

Commerce Data Service

An Introduction



Dr Tyrone W A Grandison
Deputy Chief Data Officer



The US Department of Commerce
creates the conditions for economic
growth and opportunity





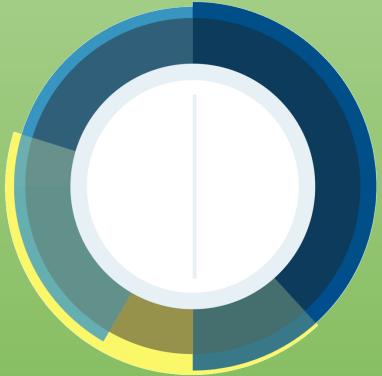
UNITED STATES
PATENT AND TRADEMARK OFFICE



INTERNATIONAL
TRADE
ADMINISTRATION

NIST





Commerce Data Service

- Data Engineers
- Infrastructure Engineers
- Data Scientists
- Front End Engineers
- Technologists

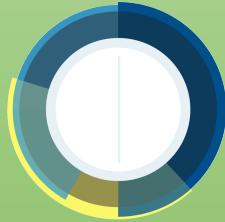
What Are We About

- **Strategic Goal:**

- Maximize the positive impacts of Commerce data on society.

- **Strategic Objectives:**

- **Fuel economic growth** by unleashing Commerce data and making it easier for businesses, communities, and citizens to access, analyze, and use the data.
- **Create data-driven government** by combining and using data in new ways to increase the efficiency, effectiveness, and security of Commerce programs.
- **Deliver data services** by leveraging advances in data science, software development, and standards to accelerate product innovations.



What We Do

➤ Data Products & Services

➤ Development, delivery and consulting on Open Data and API projects; involving integration, analysis, visualization and increased utilization.

➤ Data Science

➤ Transforming raw data into insights, products, and applications to empower data-driven decision making.

➤ Data Education

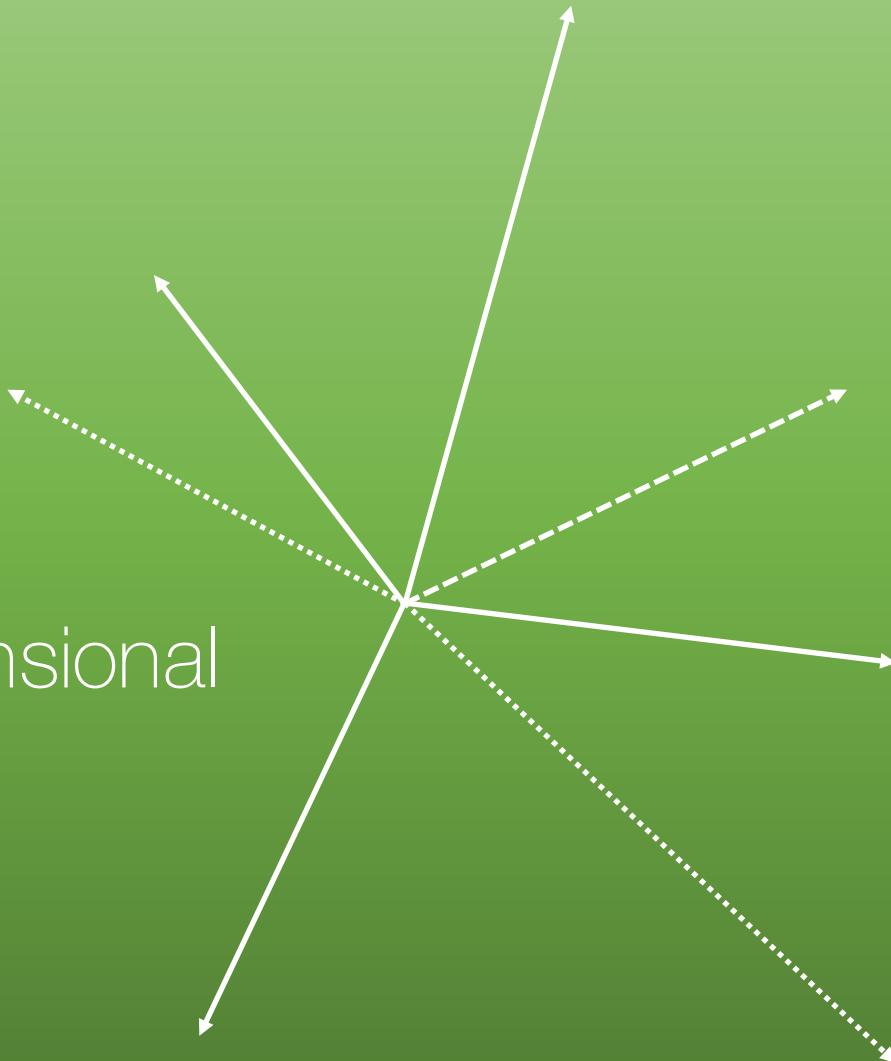
government takes
on the hardest,
inelastic problems



optimum



n-dimensional



Private sector
data science



Government
data science



Six conditions for scoping for awesomeness

- Access to the field
- Access to actionable resources
- A reason for existence
- Ethical intervention points
- Methodologically defensible yet intellectually accessible
- Path to sustainability



