

# BIG DATA REGIONAL INNOVATION SPOKES

Advancing Big Data Applications

**Fen Zhao**

Staff Associate, Strategic Innovation  
CISE Directorate, Office of the Assistant Director

# THE BD SPOKES TEAM

Many thanks goes out to...

- Al Suarez
- Chaitan Baru
- Sylvia Spengler
  
- Heng Xu
- Earnestine Psalmonds
- Ken Whang
- Martin Wiener
- Anita Nickolich
- Seta Bogosyan
- Lin He

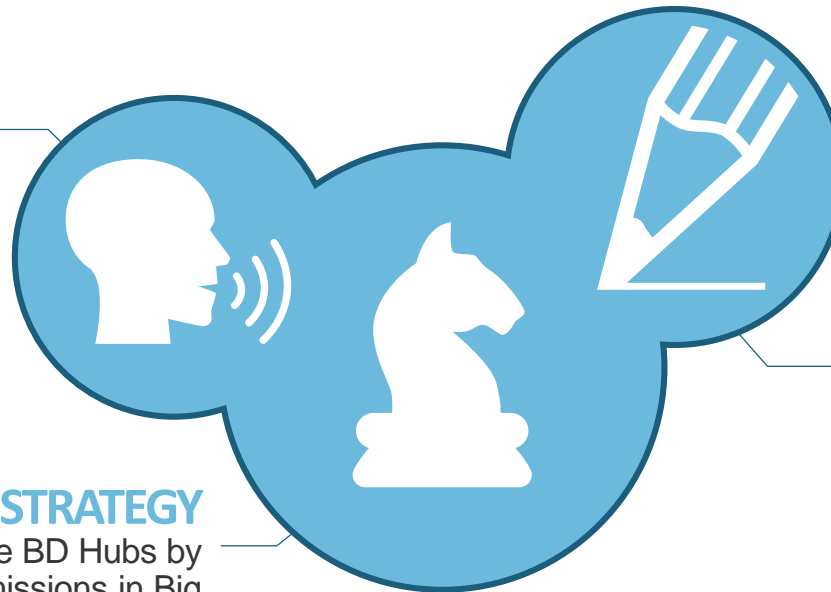


