

# Who is this human

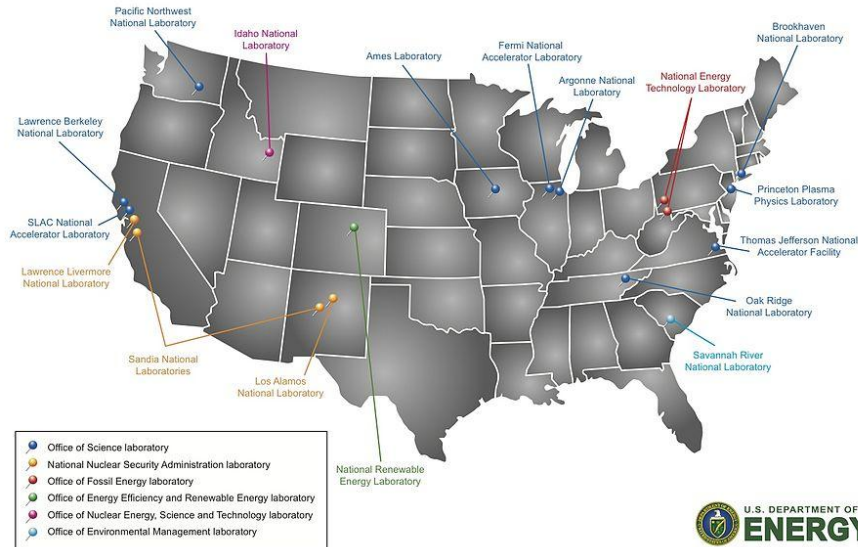
A man in a blue t-shirt is standing on a concrete structure under construction. The structure is made of large, light-colored concrete beams and columns. In the background, a steep, rocky hillside is visible under a clear sky. The overall scene suggests a construction or industrial setting.

- Hometown Portland, Oregon
- Ph.D. at CU in 2012 (CS Systems)
- Food systems activist / Non-profits
- National Lab Scientist (NREL)
- Teacher, Adjunct Professor at CU
- Freelancer, Nerd