	A Reason to Exist	Access to Valid Resources	Methodologically defensible yet intellectually accessible	Ethical Intervention Points	Path to sustainability
Ideas	×	×			
Research	×	×	×		
Products	×	×	×	×	×
Services	×	×	×	×	×



two examples of what we are doing

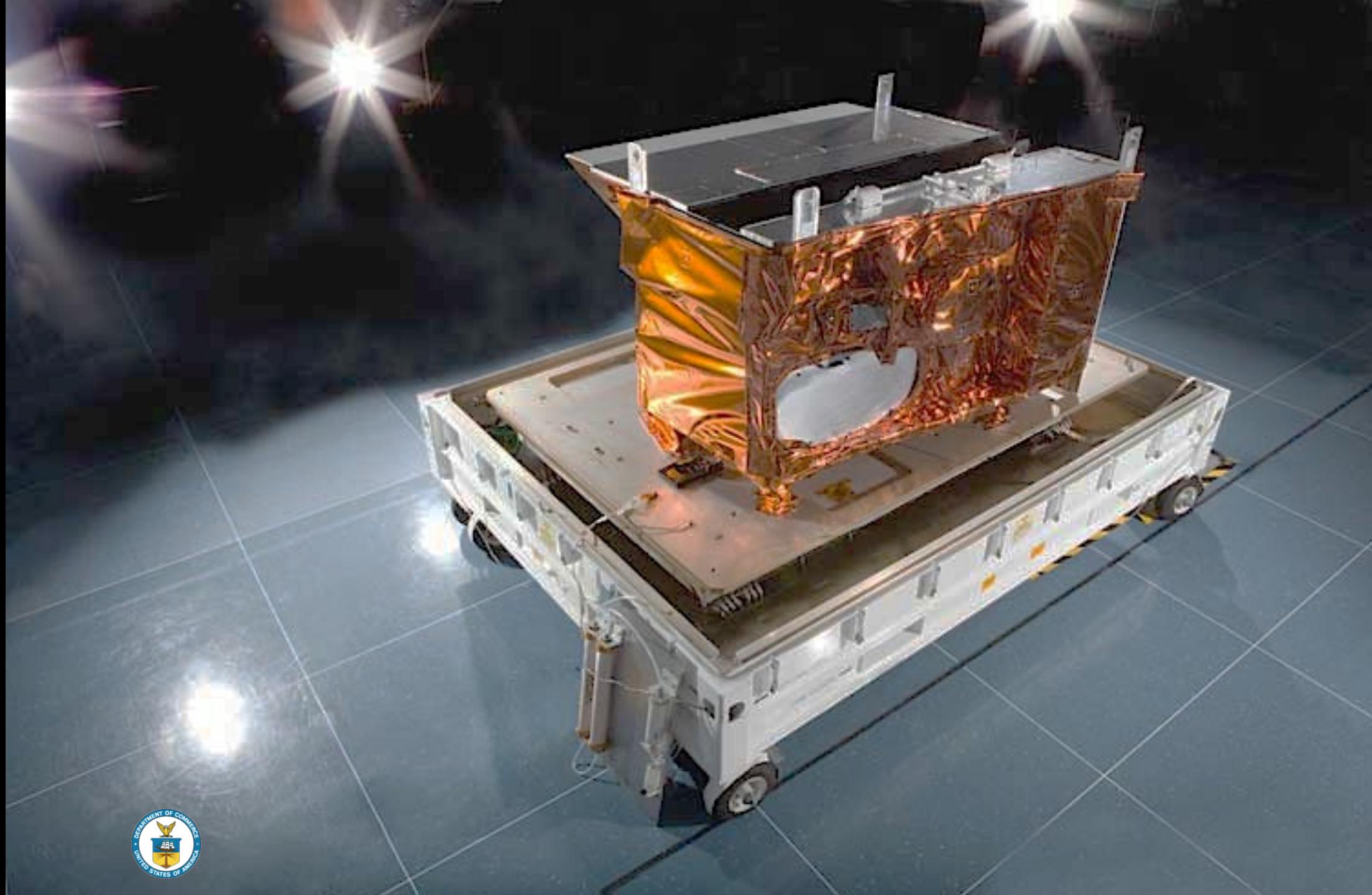
- Satellite data for socioeconomic
- Open data maximization

