B07

CUSP: An Option to Address Administrative Burden at the Institutional Level

Madeline Budda, Jaret Langston & Aubrey Schoenleben

April 2, 2019

PRIM&R's
2019 IACUC Conference
April 1-3 • Bellevue, WA
and NWABR Regional IACUC/IBC Conference • April 4

Hello!

Madeline Budda, DVM, MS, DACLAM
Director, Office of Animal Welfare Assurance
University of Oklahoma Health Sciences Center

Jaret Langston, MSEng
Manager, Applications Architect - Enterprise
University of Alabama at Birmingham

Aubrey Schoenleben, PhD, CPIA
Scientific Reviewer, Office of Animal Welfare
University of Washington

Content Copyright

Disclosures: Madeline Budda, Jaret Langston, Aubrey Schoenleben

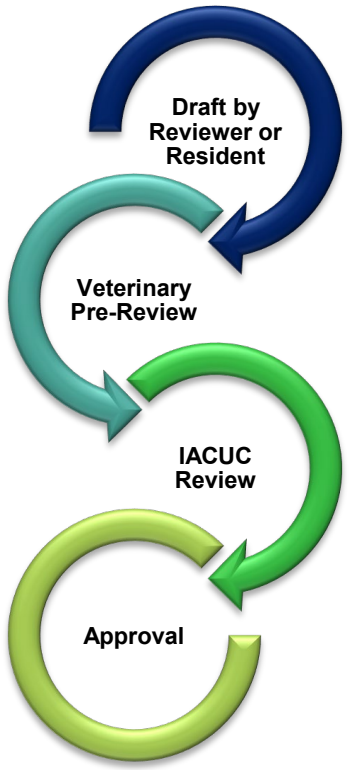
I have no relevant personal/professional/financial relationship(s) with respect to this educational activity

Learning Objectives

1. Provide an overview of the CUSP project and the responsibilities of participants using the system.
2. Demonstrate how participants can utilize the system through the use of a model.
3. Share the current status of the project and future timelines.

Background

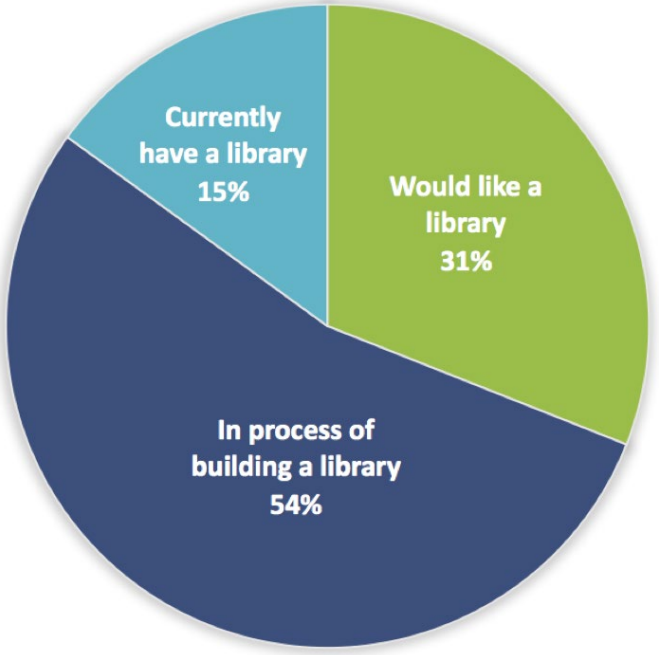
- Transition to electronic protocol management system **motivated** development of standard procedures.
- Development and approval of standard procedures – **OAW staff, veterinarians and the IACUC.**
- Current library includes
  - 897 standard substances
  - **656 standard procedures**



PRIM&R PUBLIC RESPONSIBILITY IN MEDICINE AND RESEARCH

It's Not Just Us…

- Animals research regulations identified as a top source of administrative burden.
- Protocol review process "unnecessarily complex and time consuming."
- Identifying a mechanism to reduce the time and effort needed to create and review protocols would reduce this burden for researchers and IACUCs.



