

National Institute of Allergy and Infectious Diseases



UbuntuNet-Connect 2019

How **RENU** Identity Federation (**RIF**) has been an enabler
for Research at the NIH-ICER Uganda

October 31st and November 1st 2019 Antananarivo, Madagascar

NIAID



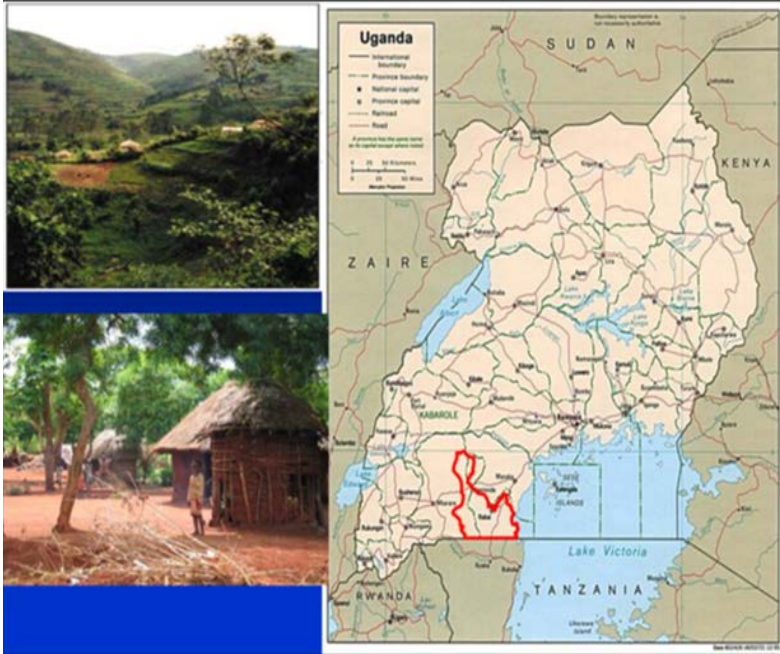
National Institute of
Allergy and
Infectious Diseases

Lloyd Ssentongo

IT Site Leader, NIH-ICER Uganda, NIAID/NIH

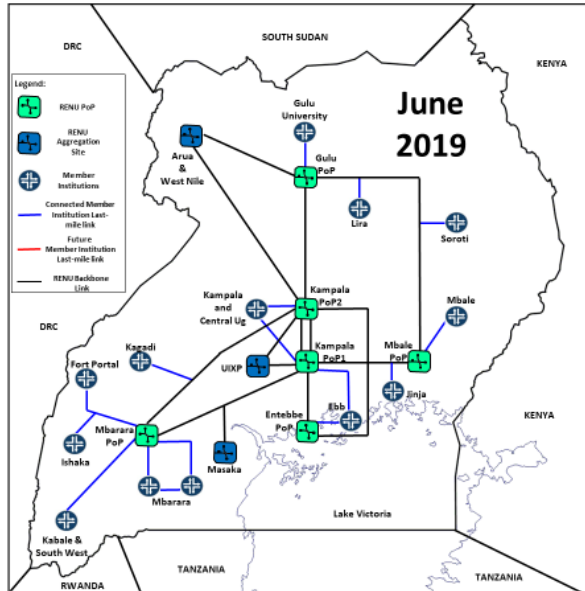
Chairman IT Directors Forum, RENU

NIHICER Uganda- Rakai Health Sciences Program collaboration (RHSP)



In 2002, RHSP became one of the three NIAID-NIH supported International Centers of Excellence in Research Along with Centers in Bamako, Mali and Chennai, India.