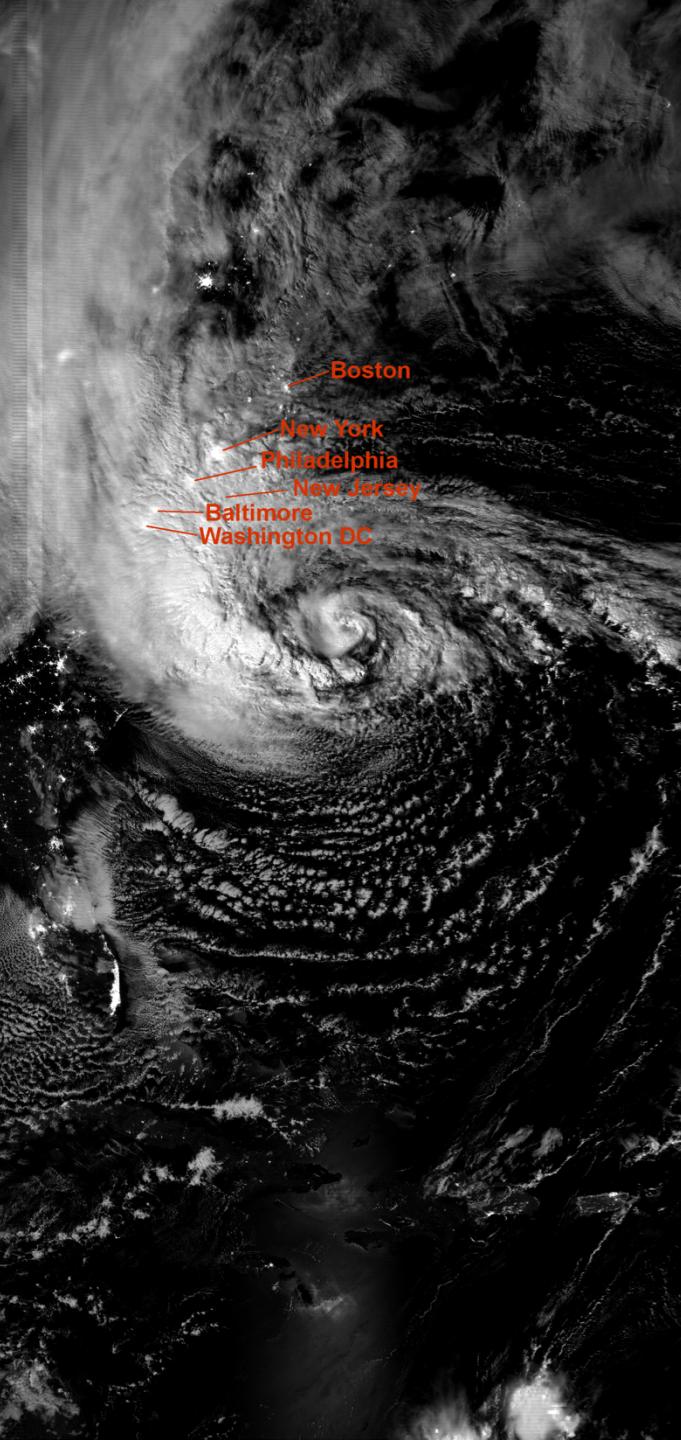


Satellite data for
socioeconomics















Imagery twice a day = super high frequency

Full world coverage = predict anywhere

Sub-regional resolution = see fine grain

Multiple spectral bands = see different things



The Night Light Development Index (NLDI): a spatially explicit measure of human development from satellite data

C. D. Elvidge¹, K. E. Baugh², S. J. Anderson^{2,3}, P. C. Sutton³, and T. Ghosh²

Estimation of Gross Domestic Product at Sub-National Scales using Nighttime Satellite Imagery

Paul C. Sutton¹, Christopher D. Elvidge² and Tilottama Ghosh³

Methods for Global Survey of Natural Gas Flaring from Visible Infrared Imaging Radiometer Suite Data

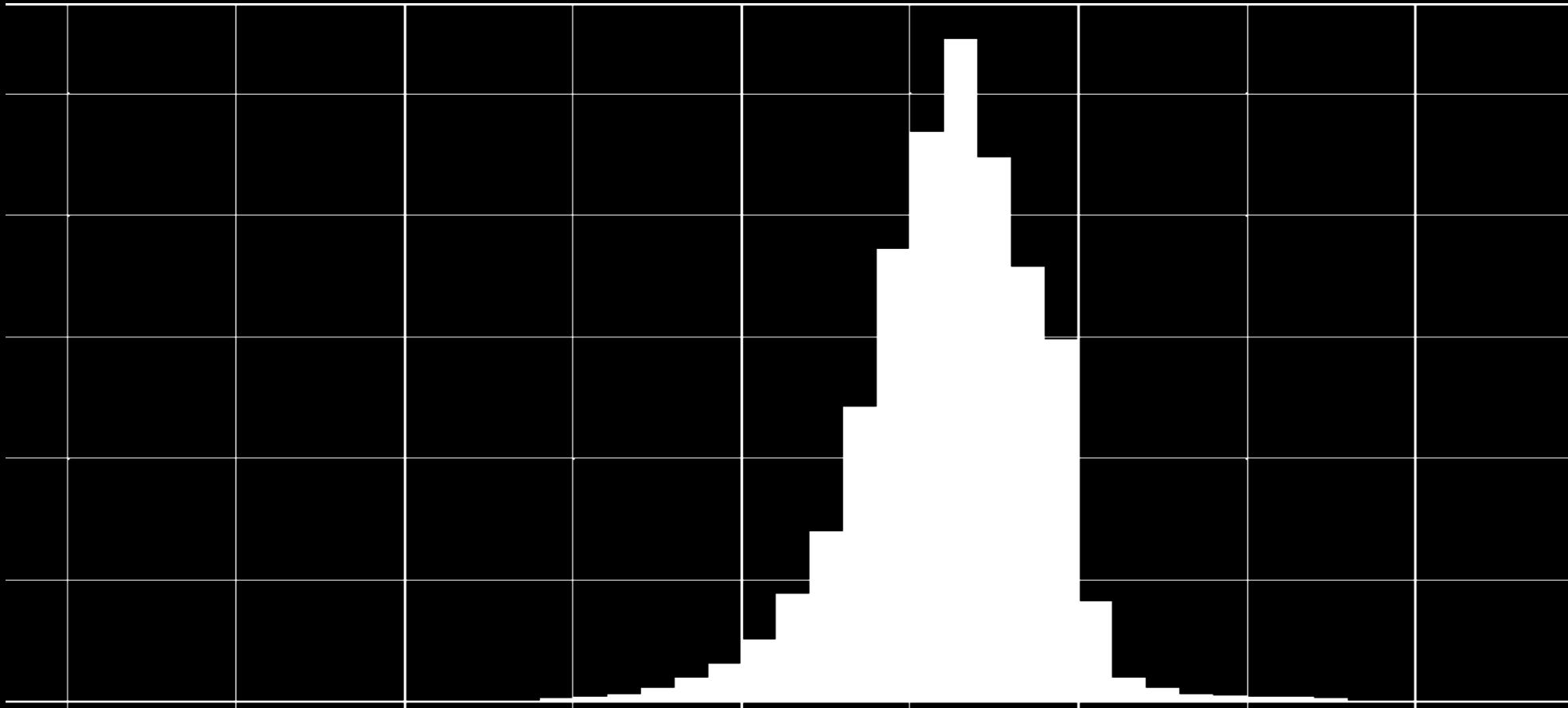
Christopher D. Elvidge ^{1,*}, Mikhail Zhizhin ^{2,3}, Kimberly Baugh ², Feng-Chi Hsu ² and Tilottama Ghosh ²

