

# Public Access to Research Results

America COMPETES Reauthorization Act of 2010 addresses public access to research results particularly in the forms of scholarly publications and digital data

→ Charge from DOE Office of Science: identify and assess current practices, policies and procedures to research results with report by 1-jul-2011.

- Snapshot of what we currently do
- Recommendations not requested

"Include which dissemination models, if any, successfully maximize the potential benefit of research results in a way that is sustainable within the research community. Also include any observations regarding opportunities where public access policies or practices could enhance discovery potential of Office of Science research results."



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Any “recommendations” must

- not be onerous for PIs
- be general enough to be useful for the whole community or allow for exceptions
- also include recommendations for funding/supporting the recommendations

Writing for DOE and members of Congress

→ need to explain how our field works

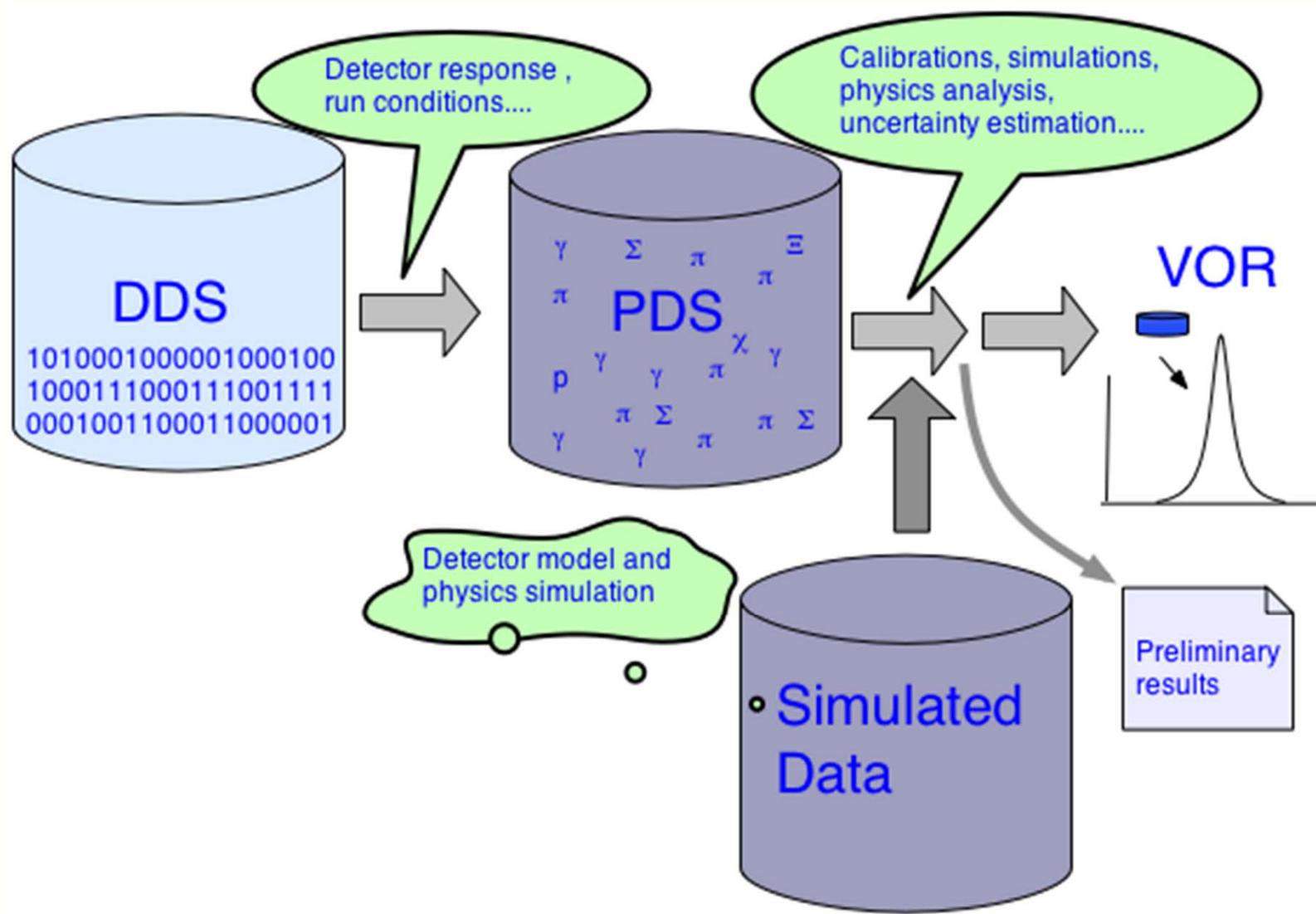


## Public Access to Research Results

- Public = general public AND scientific community
- DDS = digitized detector signals ie *raw data*
- PDS = Processed Detector Signals
- Preliminary Results = vetted within a collaboration but not final
- Physics Results = final results of research that usually go into the VOR
- VOR = version of record, published research, final results
- Open Access = material is free for all to read and use
- Green Access = access of the author's final version in an institutional repository or in a subject repository such as the arXiv
- Golden Access = someone pays publishing costs to make the article freely available upon publication



