

NDS Updates & Progress

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from the Internet to the "Datanet"



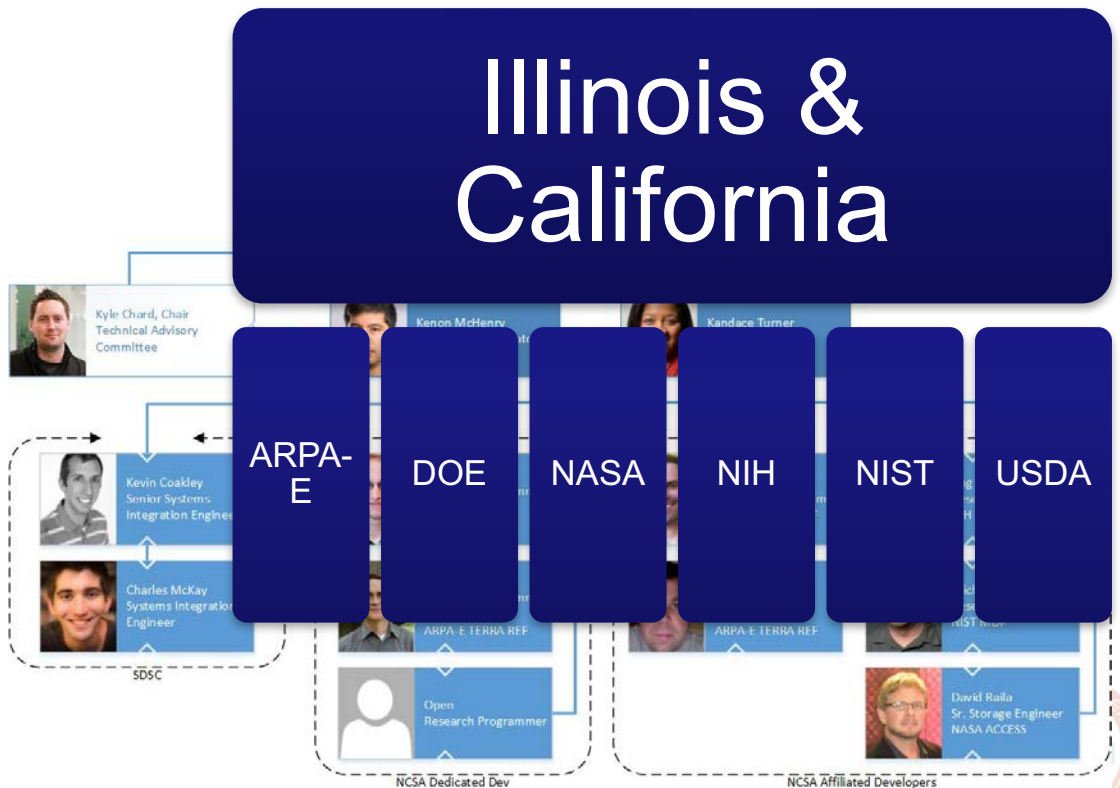
NDS: A Builders' Consortium

- **Communities**
 - Astronomy, Biology, Engineering, Geoscience, Information Science, Material Science, Medicine, Social Science
 - BDHubs, ESIP, RDA
- **Universities, Libraries, Archives, Government & Publishers**
 - CU Boulder, **Harvard**, Indiana, Johns Hopkins, **Notre Dame**, Purdue, **UC San Diego**, UIC, **UIUC**, **U Michigan**, ICPSR, **Univ. of Washington** ...
 - Nature, Science, APS, IEEE, PLOS, **Elsevier**, ...
 - **NIST**
- **US Computing and Data Centers/Cyberinfrastructure**
 - ANL, **NCSA**, PSC, **SDSC**, **TACC**
 - Brown Dog, CyVerse, Data Excacell, DataONE, DFC, GABBs, IN-CORE, iRODS, **Globus**, SciServer, **SEAD**, Terra Populus, **TERRA REF**, **Whole Tale**, LSST, LIGO, ...



NDS Snapshot

- 3 years old
- \$7M+ under review
- Diversified funding



What NDS Offers to Researchers

The screenshot shows the Labs Workbench Catalog interface. At the top, there's a search bar and buttons for 'Import' and 'Create'. Below, a grid of application cards is displayed, each with a logo, name, description, and an 'Add' button. The cards include: Cloud9 C/C++ (C/C++ development environment based on Cloud9), Cloud9 GO (Go development environment based on Cloud9), Cloud9 Java (Java development environment based on Cloud9), Cloud9 Node.js (Node.js development environment based on Cloud9), Cloud9 PHP (PHP development environment based on Cloud9), Clowder (A scalable data repository can share, organize), Dataverse (A web application to share, preserve, cite, explore and analyze research data), Docker (Docker command-line environment for NDS Labs), and DSpace (Turkley software used in open access digital).