Automatic Boat Identification System for VIIRS Low Light Imaging Data

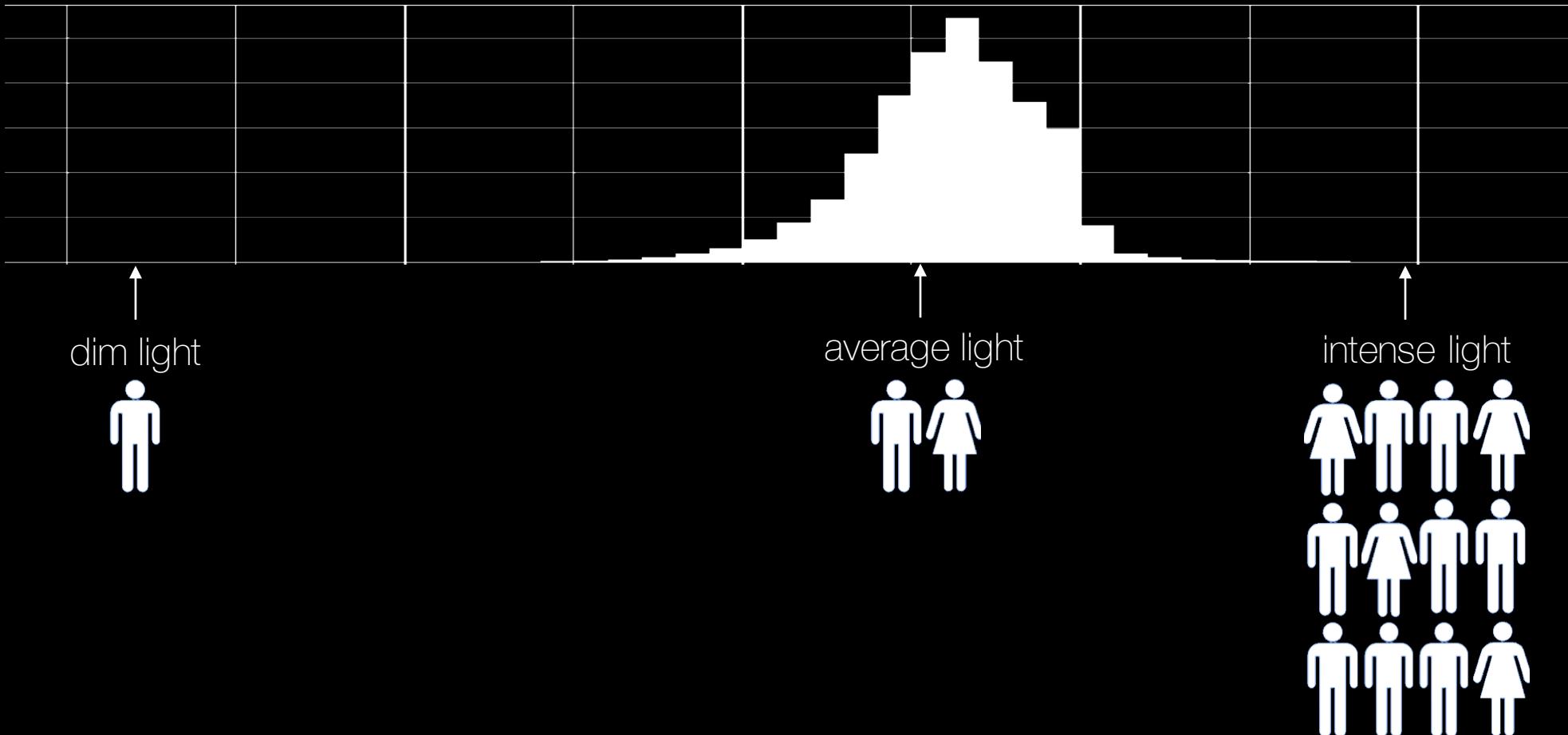
Christopher D. Elvidge ^{1,*}, Mikhail Zhizhin ², Kimberly Baugh ² and Feng-Chi Hsu ²



