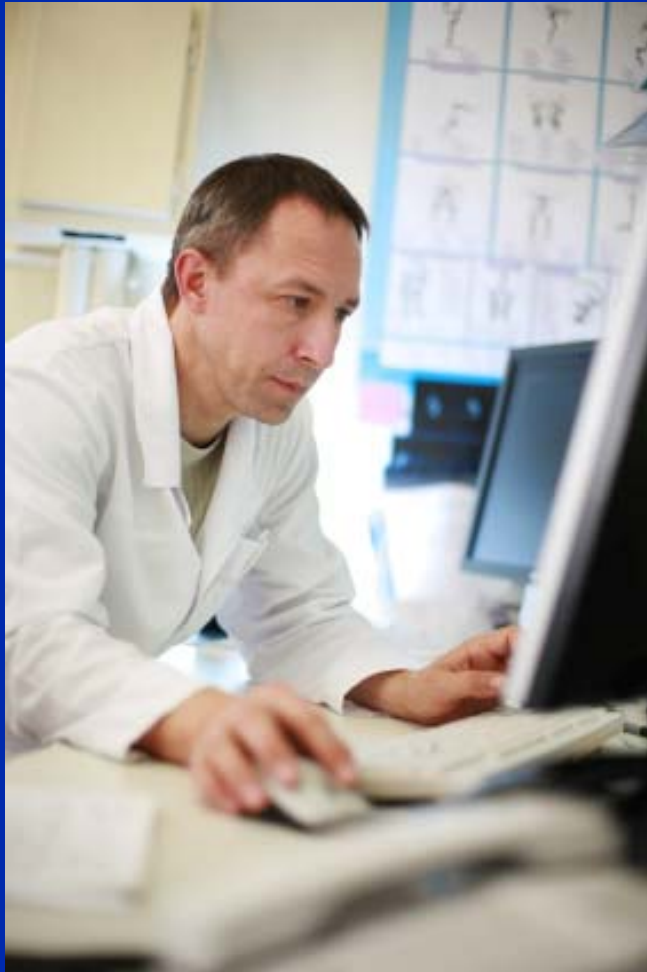# Users and Communities

- Wide range of users and needs
- Needs: Vast, complex → simple
- Users <u>value</u> different things
- Characteristics of data, systems, processing are different
- Some users…..

Bill (Basic Researcher)

Bill wants 10 years of hourly ozone concentration data. He will decode the NetCDF files and compute 8-hr average concentrations. He plans to compare air quality data to children's health in St. Louis and publish his results in a medical journal.

Bill values
- High-quality data
- Access to concentration data

User community size: 100-1,000s

James (Applied Researcher)

James wants ozone and $PM_{2.5}$ concentrations for the last two weeks at a nearby site. James compares the data to check his disposition and water quality measurement that influence fish counts. He adjusts his sampling protocols based on this comparison.

James values

- High-quality data
- Access to concentration data
- Connection via Internet

User community size: 1,000s-10,000

Sue and Eric (Applications)

Sue and Eric monitor real-time hospital admissions for a large city. They access real-time and historical air quality data to understand the potential causes of admission trends. They report any events to the city's emergency management authorities.

Sue and Eric value

- Easy access to processed data
- Operationally reliable systems
- Timely (real-time) data

