

Identity Management & Federation for LIGO

Scott Koranda for LIGO

LIGO and University of Wisconsin-Milwaukee

April 26, 2012

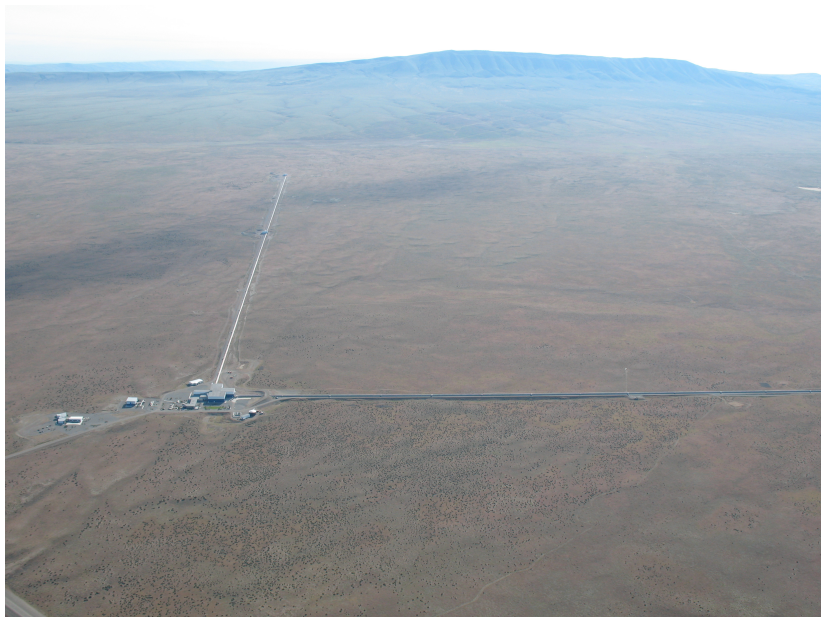
LIGO-G1200477-v1



LIGO Science Mission

LIGO, the Laser Interferometer Gravitational-wave Observatory, seeks to detect gravitational waves – ripples in the fabric of spacetime. First predicted by Einstein in his theory of general relativity, gravitational waves are produced by exotic events involving black holes, neutron stars and objects perhaps not yet discovered.

LIGO Hanford, WA



LIGO Livingston, LA



LIGO Laboratory =
LIGO Caltech + LIGO MIT +
LIGO Hanford Observatory +
LIGO Livingston Observatory

LIGO Scientific Collaboration

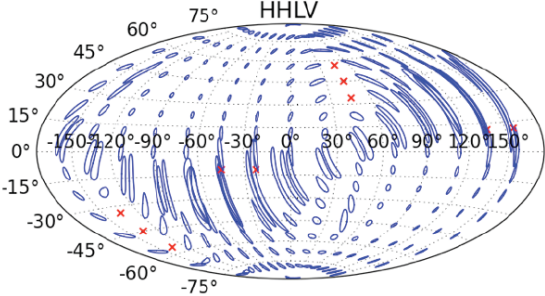
The LIGO Scientific Collaboration (LSC) is a self-governing collaboration seeking to detect gravitational waves, use them to explore the fundamental physics of gravity, and develop gravitational wave observations as a tool of astronomical discovery. The LIGO Scientific Collaboration was founded in 1997 and currently has more than 800 members from 70 institutions worldwide.

LIGO India!



Anticipated to be operational 2020

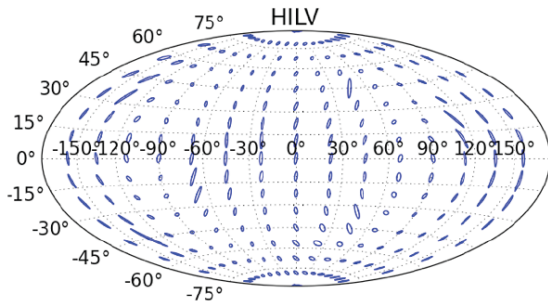
Network Without LIGO India



Fairhurst 2011

Red crosses denote regions where the network has blind spots

Network WITH LIGO India



Fairhurst 2011

LIGO Identity Management

LIGO Identity Management: We Had a Mess

LIGO scientists struggle in early 2007:

- web** Many servers, wikis, log books—multiple identities
- grid** Request, renew, manage own X.509 certificates
- shell** Multiple identities each with distinct credential
- email** Each list managed separately

LIGO Identity Management: We Had a Mess

No single event precipitated new approach

It really came down to two things:

1. Sustained whining from frustrated users
2. Chatting with Ken Klingenstein over drinks

LIGO Identity Management Project

Started in Summer 2007

Knit together existing technologies and tools

Goals:

- ▶ Single identity for each LIGO person
- ▶ Single source of membership info
- ▶ Single credential for each LIGO person
- ▶ SSO across web, grid, command-line

LIGO Identity Management Project

Selecting solid tools was the easy part...