The US as a histogram



radiance roughly proxies for people activity





New York



Los Angeles



Chicago



Houston



Philadelphia



Phoenix



San Antonio



San Diego



Dallas



San Jose



Austin



Jacksonville



San Francisco



Indianapolis



Columbus



Fort Worth



Charlotte



Detroit



El Paso



Seattle



Denver



Washington



Memphis



Boston



Nashville



Baltimore



Oklahoma City



Portland



Las Vegas



Louisville



Milwaukee



Albuquerque



Tucson



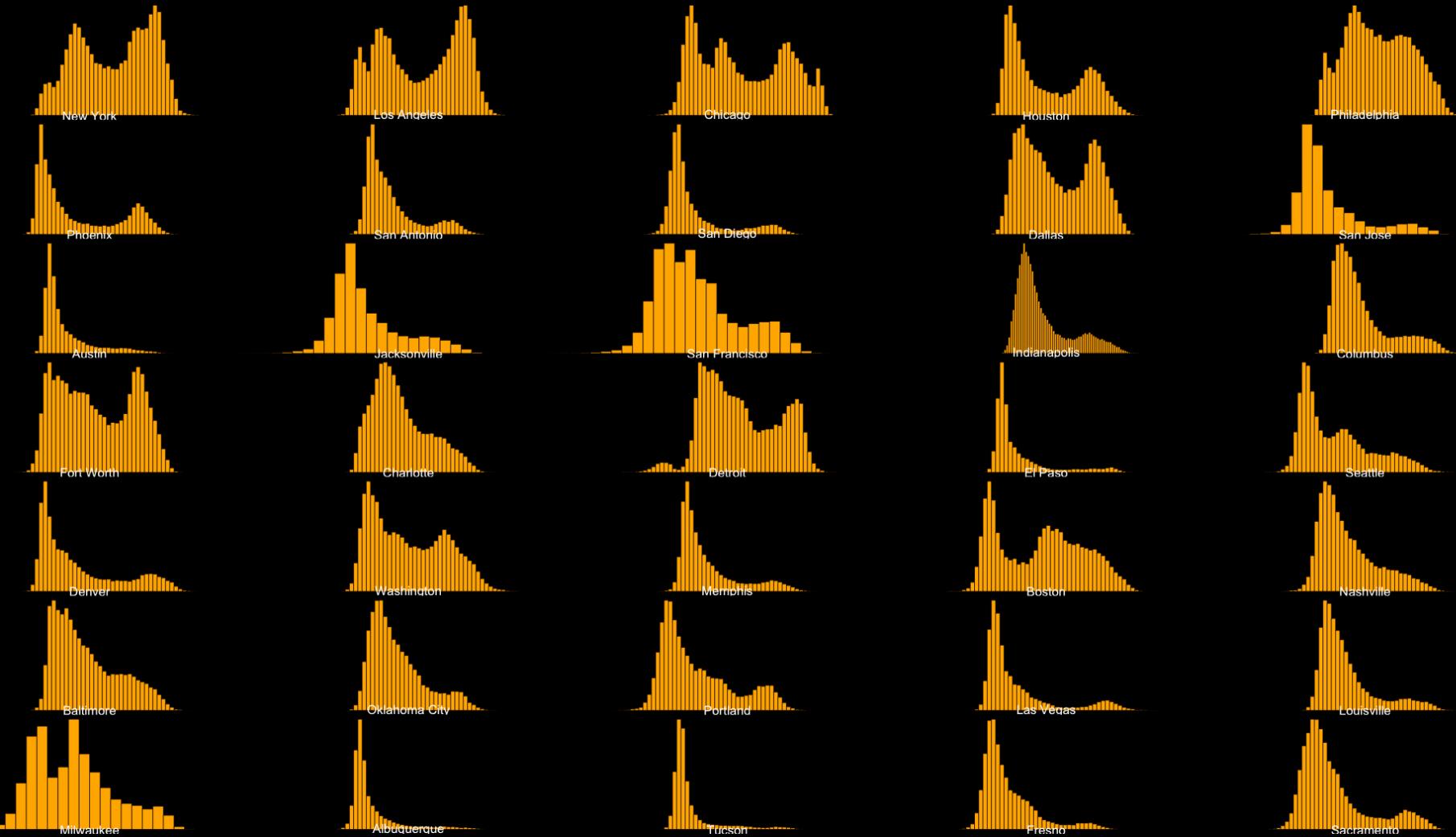
Fresno



Sacramento

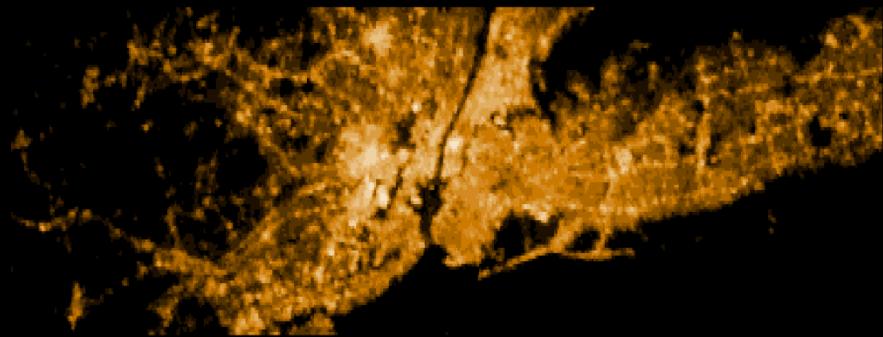


35 largest metro areas at night

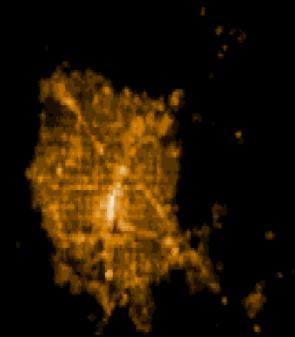