RENU MAP as of June 2019



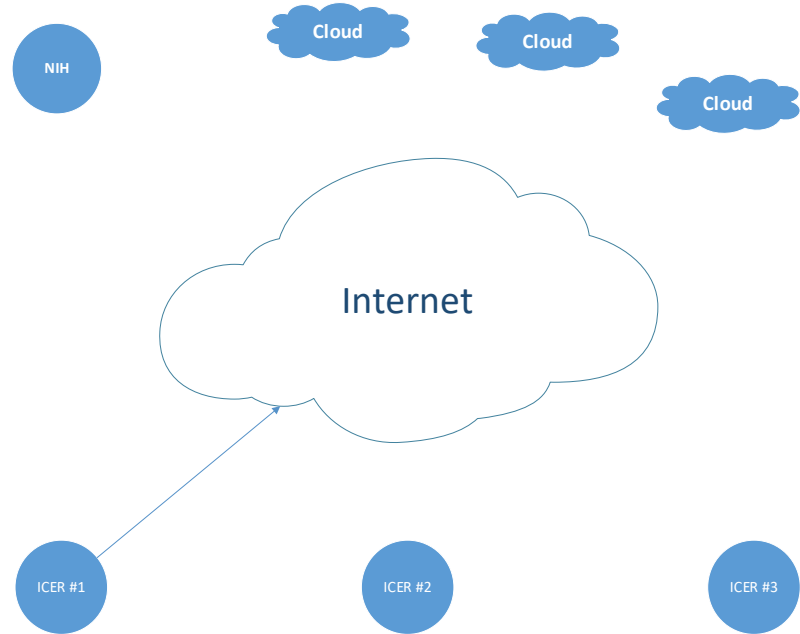
7/22

- - Approximately 150 plus connected campuses
- Services
 - Local network traffic – uncapped
 - IPv4 public addresses (minimum 256 or /24) + Ipv6
 - Eduroam
 - **RENU Identity Federation (RIF)**
 - Web Conferencing
 - SSL Certificates (COMODO)
 - Capacity building (Workshops and DEAs)
 - RENU-CERT reports
 - Network Traffic monitoring
 - Open Source Mirror
 - Leased lines “Free connectivity”