# WHAT IS THE BD SPOKES PROGRAM?

An Agenda for The Discussion Today

## 01 THE HISTORY

BD Spokes is the second phase of the BD Hubs program



## 02 THE STRATEGY

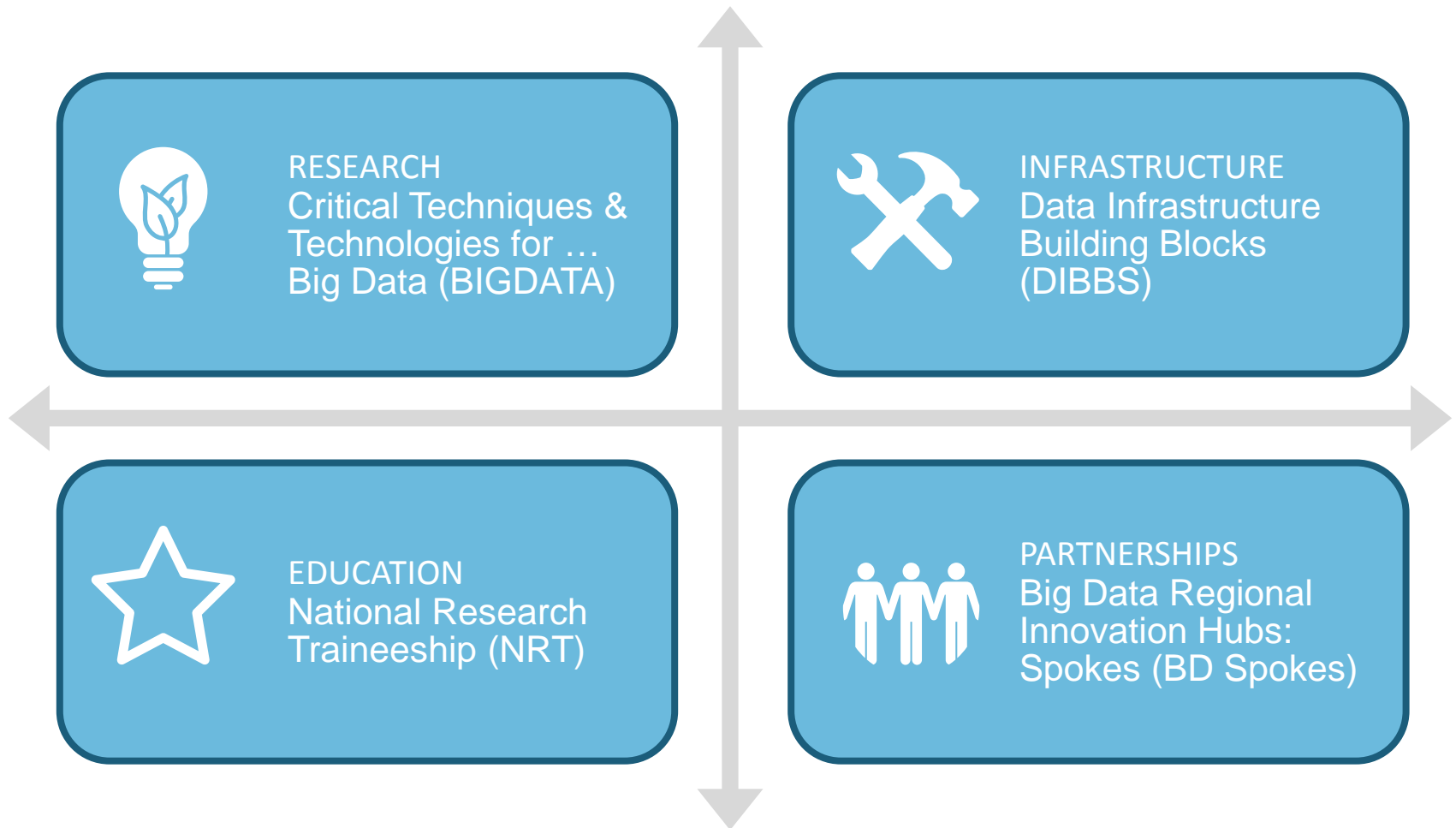
BD Spokes enable the BD Hubs by supporting targeted missions in Big Data application areas

## 03 THE CALL

NSF has released a solicitation (16-510), with Letters of Intent Due Jan 12, 2016 and Full Proposals due Feb 25, 2016

