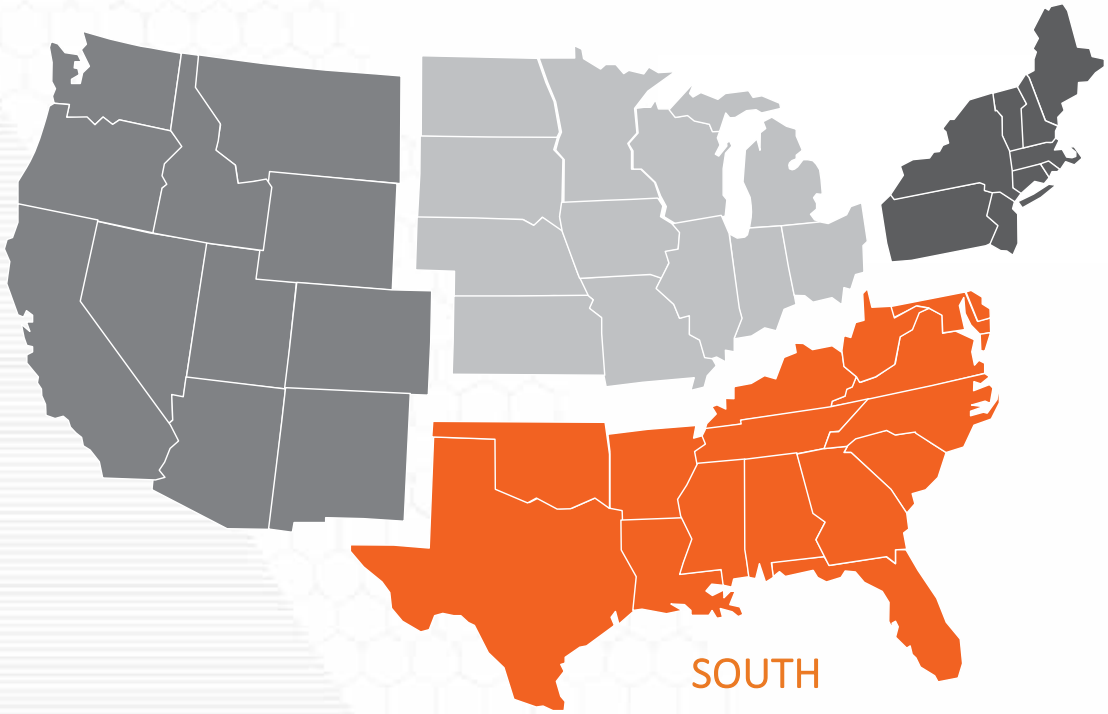
South Big Data Hub

THE SOUTH BIG DATA INNOVATION HUB

DR. RENATA RAWLINGS-GOSS
EXECUTIVE DIRECTOR
SOUTH BIG DATA INNOVATION HUB

South Big Data Hub



BIG DATA HUBS

Data Science Education and Workforce	Fostering Innovation in Data Science
Multi-sector Partnerships and Collaborative Communities	
Data Sharing & Infrastructure	Communication and Outreach

Goal: Increase the capacity for data science workforce, innovation and partnerships across sectors to advance science, address societal challenges, and spur economic development in the region.