1. National Science Board. 2015. Reducing Investigators' Administrative Workload for Federally Funded Research. Retrieved from: https://www.nsf.gov/pubs/2014/nsb1418/nsb1418.pdf
2. 21st Century Cures Act. January 2017. Retrieved from: https://www.congress.gov/114/bills/hr34/BILLS-114hr34enr.pdf
3. Federal Demonstration Partnership. 2018. Faculty Workload Survey Results. Retrieved from: http://thefdp.org/default/assets/File/Presentations/FDP%20FWS3%20Results%20Plenary%20Jan19%20fnl.pdf

PRIM&R PUBLIC RESPONSIBILITY IN MEDICINE AND RESEARCH

Goal of the CUSP Project

Develop an online venue where participating institutions can share standard procedures used in animal care protocols.

CUSP SHARING SITE

CUSP = **C**ompliance **U**nit **S**tandard **P**rocedure
Partnered with Federal Demonstration Partnership

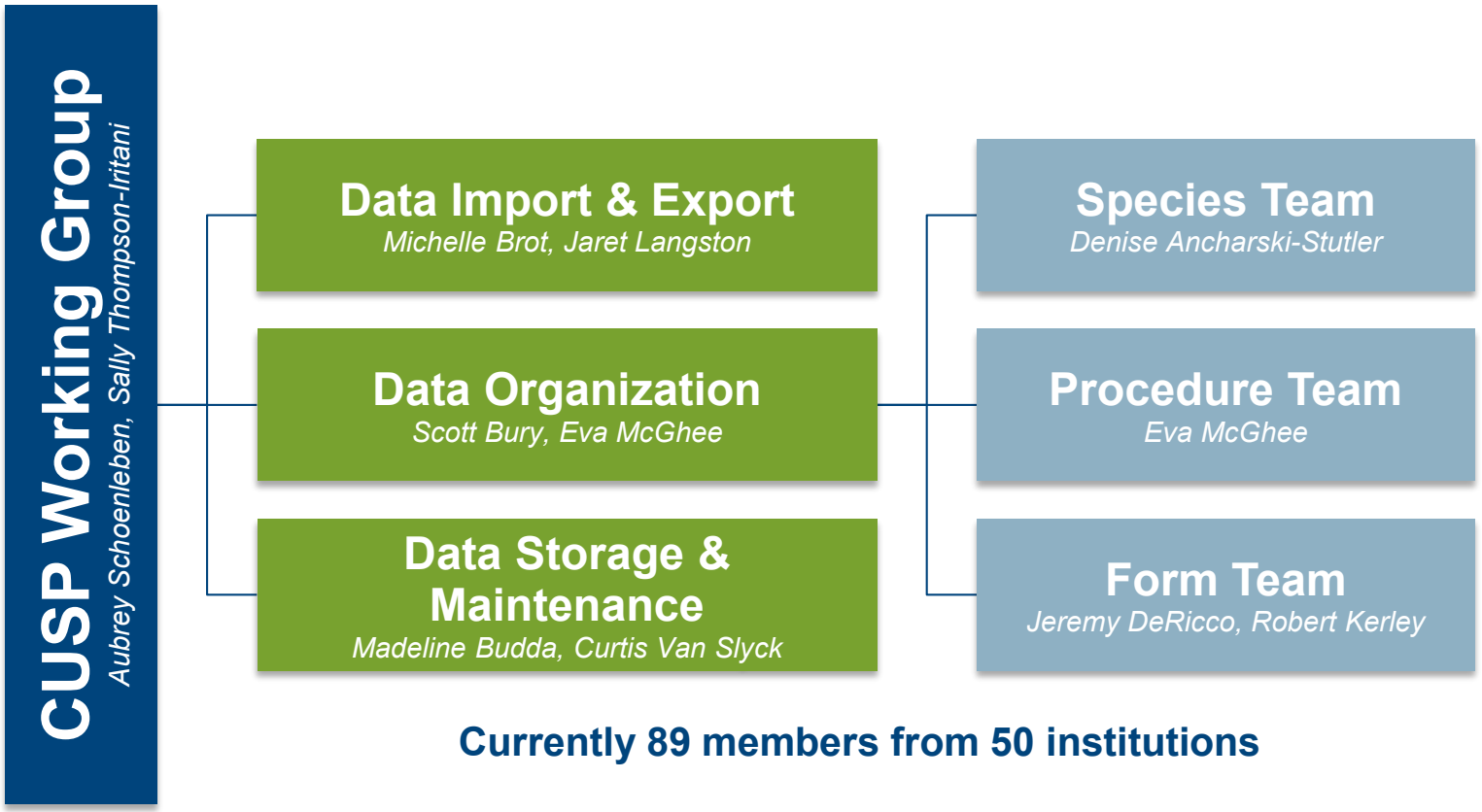
Benefits

- ✓ Reduced administrative burden for researchers, IACUCs and IACUC staff.
- ✓ Support development of high quality animal care protocols.
- ✓ Provide consistency within and across institutions.
- ✓ Support knowledge sharing within the animal welfare compliance community.

