

# Biologists identify ways to enhance complex data integration across research domains

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The integration of data from two or more domains is required for addressing many fundamental scientific questions and understanding how to mitigate challenges impacting humanity and our planet, according to a new workshop report from the American Institute of Biological Sciences (AIBS). The publication identifies key barriers to complex data integration and offers recommendations for the research community, research funding organizations, and others.

The workshop, which was held in March 2015 in Arlington, Virginia, brought together more than two-dozen experts in genetics, genomics and metagenomics, biology, systematics, taxonomy, ecology, bio- and eco-informatics, and cyberinfrastructure development. The workshop report summarizes use cases that highlight barriers and solutions to complex data integration; impediments, technical problems, and crosscutting issues related to integrating data; and, recommendations and next steps required to achieve better data integration.

"There are incredibly important but terribly complex questions in the areas of human health and environmental sustainability for which society needs answers. We need to better understand how humans or agriculturally important species respond at the genetic level to environmental stresses, for example. To do this, researchers need to be able to find, access, and integrate data ranging from genetic to environmental," said Dr. Robert Gropp, Interim Co-Executive Director of AIBS and a workshop organizer.

Dr. Paula Mabee of the University of South Dakota and a workshop co-chair agrees: "This meeting was unique in that we were able to bring together such a diverse group. It is informative that the challenges surfaced from different fields are often

quite similar."

"One of our common challenges is learning to talk to each other. We often use the same words, but they might have different meanings depending upon whether one is a biologist or a computer scientist. Developing the capacity or the cadre of professionals who can translate is important," said Dr. Corinna Gries, a workshop co-chair and Lead Information Manager at the Center for Limnology at the University of Wisconsin.

The report includes recommendations related to governance, education and training, data discovery and access, evaluation of data for fitness of use, and the process for [data integration](#).

"AIBS looks forward to working with our members and partners to explore how we can advance the recommendations from this important meeting," said Gropp.

**More information:** The full report, "Enhancing Complex Data Integration across Research Domains: A Workshop Report," is available from AIBS at [http://www.aibs.org/public-policy/complex\\_data.html](http://www.aibs.org/public-policy/complex_data.html).

Provided by American Institute of Biological Sciences

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