Kerberos single identity and credential

Grouper single source of membership info

OpenLDAP solid distributed replication

Shibboleth web SSO with eye towards federation

Sympa sophisticated email list management

CILogon flexible and easy X.509

CoManage coming soon!

LIGO IdM Project: Status Spring 2012



- ▶ Kerberos principal for each LIGO member
 - ▶ `scott.koranda@LIGO.ORG`
 - ▶ users call it their “at LIGO.ORG login”
 - ▶ also known as their “albert.einstein” login
- ▶ Kerberos master KDC & multiple replicas



Welcome Scott Koranda

Act as admin

Change

My tools

Explore

Search

Group workspace

Entity workspace

Help

LIGO

Roster

MyLIGO

EXPLORE

Browse groups hierarchy

You can look for groups throughout the hierarchy.
(You might not be able to see some groups if you lack appropriate privileges.)

Browse or list groups

Current location is:

Root Communities: LVC: LSC: MOU

10

Change page size

Showing 1-10 of 51 items

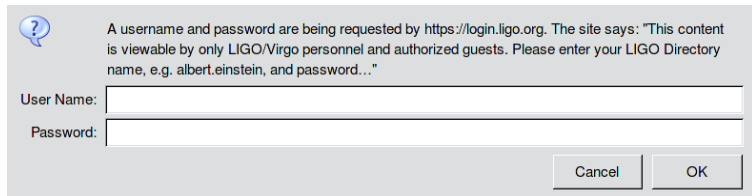
- BalearicIslands
- UOregion
- McNeese
- SanJoseState
- MoscowState
- HobartWilliamSmith
- GEO
- UWM
- Northwestern
- UMiss

[Next page](#)

LIGO group management based on
Grouper from


[Search groups](#)
[Advanced groups search](#)

Production Shibboleth Deployment



A username and password are being requested by `https://login.ligo.org`. The site says: "This content is viewable by only LIGO/Virgo personnel and authorized guests. Please enter your LIGO Directory name, e.g. albert.einstein, and password..."

User Name:

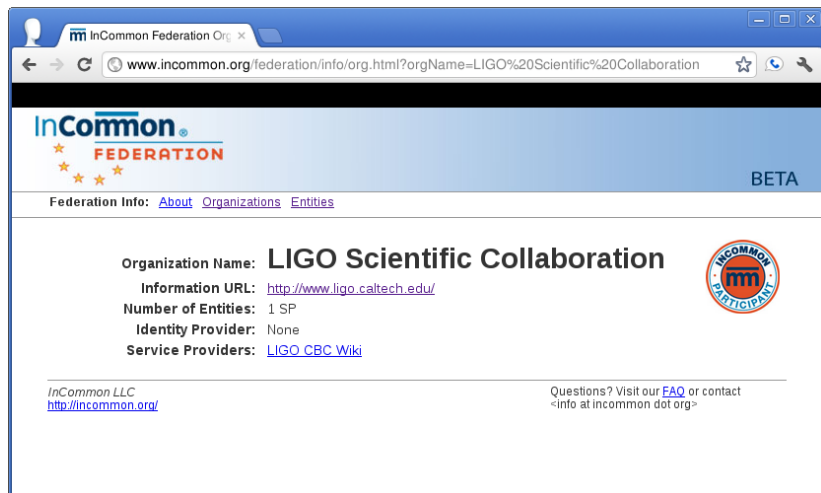
Password:

Cancel OK

- ▶ 4 Identity Providers (IdPs)
- ▶ 65 Service Providers (SPs)

LIGO and Identity Federation

LIGO and InCommon



The screenshot shows a web browser window with the InCommon Federation logo and navigation links. The main content area displays the following information:

Organization Name: LIGO Scientific Collaboration

Information URL: <http://www.ligo.caltech.edu/>

Number of Entities: 1 SP

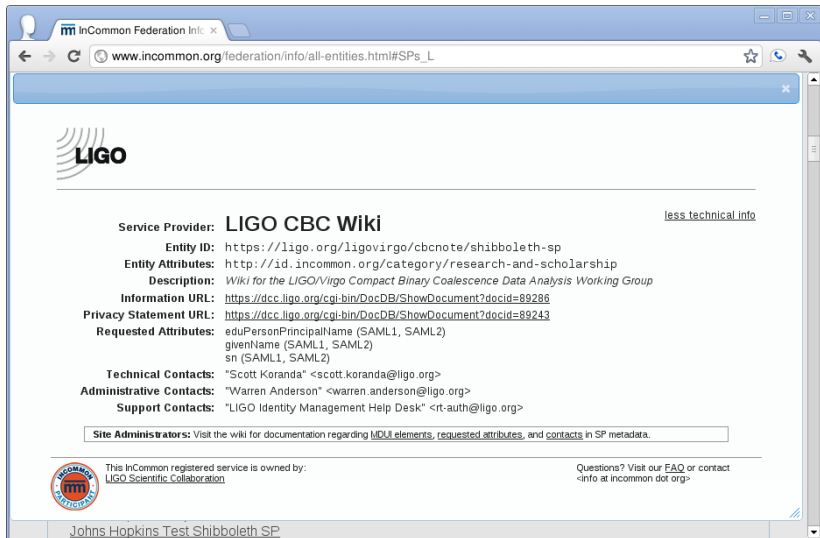
Identity Provider: None

Service Providers: [LIGO CBC Wiki](#)

On the right side of the page, there is a circular logo that reads "INCOMMON PARTICIPANT" around the perimeter and "mm" in the center.

At the bottom left, it says "InCommon LLC" with a link to <http://incommon.org/>. At the bottom right, it says "Questions? Visit our [FAQ](#) or contact <info at incommon dot org>".

LIGO and InCommon



The screenshot shows a web browser window with the address bar displaying `www.incommon.org/federation/info/all-entities.html#SPs_L`. The page content includes the LIGO logo, a service provider entry for "LIGO CBC Wiki", and various technical details such as Entity ID, Entity Attributes, Description, Information URL, Privacy Statement URL, Requested Attributes, and Technical Contacts. A footer section contains the InCommon logo and text stating "This InCommon registered service is owned by: LIGO Scientific Collaboration".

LIGO

Service Provider: **LIGO CBC Wiki** [less technical info](#)

Entity ID: `https://ligo.org/ligovirgo/cbcnote/shibboleth-sp`

Entity Attributes: `http://id.incommon.org/category/research-and-scholarship`

Description: *Wiki for the LIGO/Virgo Compact Binary Coalescence Data Analysis Working Group*

Information URL: <https://dcc.ligo.org/cgi-bin/DocDB/ShowDocument?docid=89286>

Privacy Statement URL: <https://dcc.ligo.org/cgi-bin/DocDB/ShowDocument?docid=89243>


Requested Attributes: eduPersonPrincipalName (SAML1, SAML2)
givenName (SAML1, SAML2)
sn (SAML1, SAML2)

Technical Contacts: "Scott Koranda" <scott.koranda@ligo.org>

Administrative Contacts: "Warren Anderson" <warren.anderson@ligo.org>

Support Contacts: "LIGO Identity Management Help Desk" <rt-auth@ligo.org>

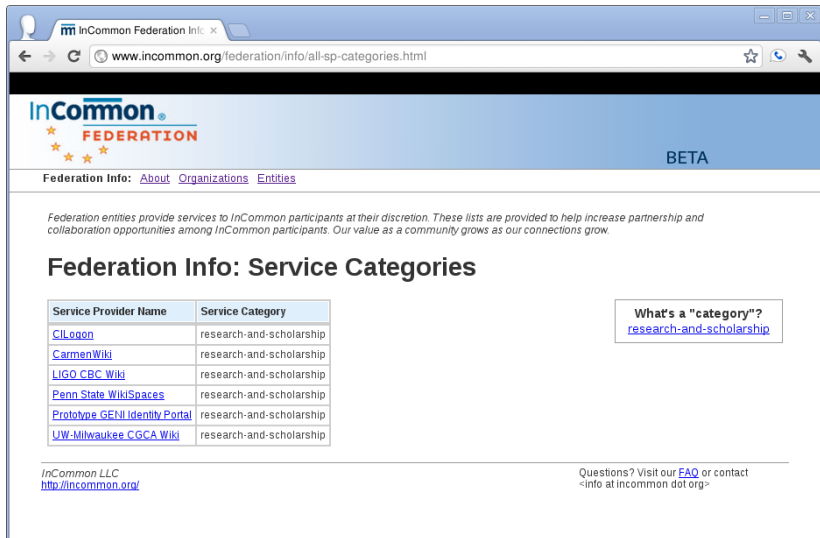
Site Administrators: Visit the wiki for documentation regarding [MDUI elements](#), [requested attributes](#), and [contacts](#) in SP metadata.