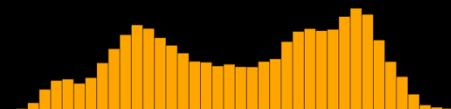


Histograms: 35 largest metro areas

Two histogram comparison



New York City

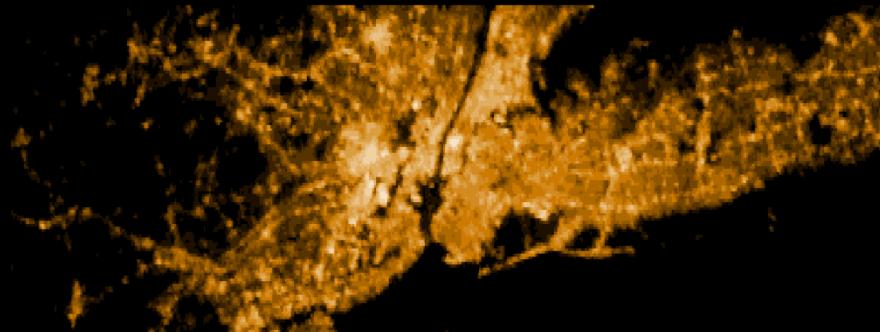


Las Vegas

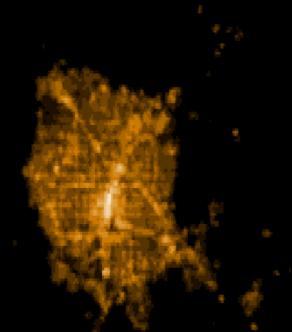


pixel decomposition = population prediction

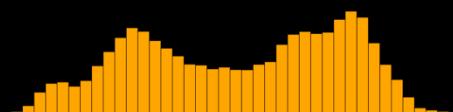
Two histogram comparison



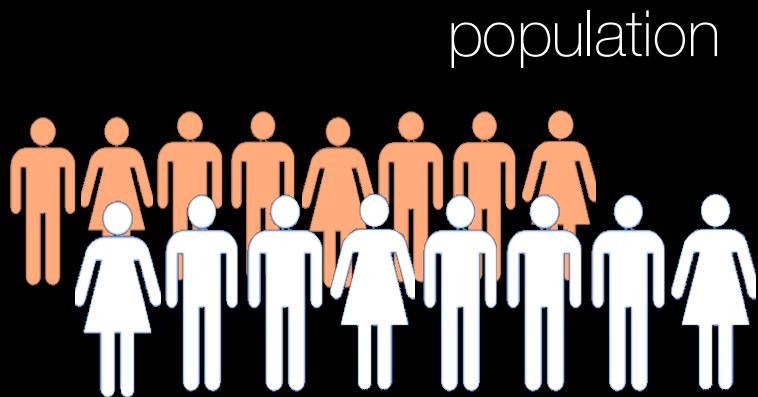
New York City



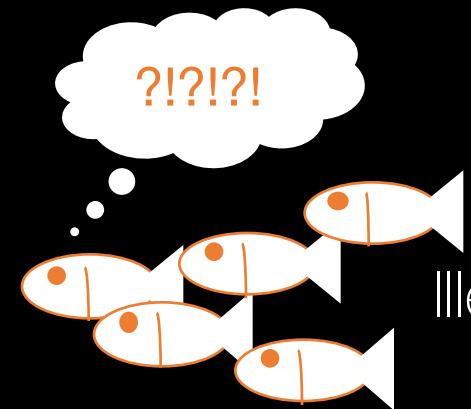
Las Vegas







population



Illegal fishing



gas flares



DATA



KNOWLEDGE



ACTION

Open data maximization





innovation

innovation in
your field

knowledge gap



data is often fit for a
singular purpose and
wide spread usability is
not typically considered