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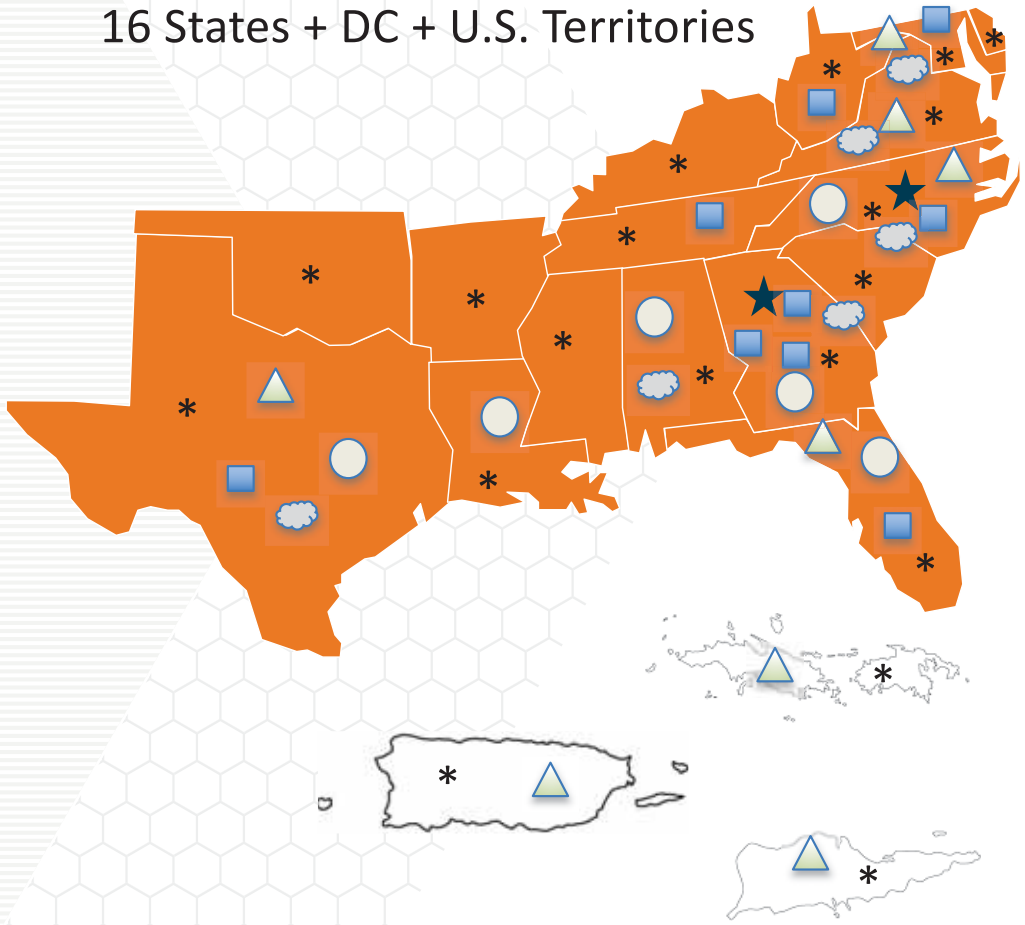
Impact Projects and Programs:

- Hub Coordinating Institutions ★
- Visionary (Spoke) Projects ■
- Expanding Data Science Education in the South (DataUP) △
- Industry-Government Fellowships (PEPI-G) ○
- Cloud Award Partnership Projects PI ☁

Outreach and Community: *

- Priority Areas
- Workshops
- Working groups
- Monthly Newsletter
- Congressional Briefings
- Outreach to minority-serving institutions and community colleges

> 1000 Affiliated members
300+ Organizations
16 States + DC + U.S. Territories



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South BD Hub

IMPACTS AND OPPORTUNITIES

The South Big Data Hub Impacts and Current Opportunities.

Visionary (Spoke) Projects

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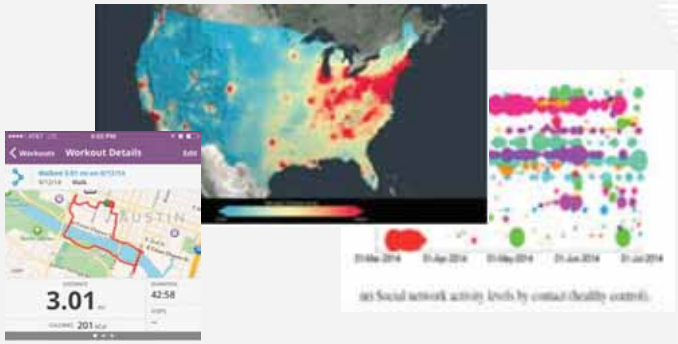
Round 1: *$3.1 million Awarded to South Hub Cross-Sector Applied Research Teams*