 This InCommon registered service is owned by:
LIGO Scientific Collaboration

Questions? Visit our [FAQ](#) or contact
<info at incommon dot org>

Johns Hopkins Test Shibboleth SP

LIGO and InCommon



The screenshot shows a web browser window with the URL www.incommon.org/federation/info/all-sp-categories.html. The page features the InCommon Federation logo and a 'BETA' label. A navigation menu includes 'Federation Info: About Organizations Entities'. A paragraph explains that federation entities provide services at their discretion to help increase partnership and collaboration. The main heading is 'Federation Info: Service Categories'. A table lists service providers and their categories, all of which are 'research-and-scholarship'. A callout box asks 'What's a "category"?' and links to 'research-and-scholarship'. At the bottom, there is contact information for InCommon LLC and a link to their FAQ.

InCommon Federation

BETA

Federation Info: [About](#) [Organizations](#) [Entities](#)

Federation entities provide services to InCommon participants at their discretion. These lists are provided to help increase partnership and collaboration opportunities among InCommon participants. Our value as a community grows as our connections grow.

Federation Info: Service Categories

Service Provider Name	Service Category
CILogon	research-and-scholarship
CarmenWiki	research-and-scholarship
LIGO CBC Wiki	research-and-scholarship
Penn State WikiSpaces	research-and-scholarship
Prototype GENI Identity Portal	research-and-scholarship
UW-Milwaukee CGCA Wiki	research-and-scholarship

What's a "category"?
[research-and-scholarship](#)

InCommon LLC
<http://incommon.org/>


Questions? Visit our [FAQ](#) or contact <info at incommon dot org>

LIGO and InCommon: External Collaborators


The screenshot shows a web browser window with the URL <https://www.lsc-group.phys.uwm.edu/ligovirgo/cbcnote/DiscoveryService?entityID=https%3A%2F%2Fligo.c>. The browser's address bar and navigation buttons are visible at the top. Below the browser, the page has a navigation menu with links for [LVC Portal](#), [GEO](#), [LIGO](#), [LSC](#), [VIRGO](#), and [Help](#). A search bar is located in the top right corner, with buttons for "Titles" and "Text". Below the search bar is a link: [Refresh my LIGO group memberships](#).

Choose how to login

Use a suggested selection:



LIGO



LIGO Guest

Or select your organization from the list below

Massachusetts Institute of Technology

Please select your organization...

LIGO

LIGO Guest

Massachusetts Institute of Technology

University of Wisconsin-Milwaukee

Continue

[Help](#)

Navigation

- [InspiralAnalysisGlossary](#)
- [RecentChanges](#)
- [FindPage](#)
- [HelpContents](#)
- [DiscoveryService](#)

Page

- [Immutable Page](#)
- [Info](#)
- [Attachments](#)
- [More Actions:](#)

User

- [Login](#)

[MainMoin Powered](#)
[Python Powered](#)
[GPL licensed](#)
[Valid HTML 4.01](#)

LIGO and InCommon: External Collaborators

DiscoveryService - UWM L x

https://www.lsc-group.phys.uwm.edu/wiki/DiscoveryService?entityID=https%3A%2F%2Fcgca.phys

CGC Home LIGO@UWM ARCC@UWM

Center for Gravitation and Cosmology Wiki

welcome: please sign in
Refresh my LIGO and UWM CGC group memberships

CGCWiki > DiscoveryService

Quick Links

- recentchanges
- findpage
- helpcontents

Search Wiki

Search

Titles Text



Page Tools

- Page Locked
- page history
- upload & manage files

[more options]

Choose how to login

Use a suggested selection:

LIGO University of Wisconsin-Milwaukee

Or select your organization from the list below

Please select your organization... Continue

Help

- Please select your organization...
- University of British Columbia
- LIGO
- University of Wisconsin-Madison
- University of Wisconsin-Milwaukee