User community size: 10,000s-100,000
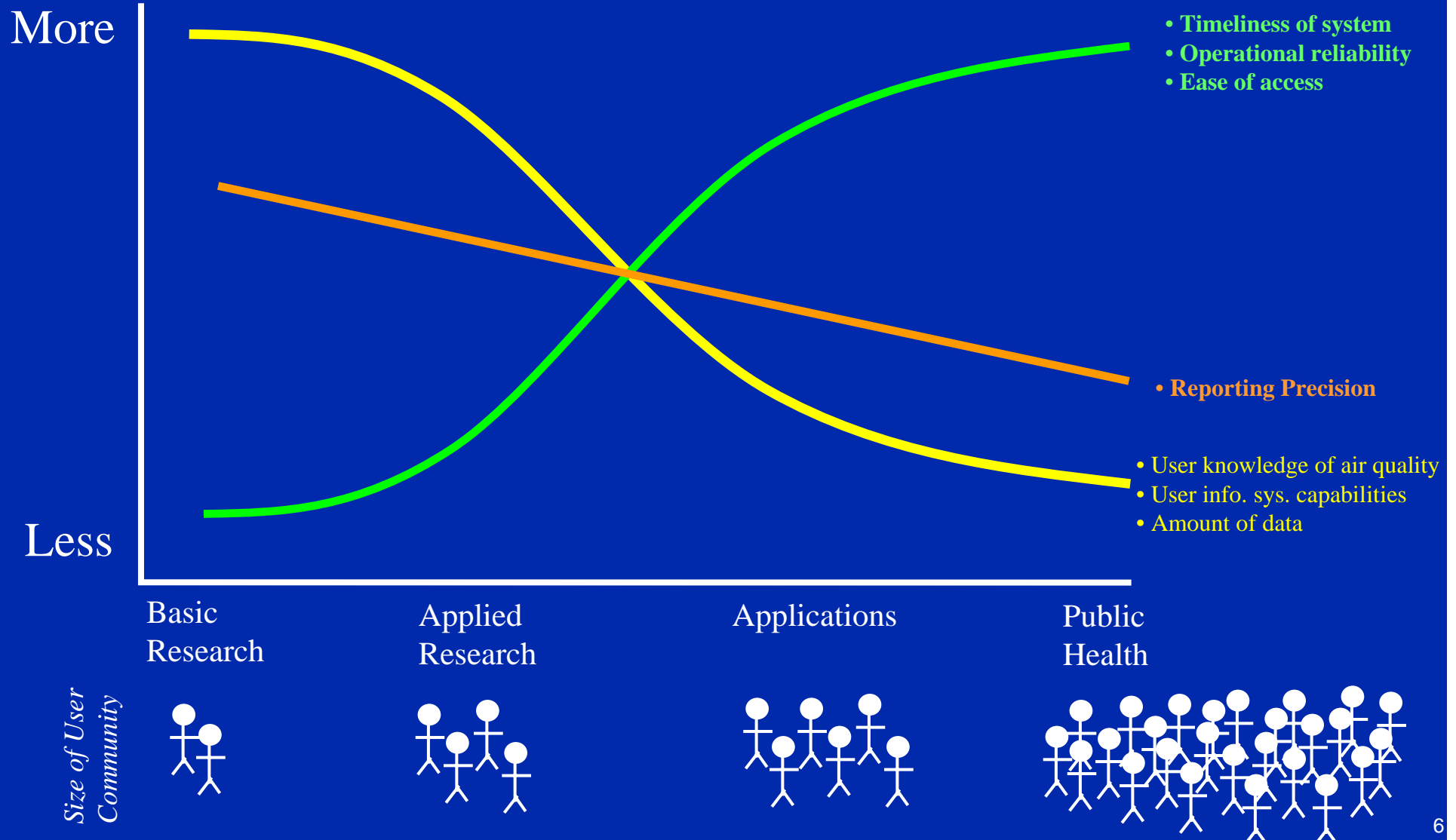
Amanda (Public Health)

Amanda loves to run, but her kids have asthma. She uses AQI forecasts and real-time alerts via cell phone to help determine when to exercise.

Amanda values
- Easy-to-understand information (yes/no)
- Easy, simple, automatic access
- Reliable information source
- Timely (real-time) information

User community size : 100,000-10,000,000s

Important Characteristics

More

Less

- **Timeliness of system**
- **Operational reliability**
- **Ease of access**

- **Reporting Precision**

- User knowledge of air quality
- User info. sys. capabilities
- Amount of data

Basic Research

Applied Research

Applications

Public Health

Size of User Community

6

The Art of Air Quality

Airlight

Taipei
Los Angeles
Denver

Traffic → Processor video & sound → Art Exhibit

AQI →

Andrea Polli - Hunter College, NYC