Large Scale Medical Informatics for Patient Care Coordination and Engagement

PI: Gari Clifford, Emory University $1 million

Rare Disease Observatory

PI: Rada Chirkova and Bruce Cairns, NCSU and UNC $100,000

Smart Grids Big Data

PI: Mladen Kezunovic, Texas A&M University, Santiago Grijalva, Georgia Tech, Zoran Obradovic , Temple University

$1 million

Using Big Data for Environmental Sustainability: Big Data + AI Technology

PI: Ashok K. Goel, Georgia Tech & Jennifer Hammock, Smithsonian $1 million

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Visionary (Spoke) Projects

South Big Data Hub

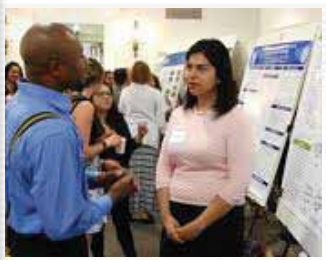
Round 2: *$2.35 million Awarded to South Hub Cross-Sector Applied Research Teams*

Enhanced 3-D Mapping for Habitat, Biodiversity, and Flood Hazard Assessments of Coastal and Wetland Areas of the Southern US

PI: Frank Muller-Karger, University of South Florida, James Gibeaut, Texas A&M – Corpus Cristi $1 million

Integrating Biological Big Data Research into Student Training and Education

PI: Hong Qin, University of Tennessee Chattanooga Donald Adjeroh, West Virginia University Research Corporation; Mentewab Ayalew, Spelman College; Fan Wu, Tuskegee University $1 million



Smart Privacy for Smart Cities: A Research Collaborative to Protect Privacy and Use Data Responsibly

PI: Jules Polonetsky, Future of Privacy Forum $350,000

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Priority Areas

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Areas of Interest

Education & Workforce Development
Renata Rawlings-Goss ED, SBDH

Data Sharing & Cyber-Infrastructure
Jay Aikat
COO, RENCI

Team Science
Steve Fiore
Director of the Cognitive Sciences Lab

Health Analytics & Disparities
Patrick Sullivan
Director of the HIV COMPASS Center

Smart Cities & Communities
Madhav Marathe
Division Director of the Network Systems Science and Advanced Computing Division at UVA

Social Cyber-security

Advanced Materials & Manufacturing
Surya Kalidindi
Director of the Materials Design, Development, and Deployment Center (MD3)

Environment & Hazard Response

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Data Science Education Network

There is an important opportunity to build a **cross-disciplinary community of practice**

Opportunities for educational training and workforce development:

1. Expanding the capacity for institutions to break into data science
2. A clearinghouse of data science educational repositories across different disciplines

US DATA EDUCATION NETWORK

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The State of Data Science Education in the U.S. (as of May 2019)