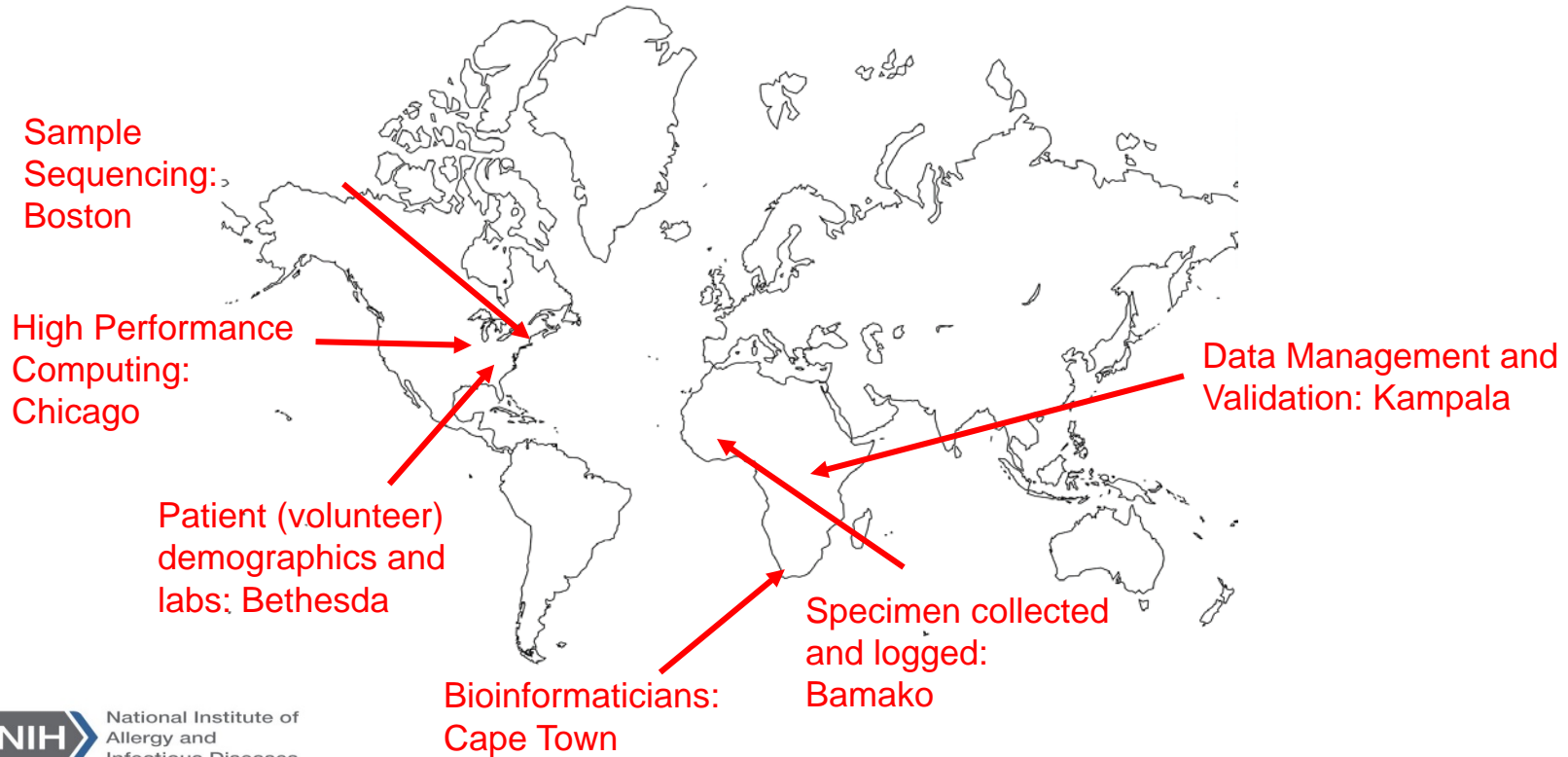


The problem

- Network with distributed services across the world.
- Moving services from the LAN to the cloud requires identity and groups.
 - Every cloud has its own user database and directory
- Collaboration with scientists around the world.



Globalization of Research



Globalization of Research

Investigators: Oxford, Boston, Bethesda, Chicago, Bamako

Sample Sequencing: Boston

High Performance Computing: Chicago

Patient (volunteer) demographics and labs: Bethesda

Data Management and Validation: Kampala

Specimen collected and logged: Bamako

Bioinformaticians: Cape Town

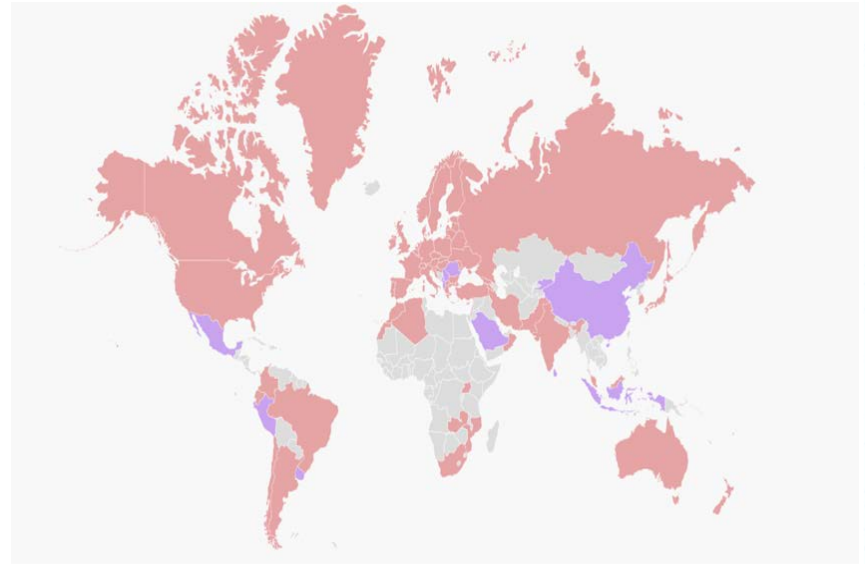
Identity Aggregation and Grouping

- Many applications now provide single-signon using Facebook, Google, Twitter, and other identity providers
 - two problems include commercial ownership and less assurance of credentials
- Academic and Research institutions have created Trust Federations
 - InCommon - Internet2 federation
 - Canarie – Canadian Access Federation
 - EduGAIN
 - **RIF** - RENU Identity Federation enables member institutions to access and share resources securely. Established August 2016