Site Guidelines

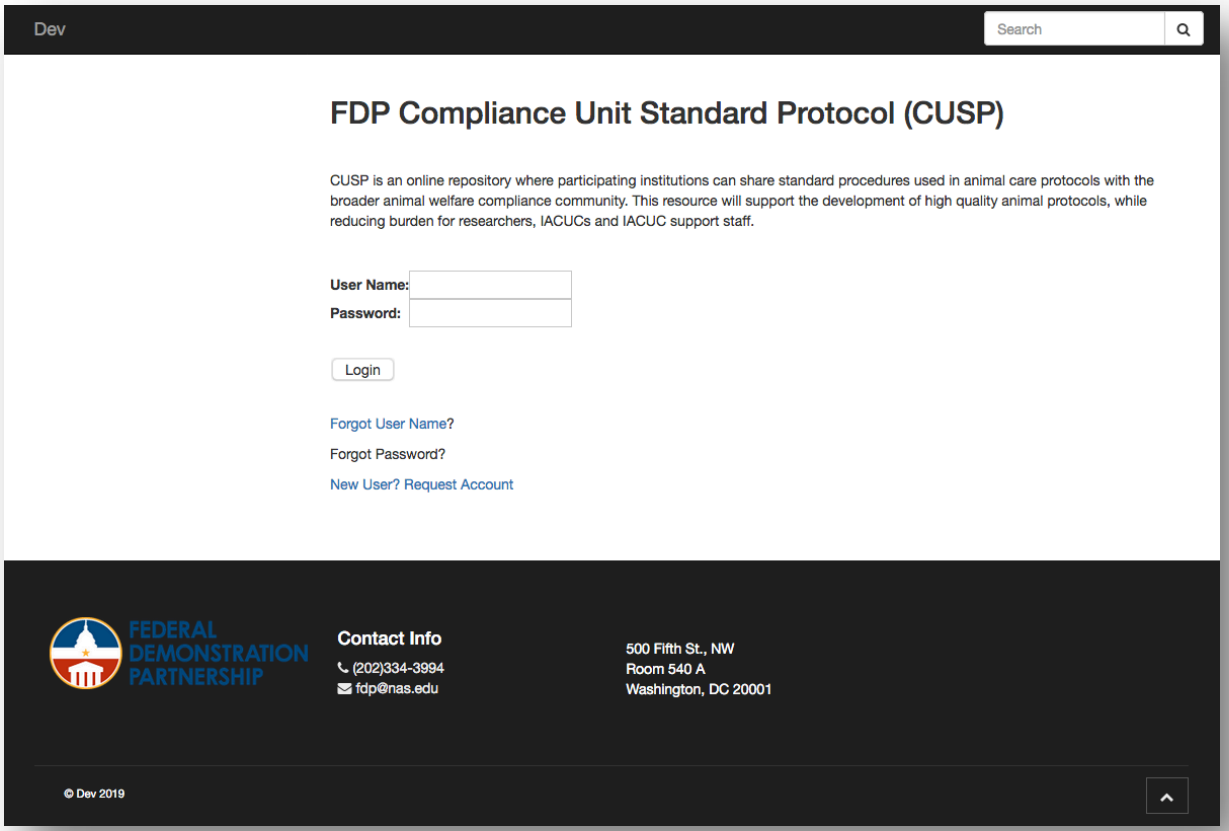
- Participating institutions have the opportunity and expectation to contribute.
- Each institution is expected to maintain their contributions as updates occur.
- Each procedure must be reviewed and approved by the individual institution's IACUC prior to use.
- The specific content of procedures will not be reviewed, approved, or endorsed by the FDP or regulatory agencies.