Scottkoranda@TigoDO.Torg)

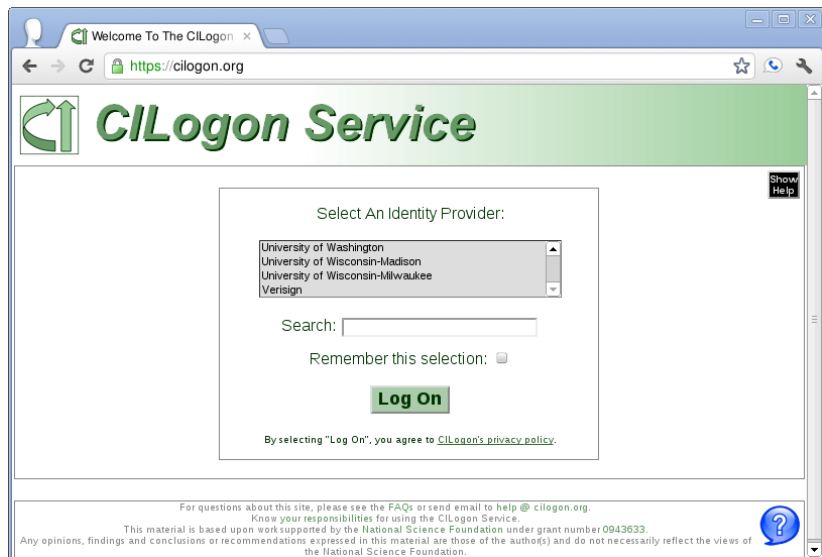
LIGO and InCommon: NSF and Review Panel



The screenshot shows a web browser window with the address bar displaying "www.ligo.caltech.edu/NSF/". The page title is "LIGO reviews by NSF". The main heading is "LIGONSFReviews". Below the heading, there are three tabs: "2012 aLIGO Review, 04.11-04.13.2012", "2012 LIGO-India Review, 04.17.2012", and "Past reviews". The content area features a list of links:

- » [NSF aLIGO Annual Review](#)
11-13 April, 2012
[LIGO Hanford Observatory \[LHO\]](#)
- » [Agenda, Charge, Recommendations from Previous Reviews, Panel Roster, Breakout Assignments, Pre](#)
- » [Review Documents and Background Documents](#)
- » [Attendees](#)
- » [General Information](#) (venue, accommodations, travel, etc)

LIGO and InCommon: CILogon for X.509 and Grid



The screenshot shows a web browser window with the title "Welcome To The CILogon" and the URL "https://cilogon.org". The main heading is "CILogon Service" with a logo of a green arrow forming a circle. Below the heading is a "Select An Identity Provider:" section containing a dropdown menu with options: "University of Washington", "University of Wisconsin-Madison", "University of Wisconsin-Milwaukee", and "Verisign". There is a search input field, a "Remember this selection:" checkbox, and a green "Log On" button. A "Show Help" link is in the top right. At the bottom, there is a footer with text: "For questions about this site, please see the FAQs or send email to help@cilogon.org. Know your responsibilities for using the CILogon Service. This material is based upon work supported by the National Science Foundation under grant number 0943633. Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation." and a question mark icon.

Welcome To The CILogon

https://cilogon.org

CILogon Service

Show Help

Select An Identity Provider:

- University of Washington
- University of Wisconsin-Madison
- University of Wisconsin-Milwaukee
- Verisign

Search:

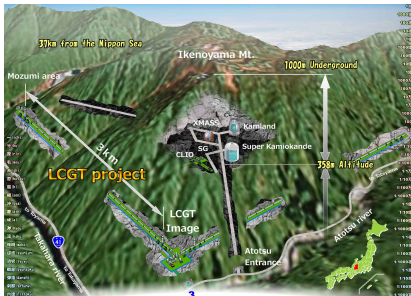
Remember this selection:

Log On

By selecting "Log On", you agree to [CILogon's privacy policy](#).