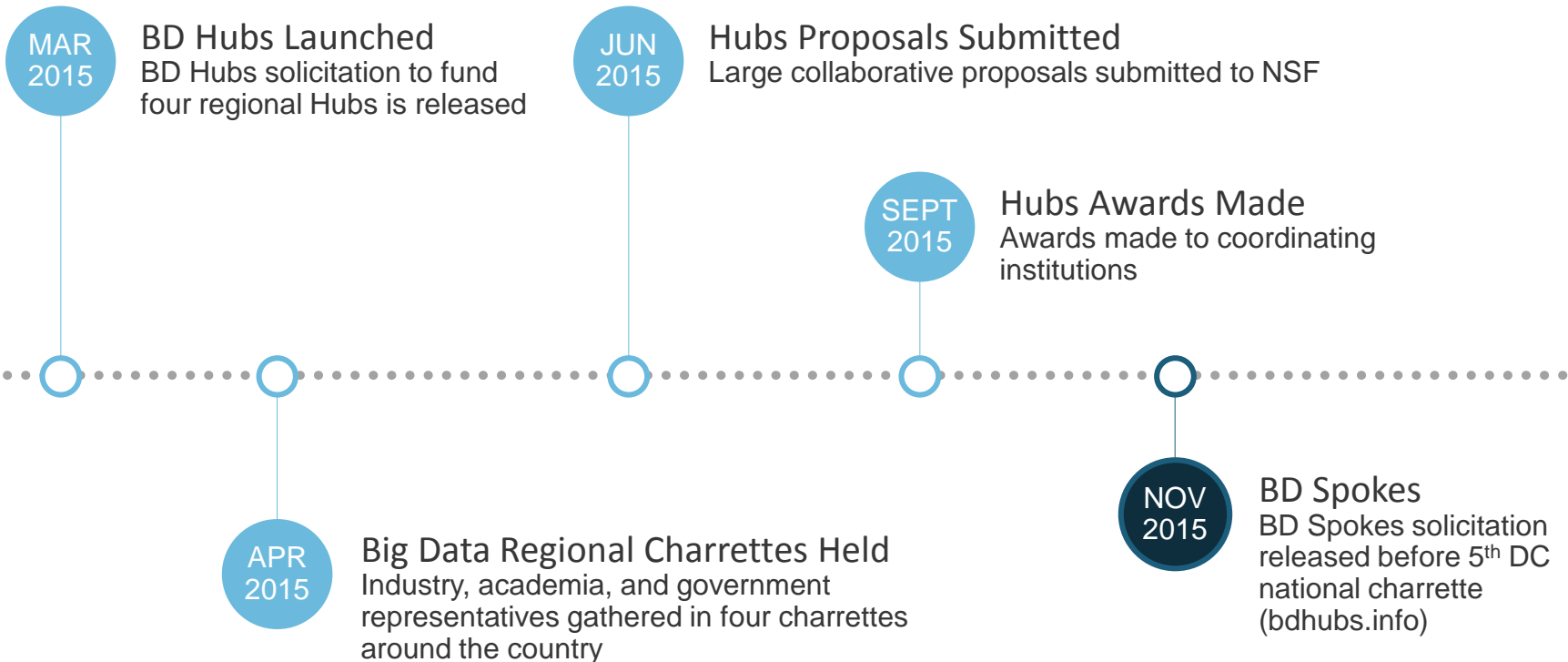
# THE NSF BIG DATA PORTFOLIO OF PROGRAMS

Within the broader NSF portfolio, BD Hubs and BD Spokes focuses on building partnerships around Big Data