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	Digitized Detector Signals	Processed Signals
JLab	Up to 100s of Tbytes	Up to 100s of Tbytes
RHIC	few Pbytes	few Pbytes
LHC	Up to a Pbyte	100s of Tbytes
Neutrinos	100s of Tbytes	100s of Tbytes
Neutron Physics	up to 10s of Tbytes	up to 100s of Gbytes
LE User Facilities	up to few Tbytes	up to few Gbytes
Small Groups and Single Investigators	up to few Tbytes	up to few Gbytes
Lattice QCD	Total data set = 1 PByte	



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Identified 10 research areas:

- Jlab: Curtis Meyer (CNU)
  - LHC: Julia Velkovska (Vanderbilt)
  - Neutrinos: Josh Klein (U Penn)
  - Neutron Physics: Fred Wietfeldt (Tulane)
  - Low Energy User Facilities: Michael Thoennessen (MSU/NSCL)
  - Small groups and single investigators: Mark Riley (FSU) and Carl Brune (OU)
  - RHIC: Helen Caines (Yale)
  - Theory: Paul Mackenzie (FNAL) and Scott Pratt (MSU)
- Polled community to get information on current practices, policies, and procedures
- Got input from APS, AIP, arXiv, ...
- note: many of polices are freely available online



## Public Access to Research Results

Report = 4 Findings + 5 Comments + background material

### **Finding 1:**

The field of nuclear physics publishes in scholarly journals and uses the publication policies of those journals as well as archives and databases to make its research results available to the public. The results available through these means are the peer-reviewed versions of record (VOR). **The VOR represent the ultimate product of the government investment in research and are uniformly available to the public.** In most cases this access is free, and in others there is a cost associated with access through the journals themselves. Whenever possible, authors make the VOR available at no cost to anyone who requests them. Measurements in the VOR are often used by others to derive additional physics results.



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## Comment 1:

To assure access policies that are sustainable, close collaboration with publishers and other stakeholders is needed. Publishers deliver valuable services to researchers: registering, managing peer review, editing, disseminating and assuring the discoverability and authenticity of research as well as its preservation. Costs incurred in providing such services have to be paid under sustainable business models in order to ensure the continuity of such essential services to the scientific community

Publishers are a valuable aspect of access to research results and it isn't free



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## Finding 2:

Pre-final data in the form of [preliminary data](#), theses, conference presentations, and reports are generally publicly available on pre-print servers (e.g. arXiv and CERN Document Server), conference websites, and published proceedings, and, in some cases, in collaboration talk databases. Such results are often disseminated in workshops where through collaborative discussion the results are further understood and developed. In some cases the digital data presented in figures are also made available upon request. Requests from the public for access to pre-final data are not common.



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### Comment 2:

Continued and enhanced use of the online arXiv and nuclear physics databases is an effective way to provide access to the results of publicly-funded research. As such, additional resources may be necessary to support these publicly-accessible venues. The availability of these open access sources to research results should be more widely advertised to the public.

Exchanging preliminary data, final manuscripts, and the like is essential and should be supported and enhanced



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## Finding 3:

Requests for digitized detector signals, processed detector signals, and associated computer codes by others not involved in producing them are in general rare, and because of the complexities in using these data, usually not fulfilled. The knowledge and resources required to utilize these data generally make them useless to persons unfamiliar with the experimental apparatus and the conditions under which the data were collected. There have been exceptions where dissemination of such data was useful, and under these situations these data were provided after publication. There are also situations where scientists may join the collaborations processing the data and then participate in the analysis effort.



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## Comment 3:

With few exceptions, digitized detector signals, processed detector signals, and associated computer codes are unlikely to be of use beyond that of the immediate collaborations that produced them. Because the data are in such complex and varied forms it would be counterproductive to impose a top-down policy regarding the sharing of them. Decisions on the sharing of research at these levels of development should be left to the individual investigators or collaborations. To make this category of data widely available would likely require significant additional resources with little added benefit.

Access to raw data is obviously a complicated issue

- Rarity of requests may not guide future policy
- Computing power requirements and size of data set has not stopped people from requesting LIGO data sets



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## **Finding 4:**

Small focused workshops (such as those at the Institute for Nuclear Theory), summer schools, collaboration meetings, and conferences play a crucial role in disseminating and extending research results. A deeper understanding of both experimental and theoretical nuclear science is often enhanced by these one-on-one interactions. The dissemination and sharing of pre-final research at these workshops often inspire advances in the field.

## **Comment 4:**

Meetings and workshops help to maximize the potential benefits of research results.



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Comment 5:

Presenting research results to the public is an important and recognized responsibility of scientists and the nuclear physics community responds to it through various outreach activities.