Working Group



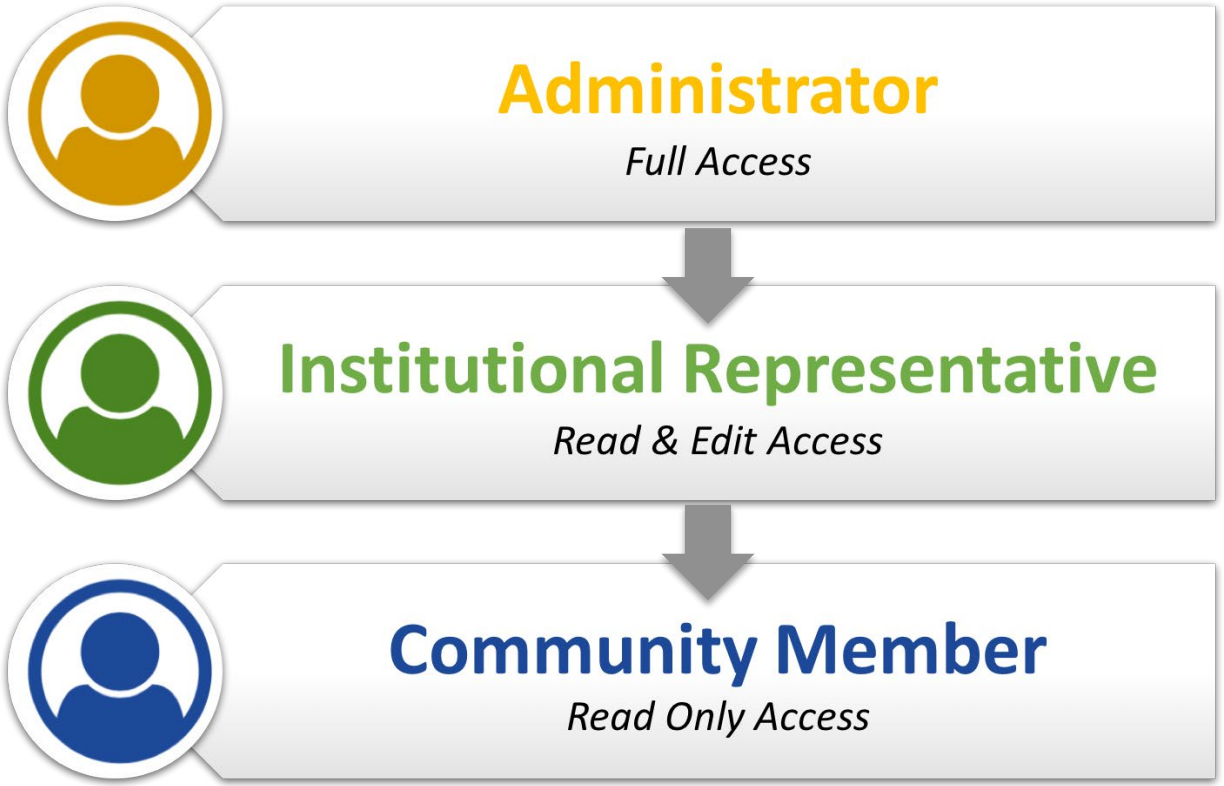
Currently 89 members from 50 institutions