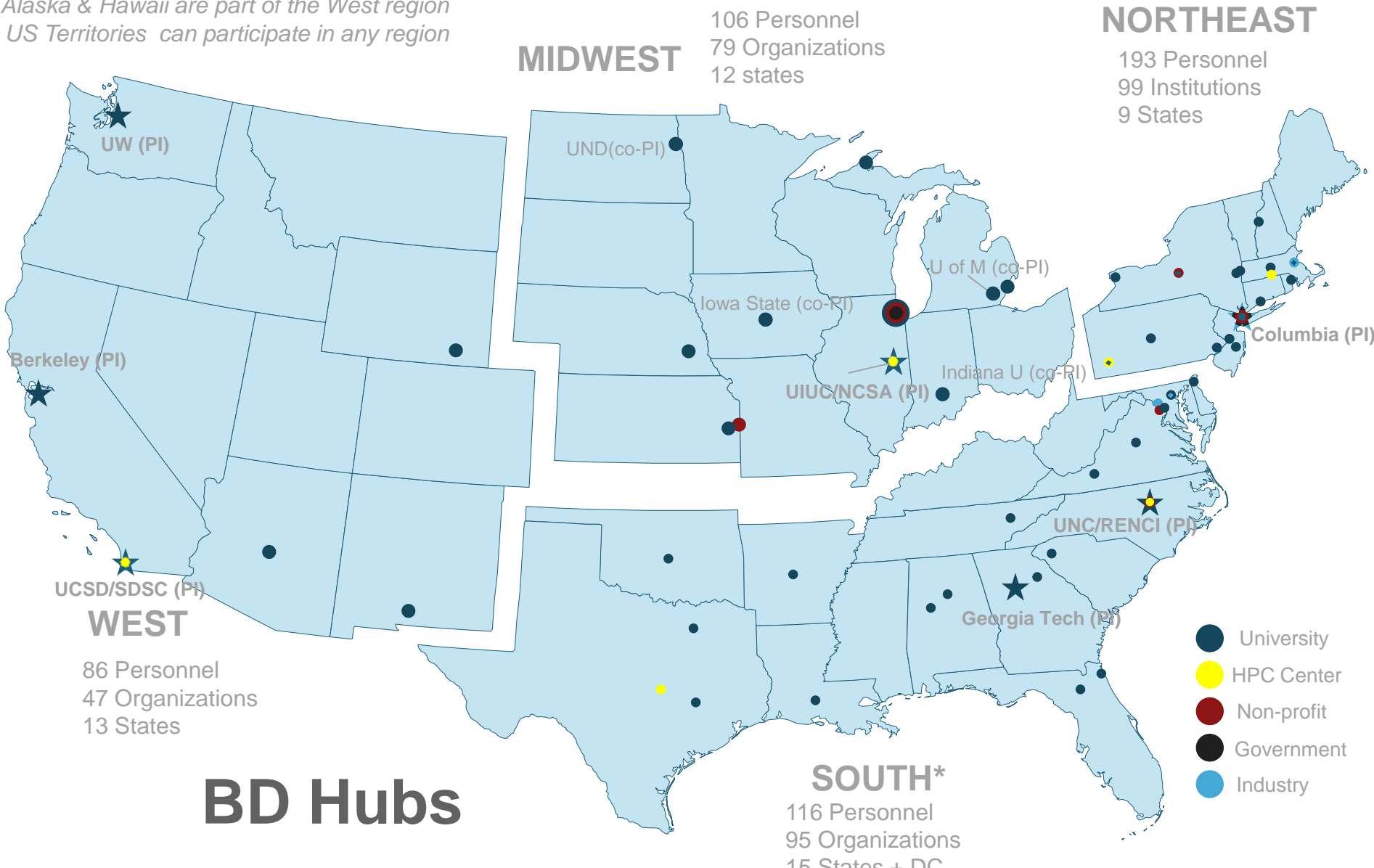


# THE HISTORY BEHIND BD SPOKES

BD Spokes is the second phase of a long term NSF agenda for Big Data Partnerships



Alaska & Hawaii are part of the West region  
