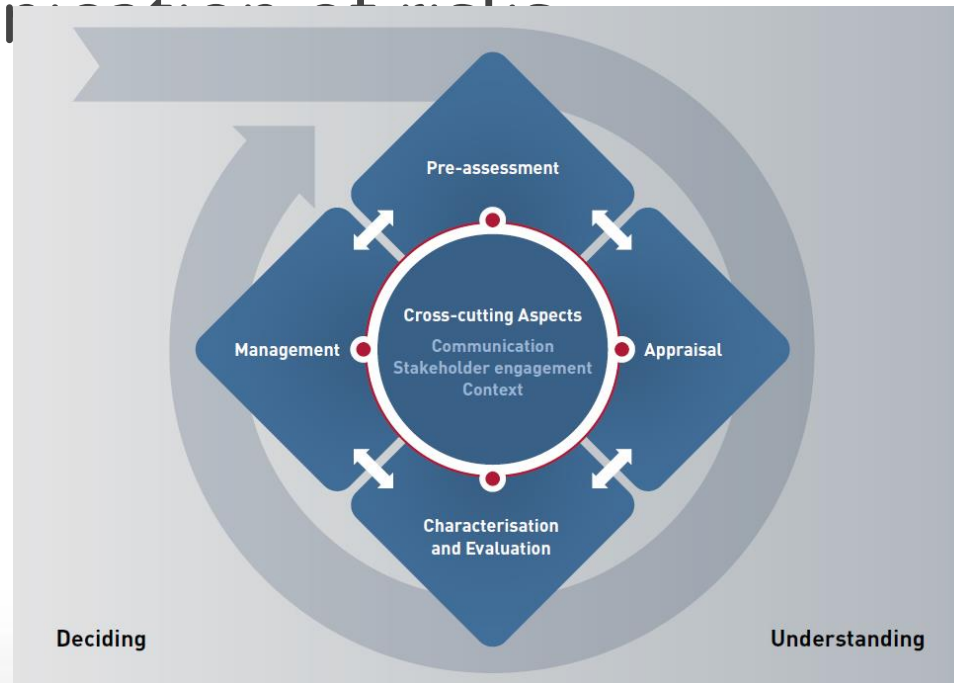


Environmental Justice

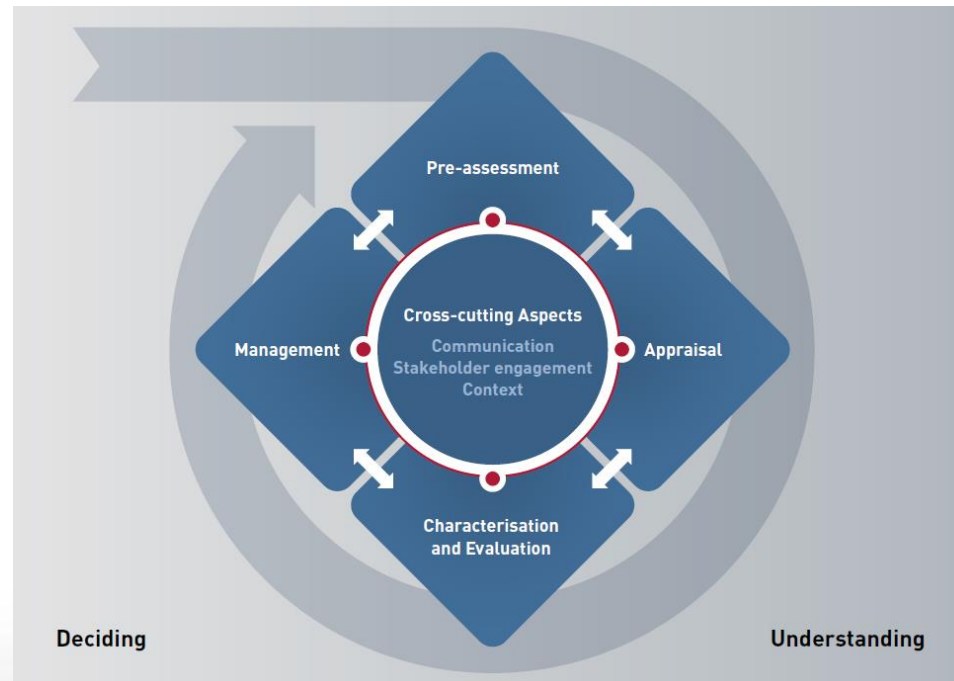
- Procedural Justice

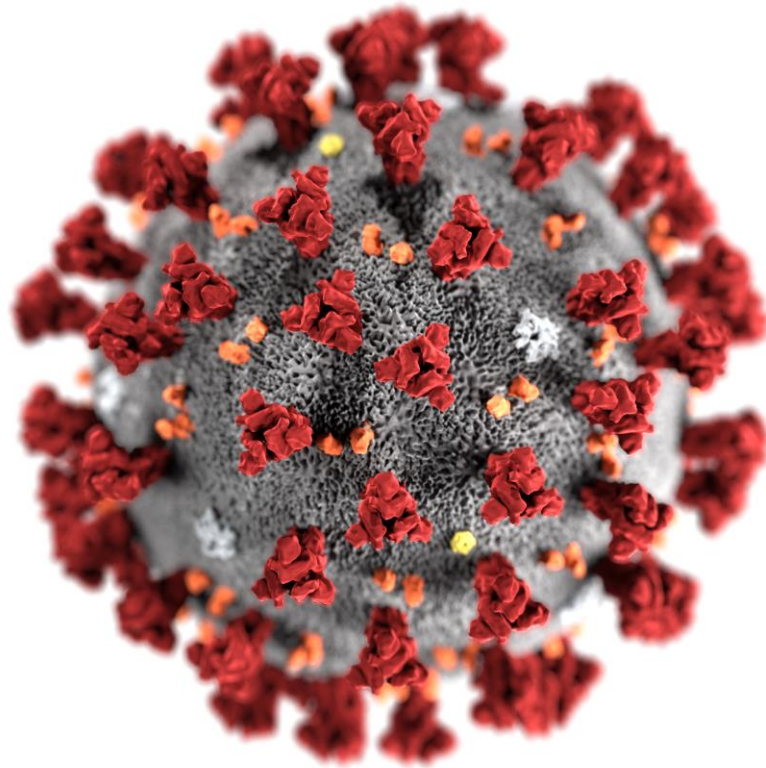


- Risk governance applies the principles of good governance to the identification, assessment, management and communication of risks



- Inclusion of relevant lay stakeholders in risk governance processes









Science of The Total Environment

Volume 621, 15 April 2018, Pages 886-894



Understanding social and behavioral drivers and impacts of air quality sensor use ☆

Bryan J. Hubbell ^a  , Amanda Kaufman ^b , Louie Rivers ^c , Kayla Schulte ^d, Gayle Hagler ^a , Jane Clougherty ^e , Wayne Cascio ^a , Dan Costa ^a 