Development Site Demo



PRIM&R PUBLIC RESPONSIBILITY IN MEDICINE AND RESEARCH

Site Access & User Roles

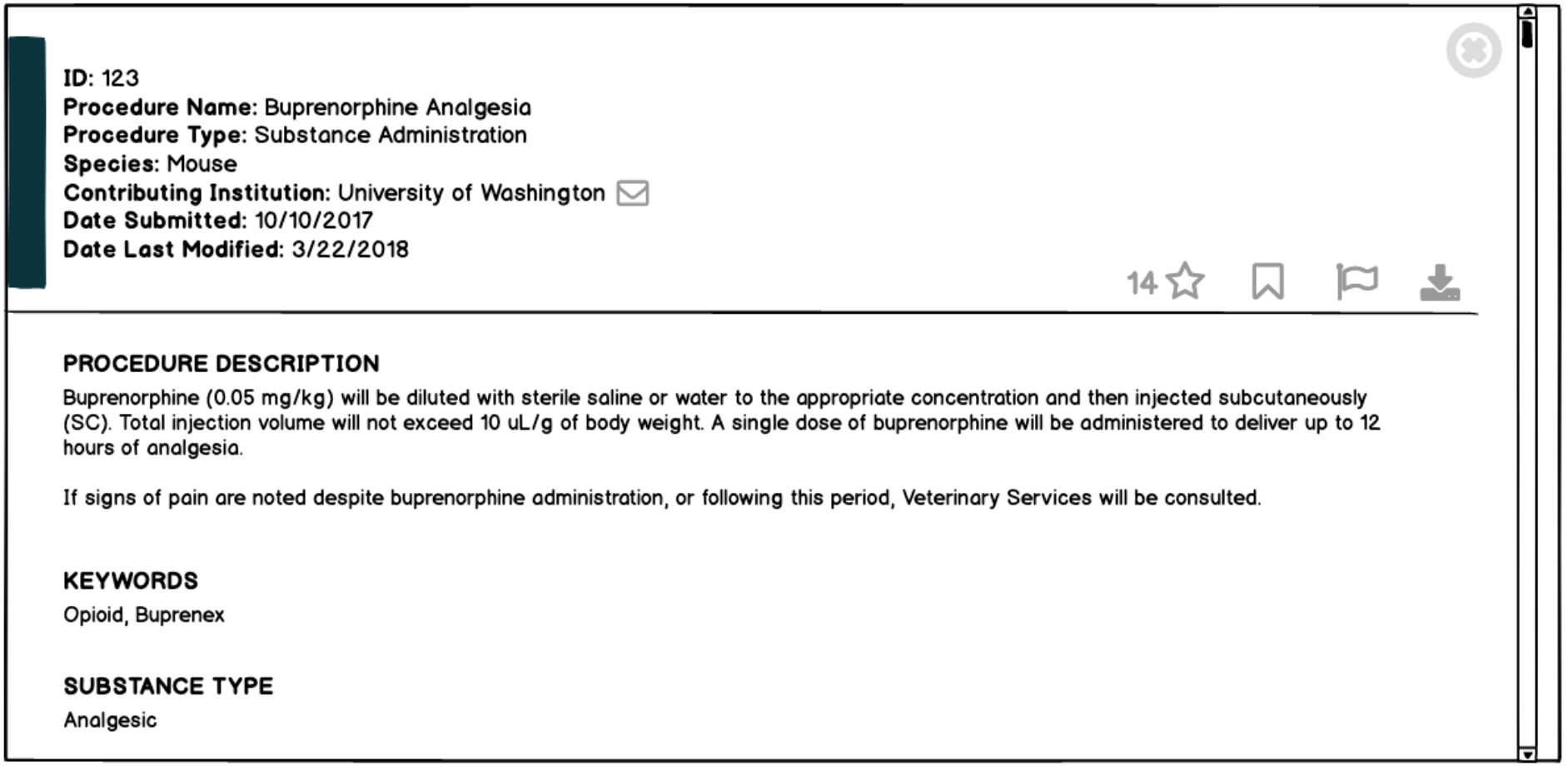


Procedure Activities

Procedure Type Categories

Antibody Production	Behavioral Testing	Blood or Sample Collection
Capture and Trapping	Diet Modification	Euthanasia
Identification and Genotyping	Imaging and Irradiation	Induction of Illness
Substance Administration	Surgery	Other

Example: Buprenorphine Analgesia



ID: 123
Procedure Name: Buprenorphine Analgesia
Procedure Type: Substance Administration
Species: Mouse
Contributing Institution: University of Washington
Date Submitted: 10/10/2017
Date Last Modified: 3/22/2018

14

PROCEDURE DESCRIPTION

Buprenorphine (0.05 mg/kg) will be diluted with sterile saline or water to the appropriate concentration and then injected subcutaneously (SC). Total injection volume will not exceed 10 uL/g of body weight. A single dose of buprenorphine will be administered to deliver up to 12 hours of analgesia.

If signs of pain are noted despite buprenorphine administration, or following this period, Veterinary Services will be consulted.