 US Territories can participate in any region



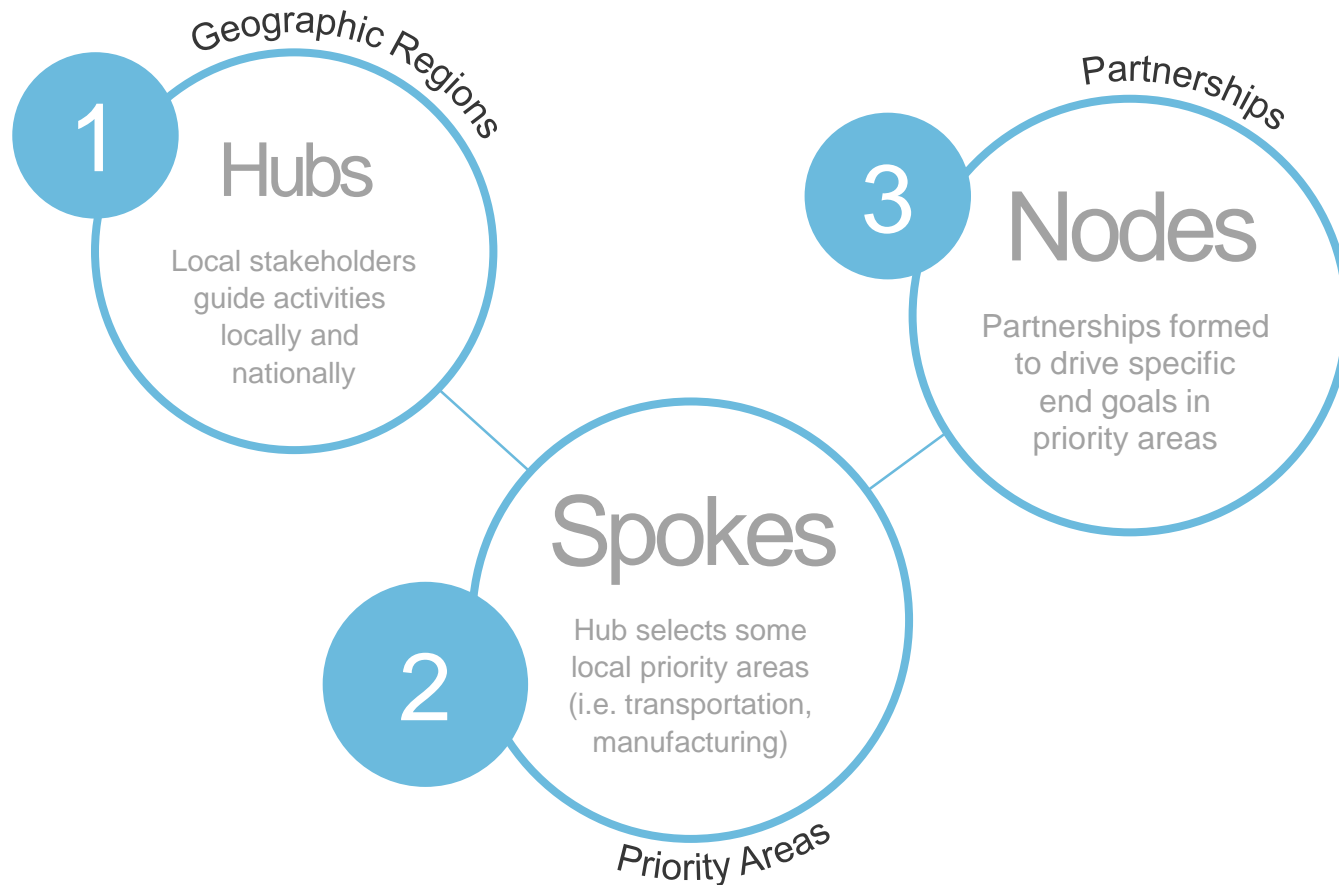
Points indicate affiliations of individuals named as steering council members and/or task leads.

