

Federation of Earth Science Information Partners Partnership Application

Please complete all sections to the fullest extent possible and forward completed application to: Carol Meyer, carol.meyer@earthsciencefoundation.org. If you have any questions, please contact her at 877.870.3747.

I. CONTACT INFORMATION

A. Primary Contact/Principal Investigator

Name: Reagan W. Moore
Address: 216 Manning Hall, University of North Carolina at Chapel Hill, Chapel Hill, NC, 27599-3360
Phone: 919 962 9548
Fax: 919 962 8071
Email: rwmoores@email.unc.edu

B. Designated Assembly Representative (could be same as above)

Name: Reagan W. Moore
Address: 216 Manning Hall, University of North Carolina at Chapel Hill, Chapel Hill, NC, 27599-3360
Phone: 919 962 9548
Fax: 919 962 8071
Email: rwmoores@email.unc.edu

C. Other Contacts

Name: Arcot Rajasekar
Address: 216 Manning Hall, University of North Carolina at Chapel Hill, Chapel Hill, NC, 27599-3360
Phone: 919 445 9647
Fax: 919 962 8071
Email: rajasekar@unc.edu

Name:
Address:
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II. ABOUT YOUR ORGANIZATION

A. ORGANIZATION/DIVISION/PROJECT NAME:

UNC-CH / Data Intensive Cyber Environments Center / DataNet Federation Consortium

B. OVERVIEW OF YOUR PRIMARY ACTIVITIES in regards to the Earth Sciences Community (200 words or less)

The DICE Center at UNC-CH develops open source policy-based data management systems called the integrated Rule-Oriented Data System. The iRODS data grid is used to support the MODIS data set at the NASA Center for Climate Simulation, and is being considered as software middleware to improve access to holdings at the NOAA National Climatic Data Center. The DataNet Federation Consortium is an NSF funded project to develop national data management infrastructure that supports research collaborations. The DFC is building a national data federation hub based on the iRODS data grid. Applications include a national water model, and collaborations with NCDC for archiving Ocean Observatory Initiative data.

C. Please list and briefly describe the primary product(s) or service(s) that your organization provides (will provide) to the Earth Sciences community.

The DICE Center will provide the open source iRODS data grid software to the Earth Science Community. The iRODS software is used to organized distributed data into sharable collections, enforce management policies, automate administrative functions, and validate assessment criteria. Applications include data sharing, data publication, data processing pipelines, and data preservation.

D. Please give a main website address for the proposed Partnership:

Web Address: <http://irods.diceresearch.org>

III. HOW YOUR ORGANIZATION WILL BENEFIT FROM/CONTRIBUTE TO THE EARTH SCIENCE INFORMATION PARTNERS (ESIP) FEDERATION

A. Describe current or anticipated users of your products and services and how you think the Federation can help you better serve this population. (200 words or less)

The Datanet Federation Consortium supports collaborations within the Earth Science Community, including the Institute for the Environment at UNC-CH, the NOAA National Climatic Data Center, the NASA Center for Climate simulations, the Earth Systems Grid, and the NSF XSEDE grid. We seek opportunities to build collaboration environments that cross federal agency repositories, while enabling research on societally important problems (the coming drought).

B. Describe any Earth science technologies that you have developed and are willing to bring to the Federation's efforts to provide best-practices. (200 words or less)

We have current projects to integrate NetCDF data manipulation libraries into the iRODS data grid. We currently support the HDF5 libraries. More importantly, we are developing the ability to register workflows into the data management system as active objects. This will enable the tracking of the full provenance of research results, including the input files, input parameters, models, workflows, and result sets. In particular, an active object can be re-executed, enabling the re-analysis of research findings.

C. Describe how your proposed membership would contribute to the efforts and the mission of one or more standing committees, working groups and/or clusters. See Page 3 for descriptions of the different activities of the various standing committees, working groups, and clusters. (200 words or less)

We will contribute to the Information Technology and Interoperability Standing Committee. Our primary goal is to improve interoperability between existing data management environments. This includes support for soft links (registration of external data sets into the research collaboration environment), support for applying community specific services (typically executed as an external web service), and support for enforcing community policies (federation across data management environments).

D. Describe your own use of Earth science information and data and how you would see this use enhanced by your partnership in the Federation. (200 words or less)

Our collaborating partners within the DataNet Federation Consortium support research initiatives in the Earth Sciences. They acquire data sets from NASA, NOAA, USGS, NSF to build national water models, explore impact of humans on the environment, explore climate impact on human infrastructure, etc. A primary goal is the ability to track the provenance of data sets used within research results, be able to replay the workflows with new input parameters, and compare results.

IV. YOUR CHOICE OF MEMBERSHIP TYPE. PLEASE PICK ONE.

ESIP-I (primarily a data center/archive)

ESIP-II (primarily a research center)

ESIP-III (primarily applications and education)

ESIP-IV (primarily a sponsoring member)

V. Any other comments about your proposed membership and its relation to the Federation that you wish to provide.

We also collaborate with international partners, including the French National Institute for Nuclear Physics and Particle Physics, the European Union EUdat project, the NSF EarthCube initiative, the Ocean Observatories Initiative, the Australian Research Collaboration Service, etc.

Thank you for your application for partnership in the ESIP Federation.

List of Federation Committees and Clusters

Administrative Committees

Executive Committee: Comprised of all standing and administrative committee chairs, ESIP Type Representatives, the President and Vice President of the Federation. Oversight body for most day-to-day activities of the Federation, acts on behalf of the Assembly between meetings.

Constitution and Bylaws: Provides counsel on matters related to the constitution and bylaws and other related issues (e.g. amendments to government documents)

Finance and Appropriations: Oversees financial resources of the Federation, including the annual budgeting process.

Partnership: Reviews and processes all applications for membership before making applications available for review by members of the Federation. Deals with other membership-related issues.

Standing Committees:

Commercial Development: Promotes a forum wherein commercial development of Earth science information can be fostered. (inactive)

Community Engagement: Provides a forum for the Federation to promote partner products and to engage new users for data products and services. (inactive)

Education: Provides a forum to make accessible to educators and learners at all levels in both formal and informal educational contexts the Earth science data, information, tools, and curricula available within the ESIP Federation.

Information Technology and Interoperability: Provides a forum for discussing information technology and interoperability issues of the Earth science community and serves as a central point for activities in this realm.

Products and Services: Provides a forum for defining best practices and defining requirements for earth science products and services. Currently is involved in developing an inventory of partner products and services.

Clusters (presently active, April 2009):

- Web Services
- Semantic Web
- Data Preservation and Stewardship
- Decisions
- Air Quality
- Federated Search
- Water