REFEDS

- Top body world wide that manages all federations.
- Develop access and identity management technology, policies and processes



- REFEDS Distinguished Engineer: Alex Mwotil.
- REFEDS Distinguished Engineer: Raja Visvanathan.

eduGAIN Membership worldwide

eduGAIN Membership

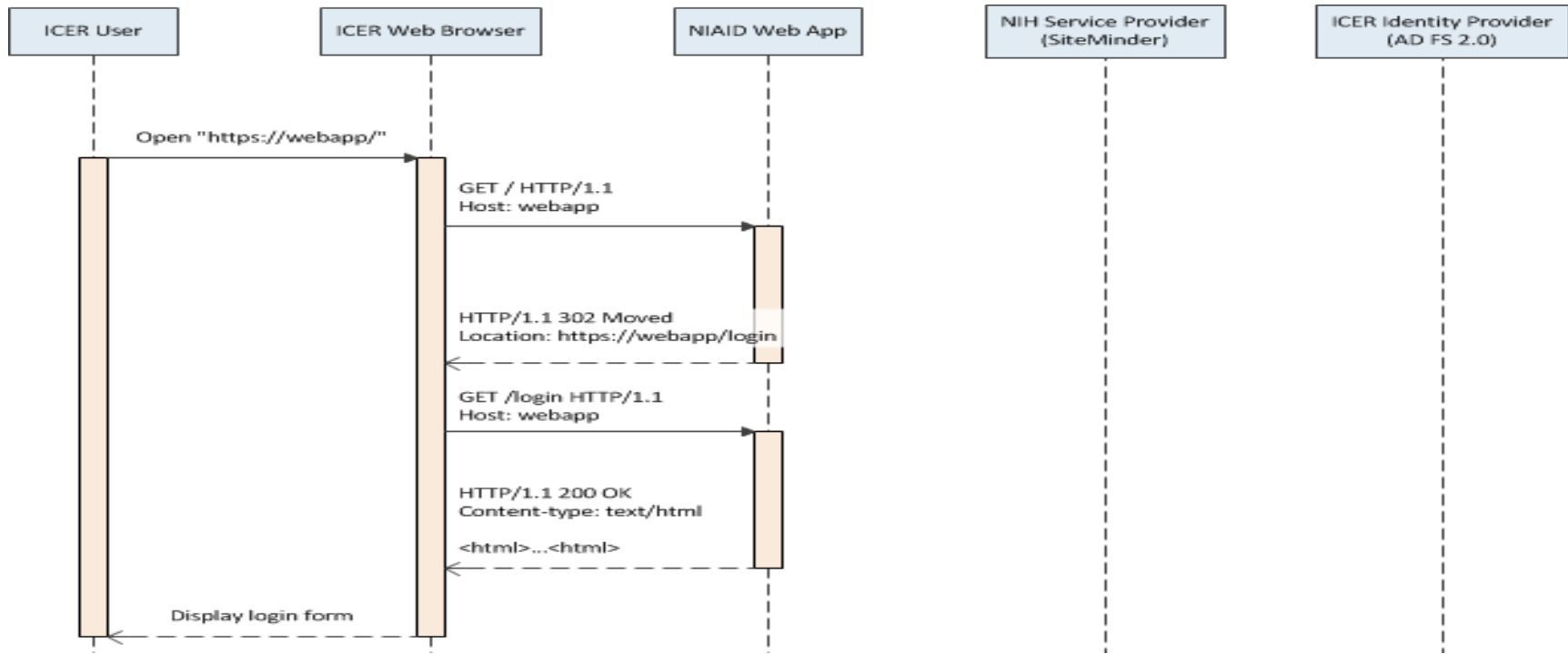
- **eduGAIN**
 - 66 federations worldwide
 - 8 candidates (1 in Africa)
 - voting-only (3)
 - 5 in Africa + 1 candidate
 - Algeria(ARNaai)
 - Morocco(eduIDM.ma)
 - Mozambique(CAFMoz)
 - South Africa (SAFIRE)
 - **Uganda(RIF)**
 - **Malawi (MAREN) - Candidate**