\*South points indicate Senior Personnel



# THE BD HUBS AND SPOKES NETWORK

“Hub and Spoke”– A Nation-Wide Network for Data Innovation



# SUPPORT FROM BD HUBS

The regional BD Hub Steering Committee will provide general guidance to BD Spokes and assist with coordinating with the national BD Hub network, other BD Spokes, and the broader innovation ecosystem.

All proposals to the BD Spoke solicitation must include a letter of collaboration from a BD Hub coordinating institution.



# The strategy behind BD SPOKES

BD Spokes are  
not your typical R&D project  
nor are they mini Hubs

# SPOKES MAJOR THEMES

Three different ways of  
slicing the Big Data  
Innovation problem





Accelerating progress towards societal

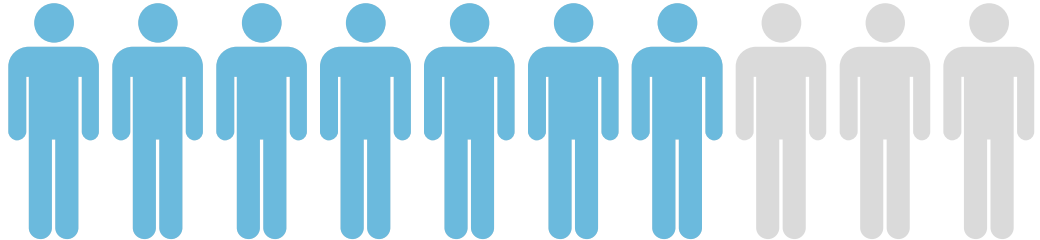
# grand challenges

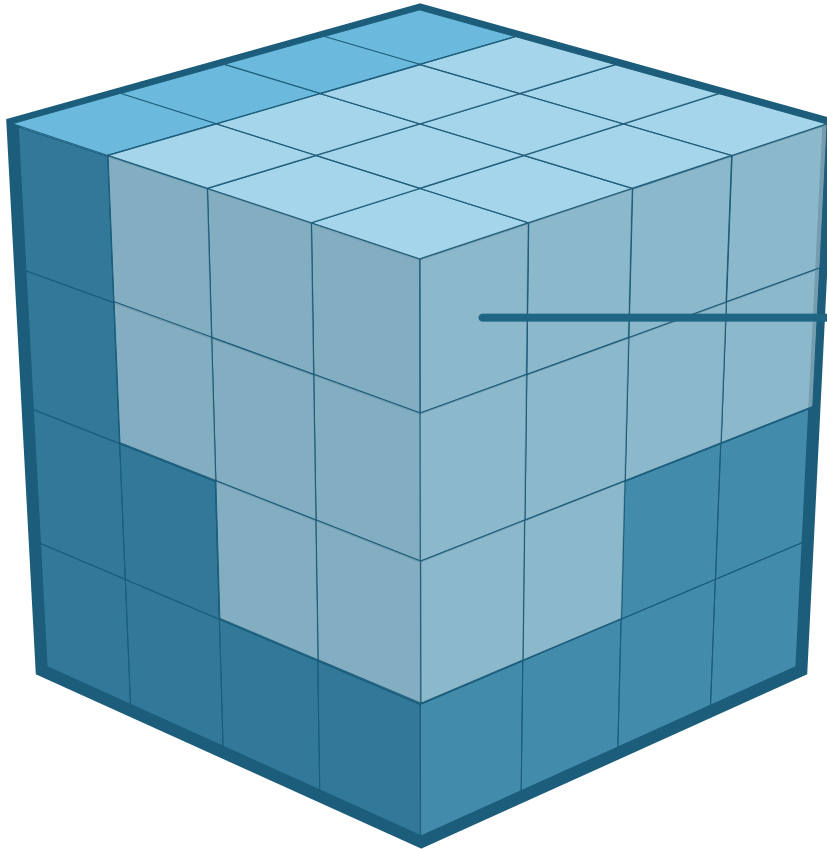
relevant to regional and national priority areas.

Due to the pervasiveness of Big Data in virtually all national priority areas, the BD Spokes have the opportunity to bring rapid change in application areas, by facilitating the creation of interdisciplinary and multidisciplinary data-intensive teams.

Steps in the data lifecycle include: ingestion, validation, curation, quality assessment, anonymization, publication, active data management, and analysis (including information extraction, visualization, and annotation).

Automated (or, semi-automated) techniques are needed in order to keep up with the rapid data rates, large volumes, and immense heterogeneity of Big Data. Automation may also aid the reproducibility of data processing and analysis workflows.

**automate** 



Enabling access to and increasing the use of valuable, available **data assets**, also including international data sets, where relevant

One of the desirable roles for a BD Spoke is as a catalyst for organizing and sharing datasets and related data services among a larger set of stakeholders, across disciplinary areas, within the geographic region, or across the national community.

# MISSION DRIVEN SPOKES

BD Spokes proposals must articulate a clear focus within a specific Big Data topic or application area, while highlighting their Big Data Innovation theme.

All BD Spokes must have clearly defined mission statements with goals and corresponding metrics of success.

# AREAS OF EMPHASIS

Some NSF priority areas include



**NEUROSCIENCE**



**REPLICABILITY &  
REPRODUCIBILITY  
IN DATA SCIENCE**



**SMART &  
CONNECTED  
COMMUNITIES**



**DATA PRIVACY**



**DATA INTENSIVE  
RESEARCH IN THE  
SOCIAL,  
BEHAVIORAL, &  
ECONOMIC  
SCIENCES**



**EDUCATION**

# THE BD SPOKES SOLICITATION (16-510)

Details and Specifications



# AWARD INFORMATION & DUE DATES

Each Spoke project will be funded up to a maximum of \$1,000,000 for up to 3 years, subject to the availability of funds.

Each Planning Grant will be funded up to a maximum of \$100,000 for up to 1 year, subject to the availability of funds.

Total anticipated funding amount of \$10M

An estimated 9 Spokes and 10 Planning Grants is anticipated.

Letter of Intent Deadline:

Jan 12, 2016  
(5pm proposer's local time)

Full Proposal Deadline:

Feb 25, 2016  
(5pm proposer's local time)