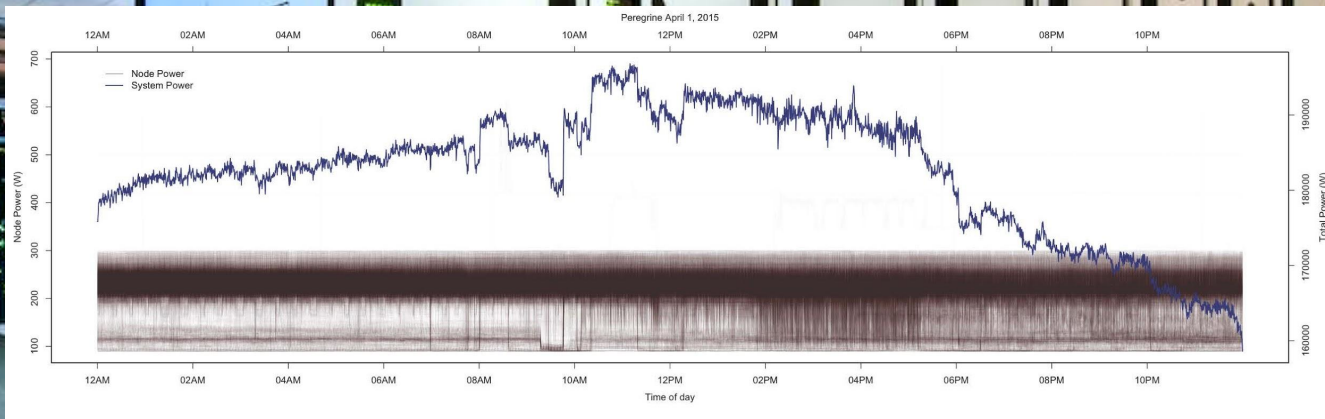
# Doing Data Science for the Man

## Department of Energy National Laboratories



- Wind
- PV Materials
- SEA(C)
- Biomass
- ESI/Grid
- Transportation

# Understanding Super Computer Energy Use





# Rooftop Photovoltaic Potential

the guardian

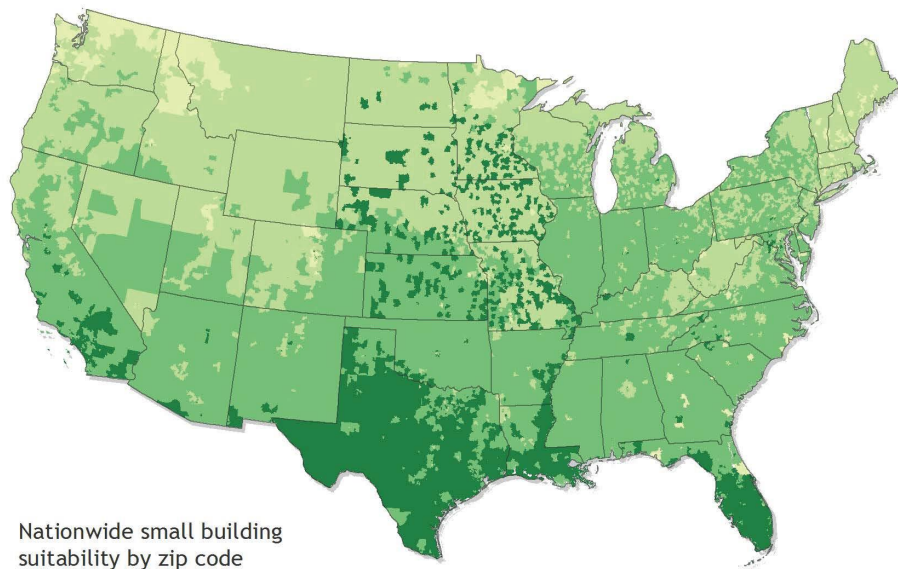
world opinion sports soccer tech arts lifestyle fashion business travel environment

≡ browse all sections

energy pollution climate change wildlife

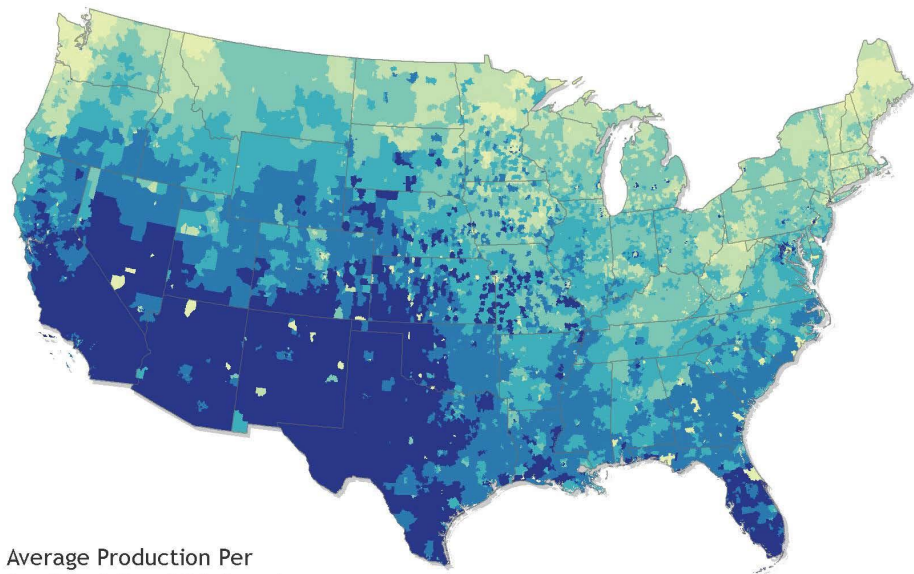
Rooftop solar panels could provide nearly half US power

Rooftop panels could supply 40% of country's power with open spaces such as parking lots offering further potential, study shows. [Conservation magazine reports](#)

