**NBD USE Cases V1.0**

**Government Operation**

1. Census 2010 and 2000 – Title 13 Big Data; Vivek Navale & Quyen Nguyen, NARA
2. National Archives and Records Administration Accession NARA, Search, Retrieve, Preservation; Vivek Navale & Quyen Nguyen, NARA
3. Statistical Survey Response Improvement (Adaptive Design); Cavan Capps, U.S. Census Bureau
4. Non-Traditional Data in Statistical Survey Response Improvement (Adaptive Design); Cavan Capps, U.S. Census Bureau

**Commercial**

1. Cloud Eco-System, for Financial Industries (Banking, Securities & Investments, Insurance) transacting business within the United States; Pw Carey, Compliance Partners, LLC
2. Mendeley – An International Network of Research; William Gunn , Mendeley
3. Netflix Movie Service; Geoffrey Fox, Indiana University
4. Web Search; Geoffrey Fox, Indiana University
5. IaaS (Infrastructure as a Service) Big Data Business Continuity & Disaster Recovery (BC/DR) Within A Cloud Eco-System; Pw Carey, Compliance Partners, LLC
6. Cargo Shipping; William Miller, MaCT USA
7. Materials Data for Manufacturing; John Rumble, R&R Data Services
8. Simulation driven Materials Genomics; David Skinner, LBNL

**Defense**

1. Large Scale Geospatial Analysis and Visualization; David Boyd, Data Tactics
2. Object identification and tracking from Wide Area Large Format Imagery (WALF) Imagery or Full Motion Video (FMV) – Persistent Surveillance; David Boyd, Data Tactics
3. Intelligence Data Processing and Analysis; David Boyd, Data Tactics

**Healthcare and Life Sciences**

1. Electronic Medical Record (EMR) Data; Shaun Grannis, Indiana University
2. Pathology Imaging/digital pathology; Fusheng Wang, Emory University
3. Computational Bioimaging; David Skinner, Joaquin Correa, Daniela Ushizima, Joerg Meyer, LBNL
4. Genomic Measurements; Justin Zook, NIST
5. Comparative analysis for metagenomes and genomes; Ernest Szeto, LBNL (Joint Genome Institute)
6. Individualized Diabetes Management; Ying Ding , Indiana University
7. Statistical Relational Artificial Intelligence for Health Care; Sriraam Natarajan, Indiana University
8. World Population Scale Epidemiological Study; Madhav Marathe, Stephen Eubank or Chris Barrett, Virginia Tech
9. Social Contagion Modeling for Planning, Public Health and Disaster Management; Madhav Marathe or Chris Kuhlman, Virginia Tech
10. Biodiversity and LifeWatch; Wouter Los, Yuri Demchenko, University of Amsterdam

**Deep Learning and Social Media**

1. Large-scale Deep Learning; Adam Coates , Stanford University
2. Organizing large-scale, unstructured collections of consumer photos; David Crandall, Indiana University
3. Truthy: Information diffusion research from Twitter Data; Filippo Menczer, Alessandro Flammini, Emilio Ferrara, Indiana University
4. Crowd Sourcing in the Humanities as Source for Big and Dynamic Data; Sebastian Drude, Max-Planck-Institute for Psycholinguistics, Nijmegen The Netherlands
5. CINET: Cyberinfrastructure for Network (Graph) Science and Analytics; Madhav Marathe or Keith Bisset, Virginia Tech
6. NIST Information Access Division analytic technology performance measurement, evaluations, and standards; John Garofolo, NIST

**The Ecosystem for Research**

1. DataNet Federation Consortium DFC; Reagan Moore, University of North Carolina at Chapel Hill
2. The ‘Discinnet process’, metadata <-> big data global experiment; P. Journeau, Discinnet Labs
3. Semantic Graph-search on Scientific Chemical and Text-based Data; Talapady Bhat, NIST
4. Light source beamlines; Eli Dart, LBNL

**Astronomy and Physics**

1. Catalina Real-Time Transient Survey (CRTS): a digital, panoramic, synoptic sky survey; S. G. Djorgovski, Caltech
2. DOE Extreme Data from Cosmological Sky Survey and Simulations; Salman Habib, Argonne National Laboratory; Andrew Connolly, University of Washington
3. Large Survey Data for Cosmology; Peter Nugent LBNL
4. Particle Physics: Analysis of LHC Large Hadron Collider Data: Discovery of Higgs particle; Michael Ernst BNL, Lothar Bauerdick FNAL, Geoffrey Fox, Indiana University; Eli Dart, LBNL
5. Belle II High Energy Physics Experiment; David Asner & Malachi Schram, PNNL

**Earth, Environmental and Polar Science**

1. EISCAT 3D incoherent scatter radar system; Yin Chen, Cardiff University; Ingemar Häggström, Ingrid Mann, Craig Heinselman, EISCAT Science Association
2. ENVRI, Common Operations of Environmental Research Infrastructure; Yin Chen, Cardiff University
3. Radar Data Analysis for CReSIS Remote Sensing of Ice Sheets; Geoffrey Fox, Indiana University
4. UAVSAR Data Processing, Data Product Delivery, and Data Services; Andrea Donnellan and Jay Parker, NASA JPL
5. NASA LARC/GSFC iRODS Federation Testbed; Brandi Quam, NASA Langley Research Center
6. MERRA Analytic Services MERRA/AS; John L. Schnase & Daniel Q. Duffy , NASA Goddard Space Flight Center
7. Atmospheric Turbulence - Event Discovery and Predictive Analytics; Michael Seablom, NASA HQ
8. Climate Studies using the Community Earth System Model at DOE’s NERSC center; Warren Washington, NCAR
9. DOE-BER Subsurface Biogeochemistry Scientific Focus Area; Deb Agarwal, LBNL
10. DOE-BER AmeriFlux and FLUXNET Networks; Deb Agarwal, LBNL

**Energy**

1. Consumption forecasting in Smart Grids; Yogesh Simmhan, University of Southern California