Show more 

+ Add to Mendeley  Share  Cite

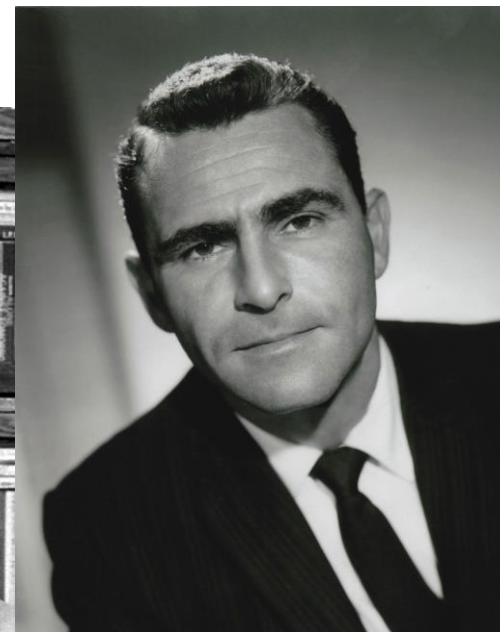
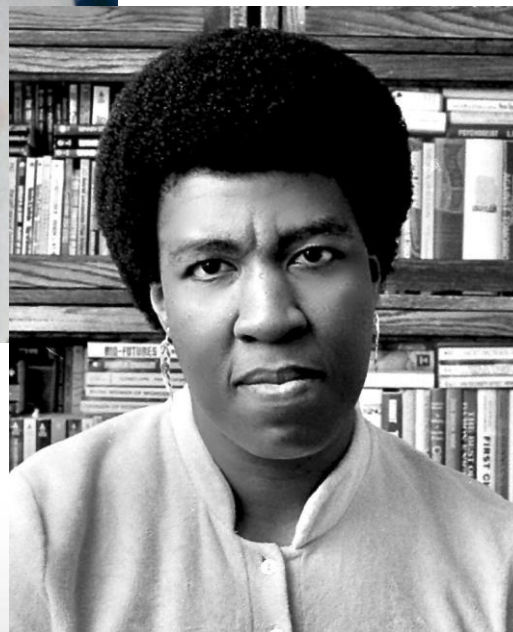
<https://doi.org/10.1016/j.scitotenv.2017.11.275>

[Get rights and content](#)

- The democratic, inclusive governance of new sciences and technologies.
 - Anticipation
 - Reflexivity
 - Inclusion
 - Responsiveness



- Anticipation
 - Think of future uses and scenarios for the science or technology we are developing and related risks



- Reflexivity
 - Recognize the limits of our knowledge and to directly reflect on the morality of our work



- Inclusion
 - Substantive input of stakeholders, identify and dissolve barriers precluding involvement



- Responsiveness
 - Take the other steps seriously; change how we work



- The democratic, inclusive governance of new sciences and technologies.
 - Anticipation
 - Reflexivity
 - Inclusion
 - Responsiveness





Responsible Innovation & Environmental Justice





How do we reach frontline communities?