486 US Data Science Degree Programs

259 Schools

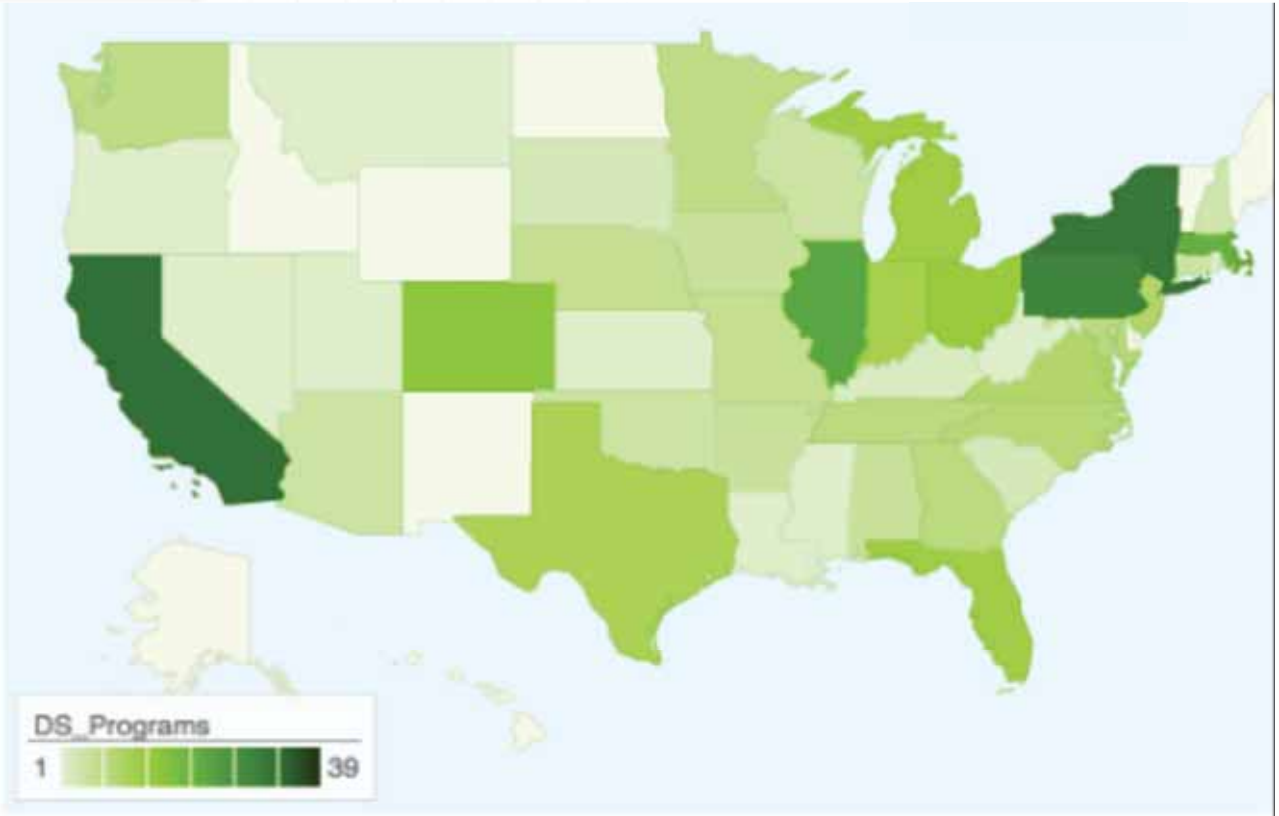
301 Masters

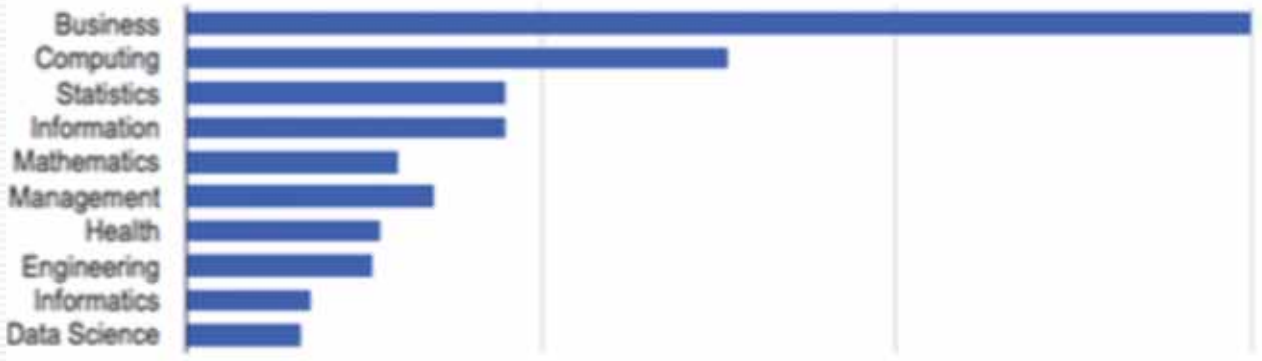
102 Certificates

46 Bachelors

20 Doctoral

7 Associates





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DATA SCIENCE EDUCATION & WORKFORCE DEVELOPMENT

Goal: Collect and provide practical resources and models of engagement for broadening and deepening the available pool of data literate talent. Focus areas:

- **Institutional Outreach** – Discover data science programs (Data Science Education Network - DSEN); Collect and share use cases; Foster data science across all schools(Keeping Data Science Broad – KDSB and DataUp)
- **Faculty and Student Development** - Faculty Industry-Government Fellowships; Faculty Data Science Bootcamp; Faculty Curriculum Cohorts; Student Start-up Fellowships
- **Resource Development** – Amplify/expand/connect existing efforts including teaching platforms; Gather and disseminate best practices in data science education in industry, academia and government
- **Workforce Landscape** - Expanding current workforce efforts within industry and government; Connect complementary programs; Discuss standards; Work with industry and government workforce boards
- **International participation**: Big Data Value Association in Europe –EDISON Project, US-Japan Collaboration, Singapore

Institutional Outreach: Envisioning Data Science

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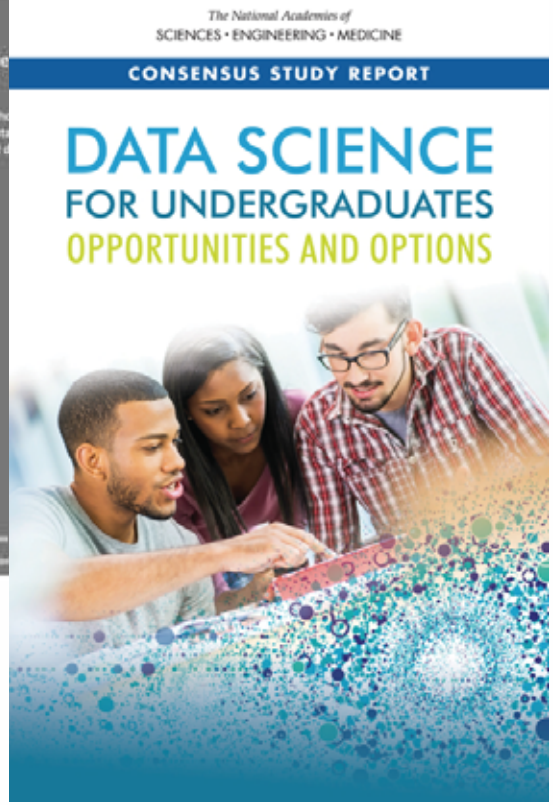
Keeping Data Science Broad: A *Series of webinars, a workshop and community feedback to increase the participation of minority-serving institutions, HBCU's, HSIs, community colleges , and four-year liberal arts colleges in the larger discussion of data science as a discipline. Contributed to a 2-year Consensus Report from the National Academy of Science.*



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Resource Development: Democratizing Data Tools

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Going the last mile; Supporting data tool sharing

Microsoft Azure

Stimulating New Activities and Projects in Data Science (SNAP-DS)

jupyterhub

FOR THE SOUTH

DATAUP

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Expanding Data Science Workforce: Industry and Government (PEPI-G)

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PEPI-G: *Faculty, research scientists, and students from universities across the South including (LSU, UNC, FSU, UA, Duke, GT, Texas A&M) were matched with industry partners including (GlaxoSmithKline, PhishMe, McKesson, Allscripts, Nanotechnology, Accelogic, Biogen, and UnitedHealthcare).*

PEPI Faculty Fellows

Dr. Gerard Dumancus
Louisiana State Univ
Company: GlaxoSmithKline

Dr. Ragib Hasan
University of Alabama
Company: PhishME

Dr. Hui Wang
Florida State
Company: Nanotechnology Patronas Group

Dr. Soomin Lee
Duke University
Company: McKesson Inc

Dr. Xia Hu
Texas A&M Univ.
Company: UnitedHealthcare

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Empowering Partnerships with Industry and Government
The PEPI-G Program (2019)