NDS Labs Workbench

- Incubate your data projects
 - Experiment with tools, perfect stack.
- Run data science training environments.
- Promote your data tools.
- Provide early data access.

NDS Share DataDNS

- Share your data without moving it.
- Contribute to reproducible science.
- Invite new analysis.
- Services for finding, indexing data.

The screenshot shows the NDS DataDNS interface. It features a search bar and a table of registered data sets. The table has columns for 'Dataset', 'Publications', 'Location', 'Launch Notebook', and 'Show Metrics'. Three data sets are visible:

Dataset	Publications	Location	Launch Notebook	Show Metrics
Renaissance Simulations O'Shea, Brian (oshea@msu.edu); Wise, John; Xu, Hao; Norman, Michael Cite Dataset	<ul style="list-style-type: none">• O'Shea, B. W., Wise, J. H., Xu, H., & Norman, M. L. (2015). PROBING THE ULTRAVIOLET LUMINOSITY FUNCTION OF THE EARLIEST GALAXIES WITH THE RENAISSANCE SIMULATIONS. <i>The Astrophysical Journal</i>, 807(1), L12. doi:10.1088/2041-8205/807/1/L12• Ahn, K., Xu, H., Norman, M. L., Alvarez, M. A., & Wise, J. H. (2015). SPATIALLY EXTENDED 21 cm SIGNAL FROM STRONGLY CLUSTERED UV AND X-RAY SOURCES IN THE EARLY UNIVERSE. <i>The Astrophysical Journal</i>, 802(1), 8. doi:10.1088/0004-637x/802/1/8	SDSC SAN DIEGO SUPERCOMPUTER CENTER		
Dark Sky Simulations Warren, Michael; Friedland, Alexander; Holz, Daniel; Skillman, Samuel; Sutter, Paul; Turk, Matthew (mjturk@illinois.edu); Wechsler, Risa Cite Dataset	<ul style="list-style-type: none">• S. W. Skillman, M. S. Warren, M. J. Turk, R. H. Wechsler, D. E. Holz, P. M. Sutter. Dark Sky Simulations: Early Data Release.• Warren, M. S., Friedland, A., Holz, D. E., Skillman, S. W., Sutter, P. M., Turk, M. J., & Wechsler, R. H. (2014). Dark Sky Simulations Collaboration. ZENODO. https://doi.org/10.5281/zenodo.10777	yt		
Magneto-hydrodynamic Turbulence Simulations Mösta, Phillip (pmosta@berkeley.edu) Cite Dataset	<ul style="list-style-type: none">• Mösta, P., Ott, C. D., Radice, D., Roberts, L. F., Schnetter, E., & Haas, R. (2015). A large-scale dynamo and magnetoturbulence in rapidly rotating core-collapse supernovae. <i>Nature</i>, 528(7582), 376–379. doi:10.1038/nature15755	NCSA		

NDS Momentum

- **NDS Labs Workbench helping researchers**
 - TERRA-Ref workshops, early access to data
- **Funding**
 - \$7M under review
 - Won bioCADDIE IR challenge award
- **Partnerships**
 - ESIP, Midwest Big Data Hub, RDA-US
- **Pilot communities:** Social sciences, metro data science, digital agriculture, information management, materials science, astronomy



NDS6 Directives

- Librarians as key partners and stakeholders
- NDS as iSchool and training platform
- Stronger ties to other groups, e.g. RDA
- Closer integration with Big Data Hubs
- NDS as less of archive and more solutions for data retention, preservation, and disposal
- Analysis toolbox prototype for analyzing data in repos



1. Ask a few questions
2. Tell you about me (briefly)
3. Research
• iSchools' data related curricula

4. Conclusion: Why I'm excited about NDS?

- Hard problems, continuum of expertise
- Library science part of the larger information and data ecosystem
 - Cross fertilization (curation, DS, etc.)
 - 2013+ trailblazers
 - Stone age – to Bronze age

NDS6 Outcomes

- NDS as a training platform
 - Odom, TERRA-Ref workshops
 - iSchool pilot at University of Washington
 - Think Chicago Hackathon
- Outreach to library community
 - RDAP
- NDS engaged with RDA
- Launch toolbox from data repo proof of concept