If you build it



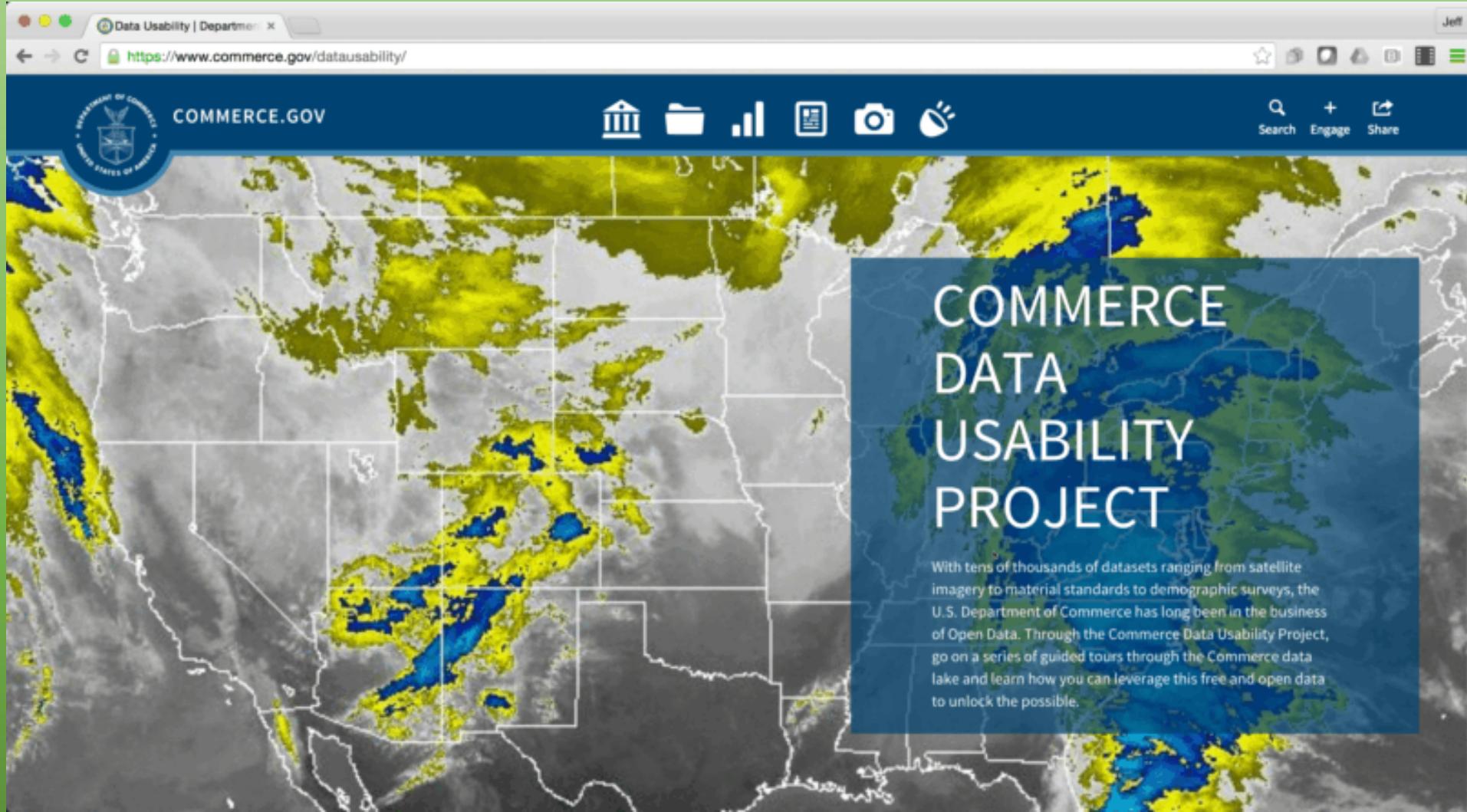
They will come

data usability ought to be
the data dissemination
priority.

a novel analysis or question posed to the
data

visually arresting graphics and engagement
with the public

open, free code and data for the public to
use



Commerce Data Usability Project

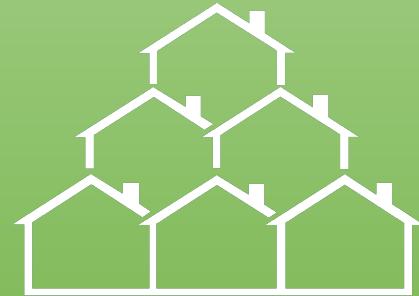
[commerce.gov/datausability](https://www.commerce.gov/datausability)



[Find your users](#)



[Understand security](#)



[Find affordable housing](#)



[Determine hail risk](#)



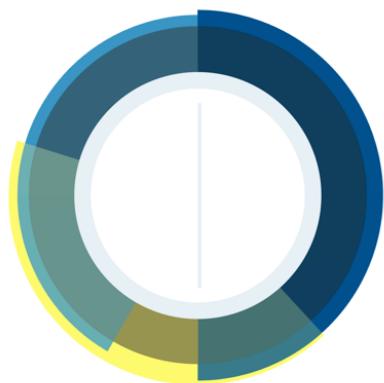
[Predict rainfall and flooding](#)



[Determine human activity; using satellite data](#)



[Help with Water Management](#)



COMMERCE DATA SERVICE



commerce.gov/dataservice



data@doc.gov



@CommerceGovData

Other Projects



Income Across **AMERICA**

Explore how income changes across geographies and demographics.

[Browse Topics](#)

or

[Explore Data](#)

View and Build Powerful Visualizations

Income distribution in the United States is a complex issue that everyone deserves the right to

The MIDAAS Project

<https://midaas.commerce.gov>

The Opportunity Project

An official website of the United States Government

This site is currently in beta. [Learn more.](#)

The Opportunity Project

Let's build something amazing together.