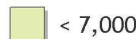




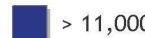


Nationwide small building suitability by zip code

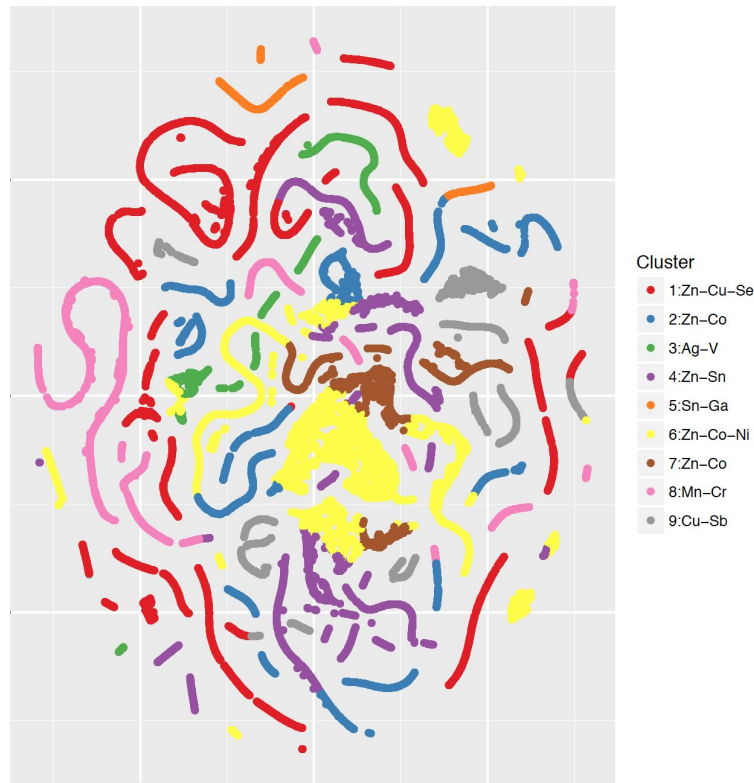
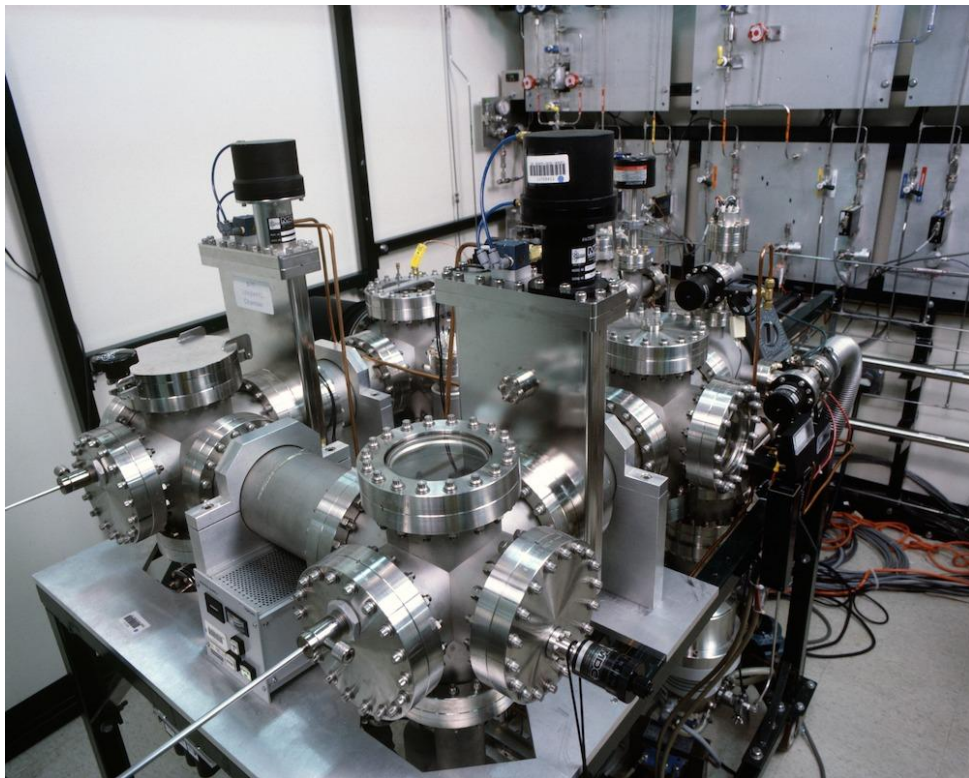
 < 70%  70 - 80%  80 - 90%  > 90%



Average Production Per Small Building (kWh/year)

 < 7,000  7,000 - 8,000  8,000 - 9,000  
 9,000 - 10,000  10,000 - 11,000  > 11,000

# High Throughput Materials for Photovoltaics







# Thanks

[caleb.phillips@nrel.gov](mailto:caleb.phillips@nrel.gov)

You can work for the man, too!  
Grad students: DOE CSGF  
Undergrads: DOE SULI