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2019 Program Dates:

April 1 – Application announced
May 1 – Application Due

The Program to Empower Partnerships with Industry and Government (PEPI-G) supports faculty members, research scientists, postdocs, and graduate and undergraduate students (rising juniors and seniors as of 2019) from the 16 states that comprise the South Big Data Regional Innovation Hub (South BD Hub). **Fellowships will last 10 weeks starting June 17, 2019, but can be extended based on approval. Fellows will receive a stipend.**

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Building Partnerships
Working Groups

The South Hub supports two monthly Cross-Hub working groups

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Cross-Hub Data Sharing & Cyber-Infrastructure Working Group

Social Cybersecurity Working Group

Infrastructure Demos >35 including:

1. Open Science Framework
2. National Data Service
3. iRODS: An overview
4. Big Data and Cybersecurity Risk Management
5. Big Data Trends for Health Care Analytics
6. NIEHS Office of Data Science efforts
7. Center for Transportation Research –UT -Austin
8. Google Cloud Public Datasets Program
9. Azure for Research
10. Dataverse and more…

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The South Big Data Hub

TAKING THE NEXT STEPS

Collaboration Opportunities

Seed Grants

Building Communities and Tools in Priority Areas

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In 2020 – 2024

The South Hub will provide $1 million dollars in seed grants, $250,000 per year, to foster the Data Science Community

COMING SOON!

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Overview of Opportunities (PART 1)

Education and Workforce Development

- Work with U.S. initiatives, companies and universities around fostering Data Science Workforce and Education (Data Science Education Network, EDISON, etc)
- Program to Empower Partnerships with Industry and Government (Expansion into EU companies) www.southbigdatahub.org/pepi-g

Cyber-Infrastructure

- All Hub Cyber-Infrastructure Working Group (Present Demos of EU Infrastructure)

Smart and Connected Cities

- Simulated Cities and Digital Twins for Decision-Making support. Currently working in 3 U.S. cities could be expanded to E.U.

Overview of Opportunities (PART 2)

Health Disparities and Analytics

- Work with HIV-AIDS, epidemic mapping, treatment data, and genomics www.aidsvu.org (EU-US engagement)
- Working with E.U. initiatives, companies and universities around fostering Data Science Workforce and Education

Material and Advanced Manufacturing

- Materials Accelerator Network (MAN), an e-community of skilled individuals at the intersection of materials/manufacturing and data sciences from academia, industry, and national labs. http://acceleratornetwork.org/
- Collaborate on demonstrator testbeds and distributed data centers hosting community data, models and industry-case challenges.

Social Cybersecurity

- South Hub Social Cybersecurity Working Group
- Workshop at SBP-BRIMS Conference July 09 -12, 2019 in Washington, DC at George-Washington University http://sbp-brims.org/2019/

Join the Community

South Big Data Hub

Hear from Us!

www.SouthBigDataHub.org

Monthly Opportunities Newsletter

For upcoming events, programs, job postings, and opportunities in data science, analytics, policy, and engineering across the South.
Over 1000 subscribers
Join the mailing list today!

If you have announcements or events that you would like to submit for next month's letter email:
comms@southbdhub.org

HubBub

Hubbub Blog

For News and Highlights from past Hub events and the Hub Community

Groups

South Hub Google Group

For News and Highlights from past Hub events and the Hub Community

YouTube Channel: South Big Data Hub Videos

See video demos of infrastructure, data science schools, South Hub impact meetings, roundtables, and webinars

South BD Hub Twitter

A social media mix of News Highlights, and Opportunity from the South Hub communication team
@SouthBigDataHub

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SOUTHBDHUB.org

To Get Involved Email

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www.southbigdatahub.org
@SouthBDHub

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