Connect

Build

Learn More

The Opportunity Project

opportunity.census.gov



19,623

people on agency websites now

Visits Today

Eastern Time

Visits in the Past 90 Days

There were **334.5 million** visits over the past 90 days.

Top Pages

Now

7 Days

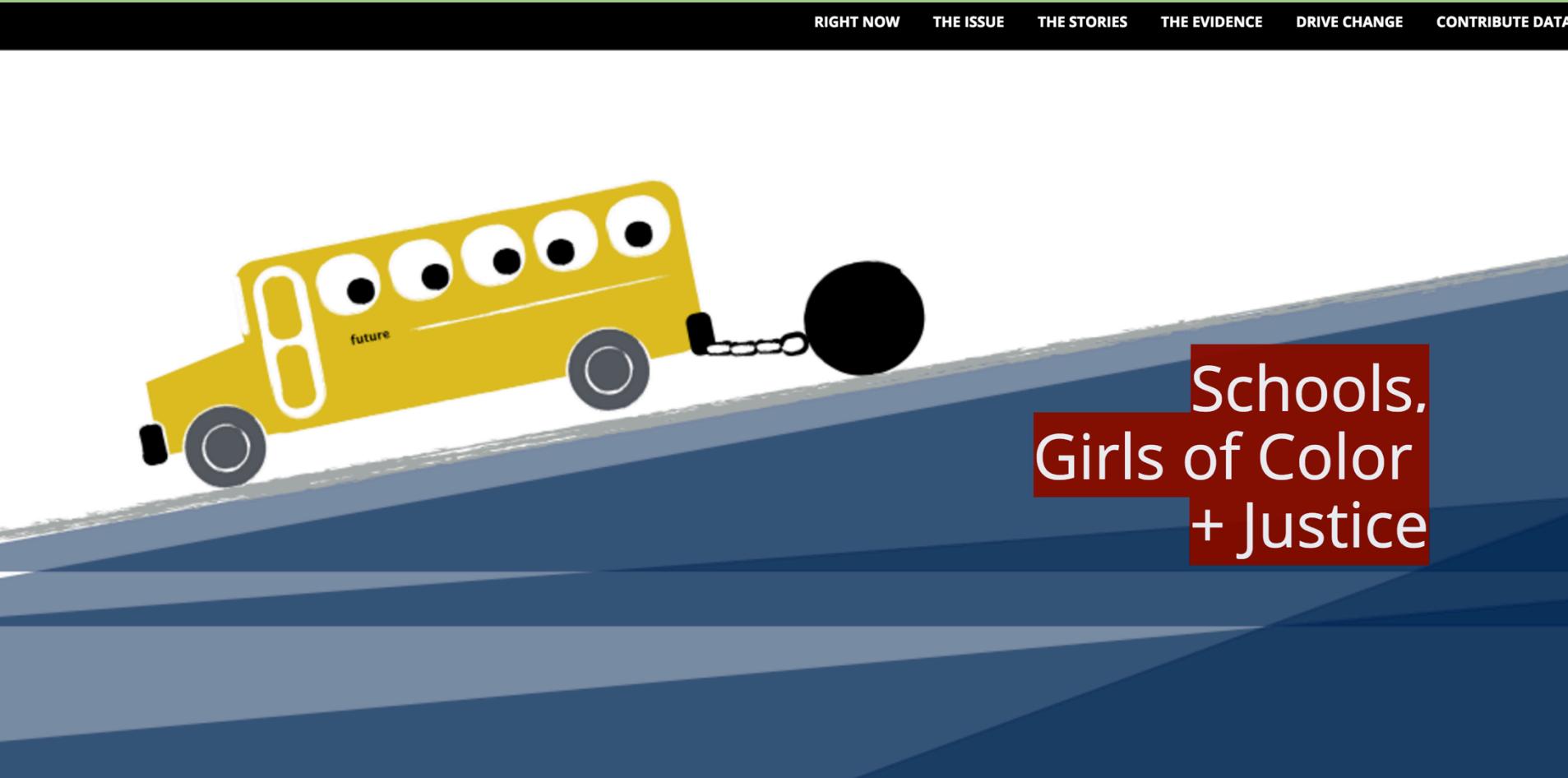
30 Days

People on a *single, specific page* now. [Download the full dataset.](#)

National Weather Service	1,051
National Weather Service - Forecasts by Region	258
Storm Prediction Center Today's Storm Reports	182
Storm Prediction Center Mar 16, 2016 0600 UTC Day 1...	172
Doppler Radar National Mosaic	112
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Eastern U.S. Infrared, Enhancement 4 - NOAA GOES G...	87
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Twin Cities - MN	58

DOC Web Analytics Dashboard

<https://analytics.usa.gov/commerce/>



Help Girls of Color

<http://www.helpgirlsofcolor.org>



New Exporters Initiative

- Inform new strategies for communicating and connecting with businesses to encourage exporting
- Serve as a testbed for optimizing how services are offered and delivered to businesses across different industries
- Operationalize a vision for data-driven government

DELIVERING

- Commerce Data Academy
- Web ReDesign
 - BEA RIMSS
 - NOAA Data Portal
- Patent Data
 - Developer Portal
 - Big Data Science Models
 - Infrastructure for Data Science projects