# ELIGIBILITY INFORMATION

Proposals may be submitted by

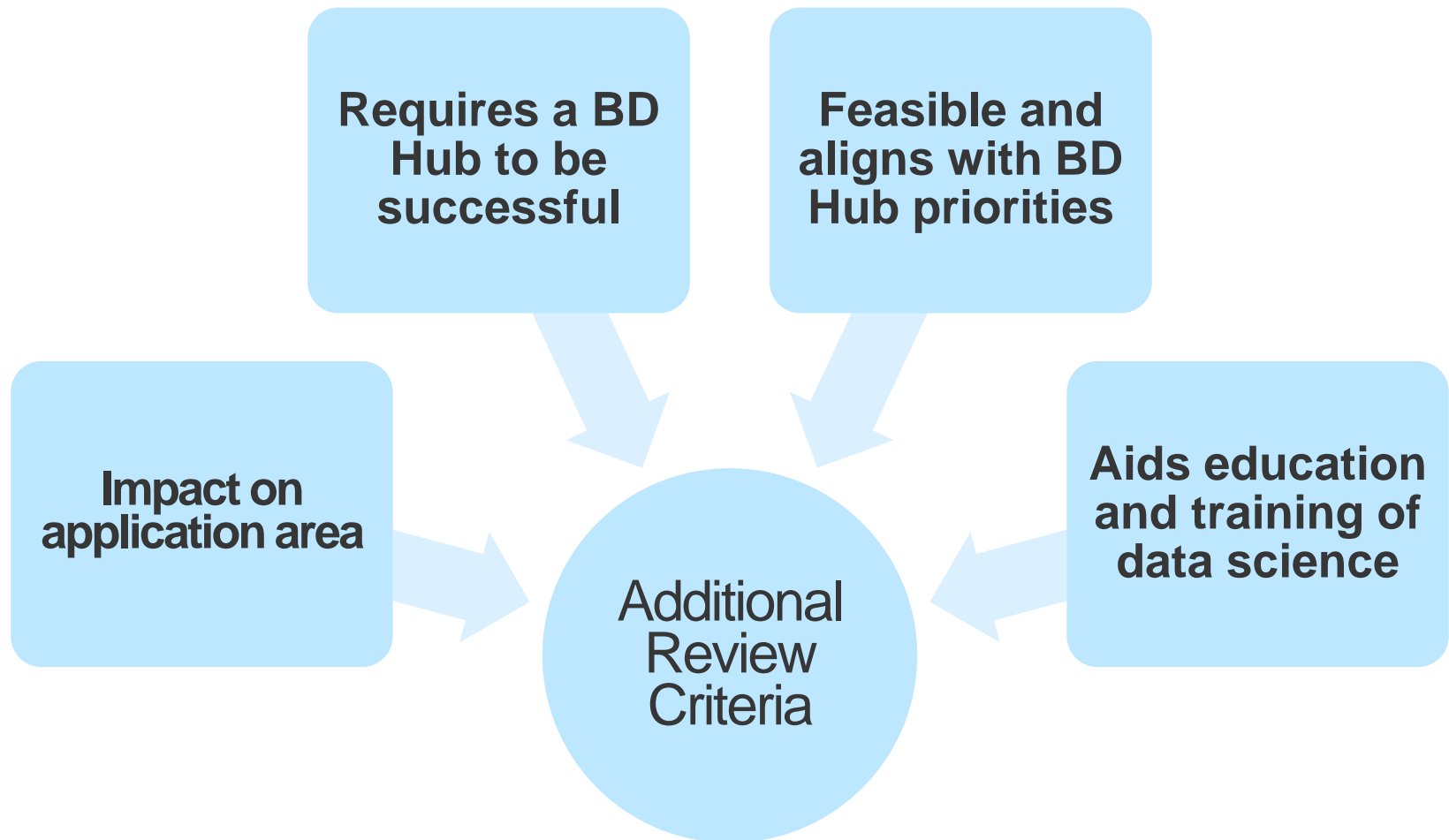
- ✓ Universities and Colleges
- ✓ Non-profit, non-academic organizations
- ✓ State and Local Governments

NSF welcomes collaborative proposals that include for-profit organizations and FFRDCs. However, such organizations may only participate as subawardees.

An individual may only serve as the PI or co-PI in at most one submission.

# SOLICITATION SPECIFIC REVIEW CRITERIA

Additional to NSF standard Intellectual Merit and Broader Impacts criteria



# FOR FURTHER QUESTIONS CONTACT

Fen Zhao, [fzhao@nsf.gov](mailto:fzhao@nsf.gov) 703 292 7344



NSF Headquarters, Arlington VA