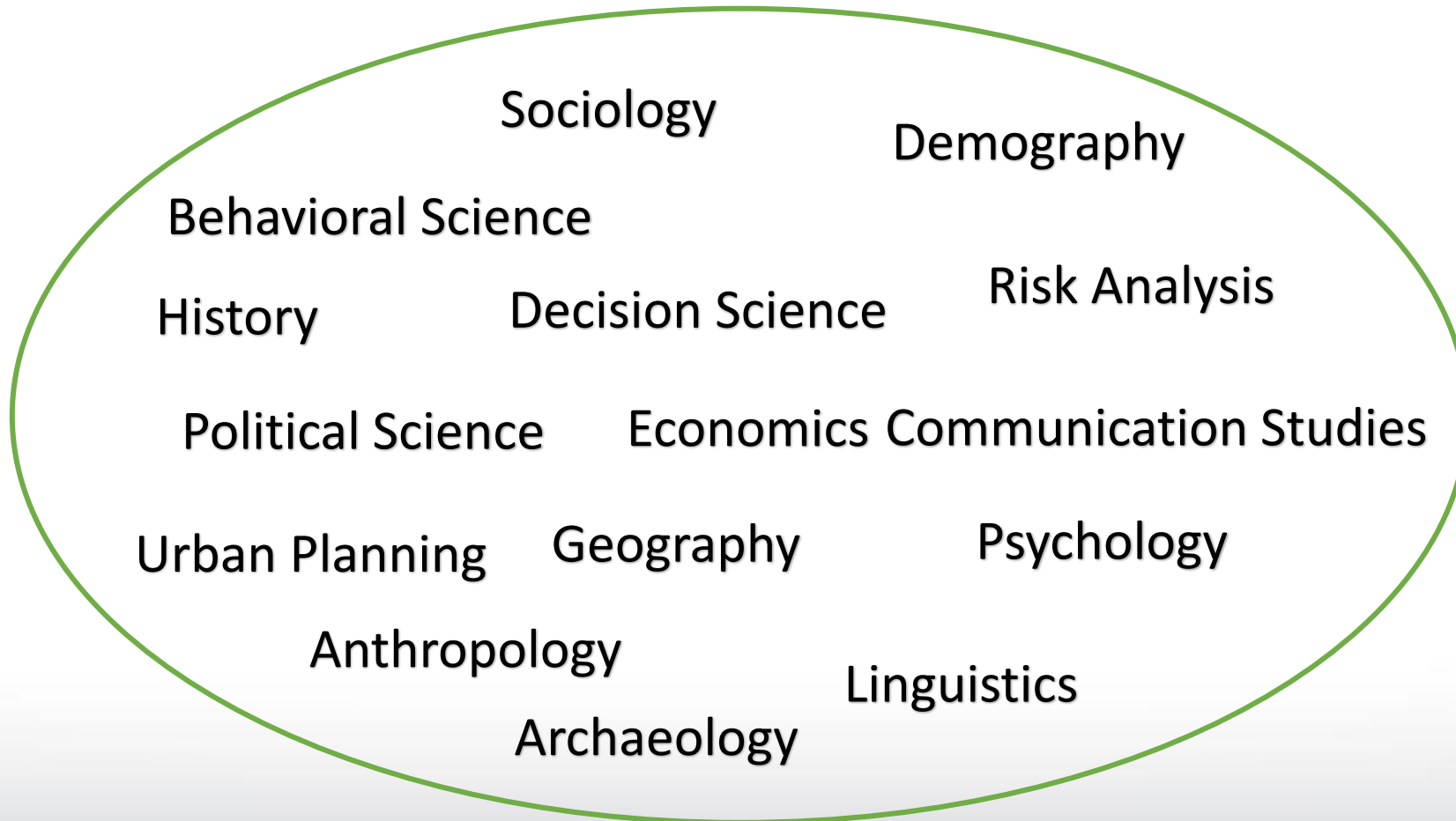
- A greater inclusion of social science methodologies, theories and practices
 - EO 13985: Advancing Racial Equity and Support for Underserved Communities Through the Federal Government
 - Growing recognition of the need for interdisciplinary science to address complex problems





Inclusion of social science methodologies, theories & practices

- What do we mean by the social sciences?





What can the social sciences contribute?

- Help us to engage and partner with communities
 - Participatory Sciences
 - Engages the public in advancing scientific knowledge by formulating research questions, collecting data, and interpreting results.
 - Knowledge Co-production
 - The integration of different knowledge systems and methodologies to systematically understand the phenomena, systems, and processes being studied in a research project
- Provide holistic data for evidence driven decision making process.
 - Quantitative data
 - Qualitative data
- How do people and communities implement the technical solutions that we identify/develop?
- Evaluate the results of interventions, technologies and decisions



Benefits of integrated social-environmental research

- Improved engagement with communities and stakeholder groups
- Improved public benefits – government initiatives to integrate social science research findings about how people make and act on decisions
- Targeted solutions – better understanding of impacts on different types of communities
- Effective and flexible solutions that incorporate the social, cultural, and economic context of the community are more likely to be successfully implemented
- Explicit consideration of responsible innovation





Thank you! Questions?

Louie Rivers III

Social Science Advisor

US EPA Office of Research and Development

919-541-1005

Rivers.Louie@epa.gov

A large, stylized question mark shape composed of the words WHO, WHERE, WHEN, WHY, HOW, and WHAT. The words are arranged in a way that they form the outline and internal structure of the question mark. The words are in various sizes and orientations, creating a dense, textured appearance. The question mark is black on a white background.

A small, stylized question mark shape composed of the words WHO, WHERE, WHEN, WHY, HOW, and WHAT. The words are arranged in a way that they form the outline and internal structure of the question mark. The words are in various sizes and orientations, creating a dense, textured appearance. The question mark is black on a white background.