



To Whom It May Concern,

We are writing on behalf of the [Laser Interferometer Gravitational Wave Observatory](#) (LIGO) to ask for your assistance in enabling participation in international research collaborations via federated identities. LIGO consists over 1100 researchers at almost 120 research institutions in 19 countries. These researchers have access to over 200 research servers provided worldwide by LIGO groups. Most of these resources are also shared with the French-Italian [VIRGO](#) gravitational wave observatory and the [KAGRA](#) observatory in Japan. Furthermore, LIGO and Virgo also have signed memoranda of understanding to collaborate with over 100 other astronomy groups comprised of 575 scientists from around the world.

The challenge of sharing resources within such a large and dynamic community is formidable. One of the best tools for managing this challenge is [federated identity](#). Federated identity is a mechanism by which an approved server can use a person's home institution to authenticate them. For instance, if a scientist from the University of Wisconsin (UW) wants to login to a LIGO data server that supports federated identity, the LIGO server would redirect the scientist to the UW Identity provider (or IdP, a login service operated at UW). If the scientist enters their UW username and password, the UW IdP notifies the LIGO data server that the person is authenticated and supplies a little information (name, email address, unique id) to the LIGO data server. The LIGO data server then proceeds to make authorization decisions about what the scientist can do there.

Federated identity has been widely used by universities and other educational institutions for years, however, it is just gaining a foothold in research. Continuing in its tradition of leadership in identity and access management for large research collaborations, LIGO has recently made a commitment to the US [National Science Foundation](#) to greatly increase the use of federated identity in its own operations. We believe that eventually all gravitational wave scientists will collaborate closely, sharing data and other resources to enable the best possible scientific outcomes. Federated identity will be an essential technology in allowing such sharing.

We strongly encourage all gravitational wave communities and all related communities to use federated identity to facilitate gravitational wave science. Important steps toward realizing this goal are:

- Participation in [National Research and Education Network](#) SAML Federations (available in most nations) by all institutions and organizations doing gravitational wave science.
- Participation of all SAML federations in [eduGAIN](#), to allow for the federation of identities across national borders.
- The adoption of research-friendly standards, like the [Research and Scholarship Entity Category](#) and [SIRTFI](#) trust framework by all identity providers supporting research.

These steps will enable the best possible international and cross-collaboration science and will pave the way for groundbreaking future discoveries.

Sincerely,

David Reitze, *Director of LIGO Laboratory*

David Shoemaker, *Spokesperson of the LIGO Scientific Collaboration*

Patrick Brady and Peter Couvares, *Chairs of the LIGO Computing and Software Committee*

Warren Anderson and Scott Koranda, *LIGO Identity and Access Management*