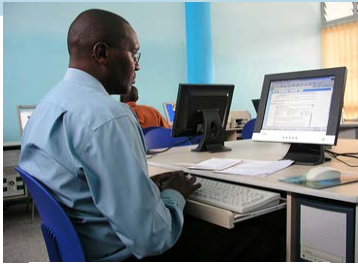
RIF Membership

- Infectious Disease Institute-Uganda (IDI)
- International Centre for Excellence Research (ICER)
- Research and Education Network for Uganda (RENU)
- Uganda Christian University - (UCU)
- Rakai Health Science Program - (RHSP)





Authentication and authorization process flow



einstein@rhsp.org

1. I would like to access file sender



6. Sure Einstein. Here You go



Help About

HTML5

Welcome to FileSender | RENU

FileSender | RENU is a secure way to share large files with anyone! Logon to upload your files or invite people to send you a file.

Logon

Service provider (SP) @RENU

3. I need your credentials

4. Here are my login credentials



Shibboleth.

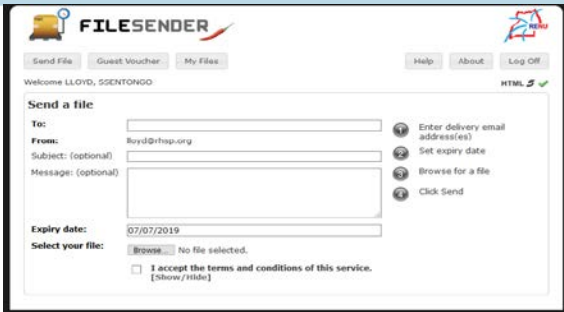
Identity Provider Server @NIH ICER

2. Do you know Einstein ? Is he a staff

5. Yes I do . And yes he is a staff

NIH National Institute of Allergy and Infectious Diseases

Accessing File sender service using RIF platform



FILESENDER

Send File Guest Voucher My Files Help About Log Off

Welcome LLOYD, SSENTONGO HTML 5

Send a file

To: Enter delivery email address(es)

From: Set expiry date

Subject: (optional) Browse for a file

Message: (optional) Click Send

Expiry date:

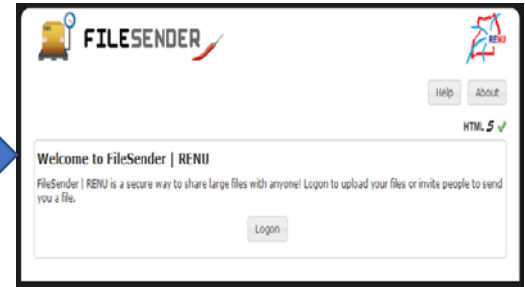
Select your file: No file selected.

I accept the terms and conditions of this service. [Show/Hide]

Successfully Logged in



einstein@rhsp.org



FILESENDER

Help About HTML 5

Welcome to FileSender | RENU

FileSender | RENU is a secure way to share large files with anyone! Logon to upload your files or invite people to send you a file.