For questions about this site, please see the FAQs or send email to help@cilogon.org.
Know your responsibilities for using the CILogon Service.
This material is based upon work supported by the National Science Foundation under grant number 0943633.
Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

LIGO and InCommon: International Federation



LIGO and InCommon: Interational Federation

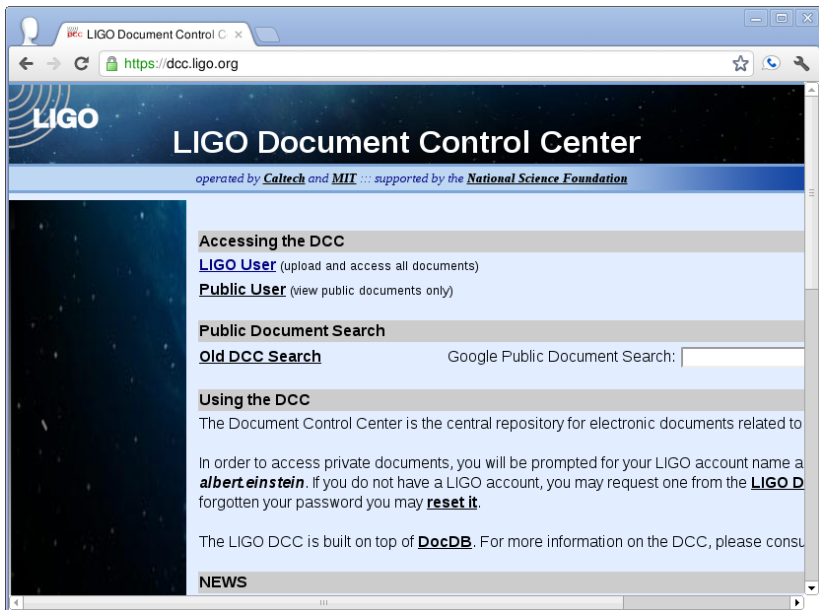
The screenshot shows a web browser window with the URL <https://refeds.org>. The page features the REFEDS logo (a red and white circle with diagonal lines) and the text "REFEDS". To the right, a tagline reads: "The voice of research and education identity federations – 16 million users across thousands of institutions have something to say." Below this is a large banner with the word "Federation" in the center, surrounded by other terms: "Network", "Mobile", "Privacy", "Research", "Education", "Collaboration", "Technology", "Identity", "Security", and "Global".

On the left side, there is a navigation menu with the following items: Home (highlighted in red), About us, Our work, News, Resources, FAQ, and Contact us.

The main content area has a section titled "Announcement" with a background image of a stack of papers. The text in this section reads: "Register for the next [REFEDS Meeting](#)", "New [Federated Access Management Document](#) published", and "[PEER software](#) available for testing". Below the announcement are two blue buttons: "Why use a federation?" and "Where is my federation?".

To the right of the announcement is a "Welcome" section. The text reads: "REFEDS mission is to be the voice that articulates the mutual needs of research and education identity federations worldwide. It aims to represent the requirements of research and education in the ever-growing space of access and identity management, working with and influencing the direction of organisations such as Kantam, OIX and Identity Commons on behalf of our participants." Below this is another paragraph: "The work of REFEDS will be prioritised by its participants based on the most important requirements of the identity federations."

LIGO and InCommon: Interational Federation



The screenshot shows a web browser window with the address bar displaying <https://dcc.ligo.org>. The page header features the LIGO logo and the title "LIGO Document Control Center", with a sub-header stating "operated by *Caltech* and *MIT* :: supported by the *National Science Foundation*".

The main content area is organized into sections:

- Accessing the DCC**
 - [LIGO User](#) (upload and access all documents)
 - [Public User](#) (view public documents only)
- Public Document Search**
 - [Old DCC Search](#)
 - Google Public Document Search:
- Using the DCC**

The Document Control Center is the central repository for electronic documents related to

In order to access private documents, you will be prompted for your LIGO account name a ***albert.einstein***. If you do not have a LIGO account, you may request one from the [LIGO D](#) forgotten your password you may **[reset it](#)**.

The LIGO DCC is built on top of [DocDB](#). For more information on the DCC, please consu
- NEWS**

The browser window includes standard navigation buttons and a scrollbar on the right side.

Managing Collaboration with COmanage

The screenshot shows a web browser window with the following elements:

- Browser Tab:** COmanage Registry: COF x
- Address Bar:** https://demo.co.internet2.edu/registry/co_people/index/co:5
- Navigation:** News | Support | Directory | Help
- User:** Scott Koranda (with a notification icon) | Logout
- Menu:** Organizations ▾ | Platform ▾ | My Account ▾
- Logo:** COmanage™
- Section Header:** LIGO Swift Collaboration People
- Action:** Invite (+)
- Table Headers:** Name | Status | Roles | Actions
- Footer:** Powered by COmanage™