FileSender Service (SP)



ICER Uganda
International Center for Excellence in Research
A Uganda-US Biomedical Research Partnership

Login to NIAID Science Forum
Federation Gateway

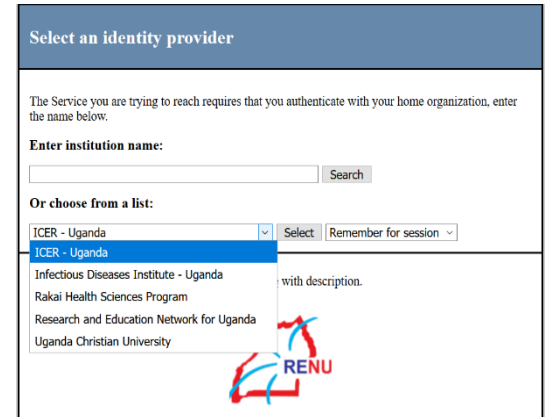
Username [Forgot your password?](#)

Password [Need Help?](#)

Don't Remember Login

Clear prior granting of permission for release of your information to this service.

Identity Provider (IDP)



Select an identity provider

The Service you are trying to reach requires that you authenticate with your home organization, enter the name below.

Enter institution name:

Or choose from a list:

ICER - Uganda

ICER - Uganda

Infectious Diseases Institute - Uganda with description.

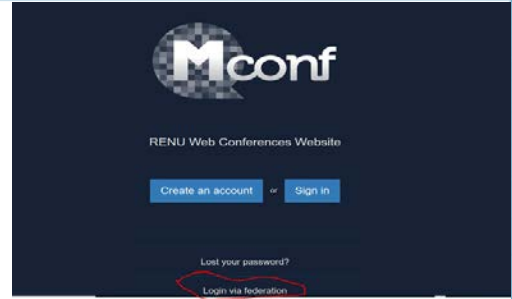
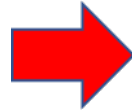
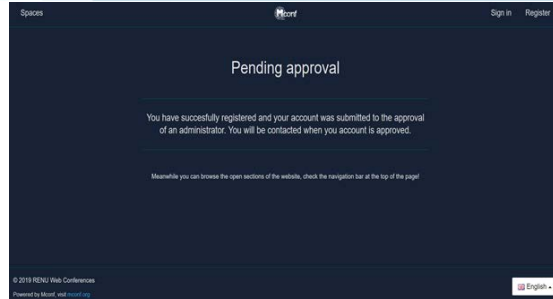
Rakai Health Sciences Program

Research and Education Network for Uganda

Uganda Christian University

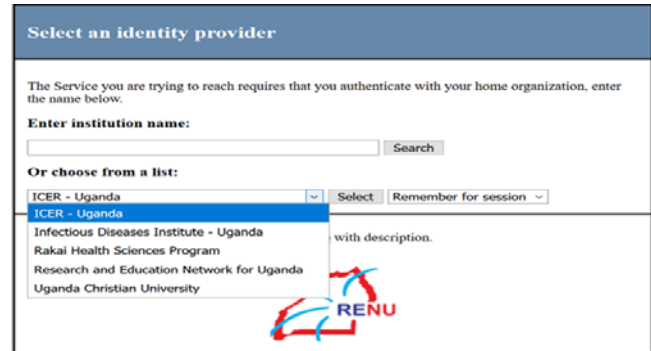
RENU

2. Accessing web conferencing services using RIF platform

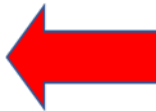


einstein@rhsp.org

Service provider (SP)



Identity Provider (IDP)



Successfully Logged in

Other services we use RIF



Challenges

- Very few skilled and trained personnel worldwide to do the setup.
- Trouble shooting can take a bit of time if something breaks.
- It's a little complex to understand the setup while starting.
- A lot of the software used is open source and the setup for various institutions are differ

Solutions to some challenges

- Through partnerships with Ubuntunet, GEANT, RDCT, NIH and sphericalcowgroup , RENU has organized training workshops to train staff on the Trust, identity and federations technologies.
- Encouraging institutions subscribe to email lists REFEDS, INcommon

Acknowledgements

- Michael Tartakovsky, CIO NIAID/NIH, Director OCICB
- Christopher J Whalen, RDCT
- Matthew Economou, NETE
- Scott Koranda, Spherical Cow Group
- Nicholas Mbonimpa - CEO, RENU
- Hellen Nakawungu, RENU



Questions ?