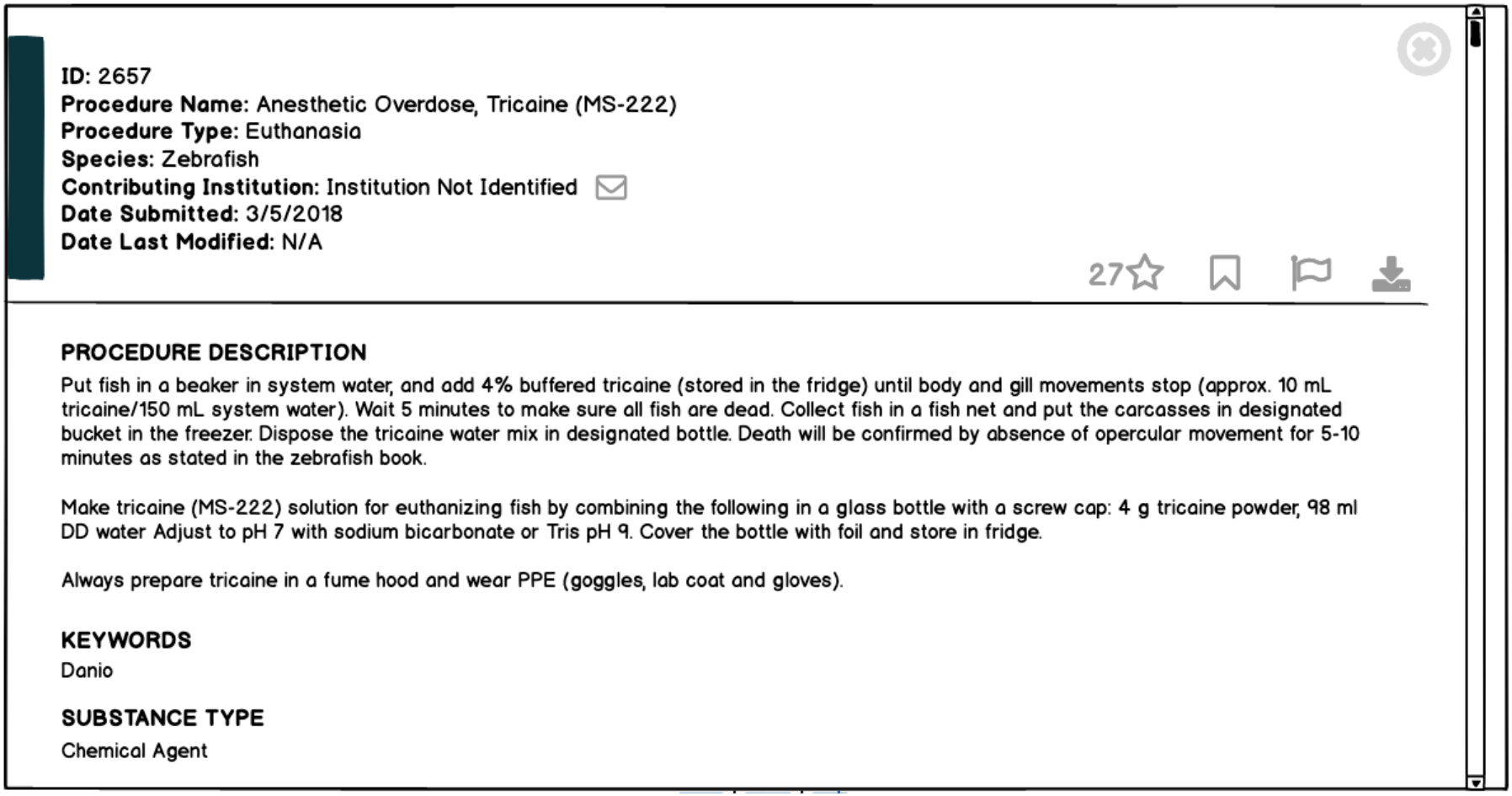
KEYWORDS

Opioid, Buprenex

SUBSTANCE TYPE

Analgesic

Example: Euthanasia



ID: 2657
Procedure Name: Anesthetic Overdose, Tricaine (MS-222)
Procedure Type: Euthanasia
Species: Zebrafish
Contributing Institution: Institution Not Identified
Date Submitted: 3/5/2018
Date Last Modified: N/A

27

PROCEDURE DESCRIPTION

Put fish in a beaker in system water, and add 4% buffered tricaine (stored in the fridge) until body and gill movements stop (approx. 10 mL tricaine/150 mL system water). Wait 5 minutes to make sure all fish are dead. Collect fish in a fish net and put the carcasses in designated bucket in the freezer. Dispose the tricaine water mix in designated bottle. Death will be confirmed by absence of opercular movement for 5-10 minutes as stated in the zebrafish book.

Make tricaine (MS-222) solution for euthanizing fish by combining the following in a glass bottle with a screw cap: 4 g tricaine powder, 98 ml DD water Adjust to pH 7 with sodium bicarbonate or Tris pH 9. Cover the bottle with foil and store in fridge.

Always prepare tricaine in a fume hood and wear PPE (goggles, lab coat and gloves).

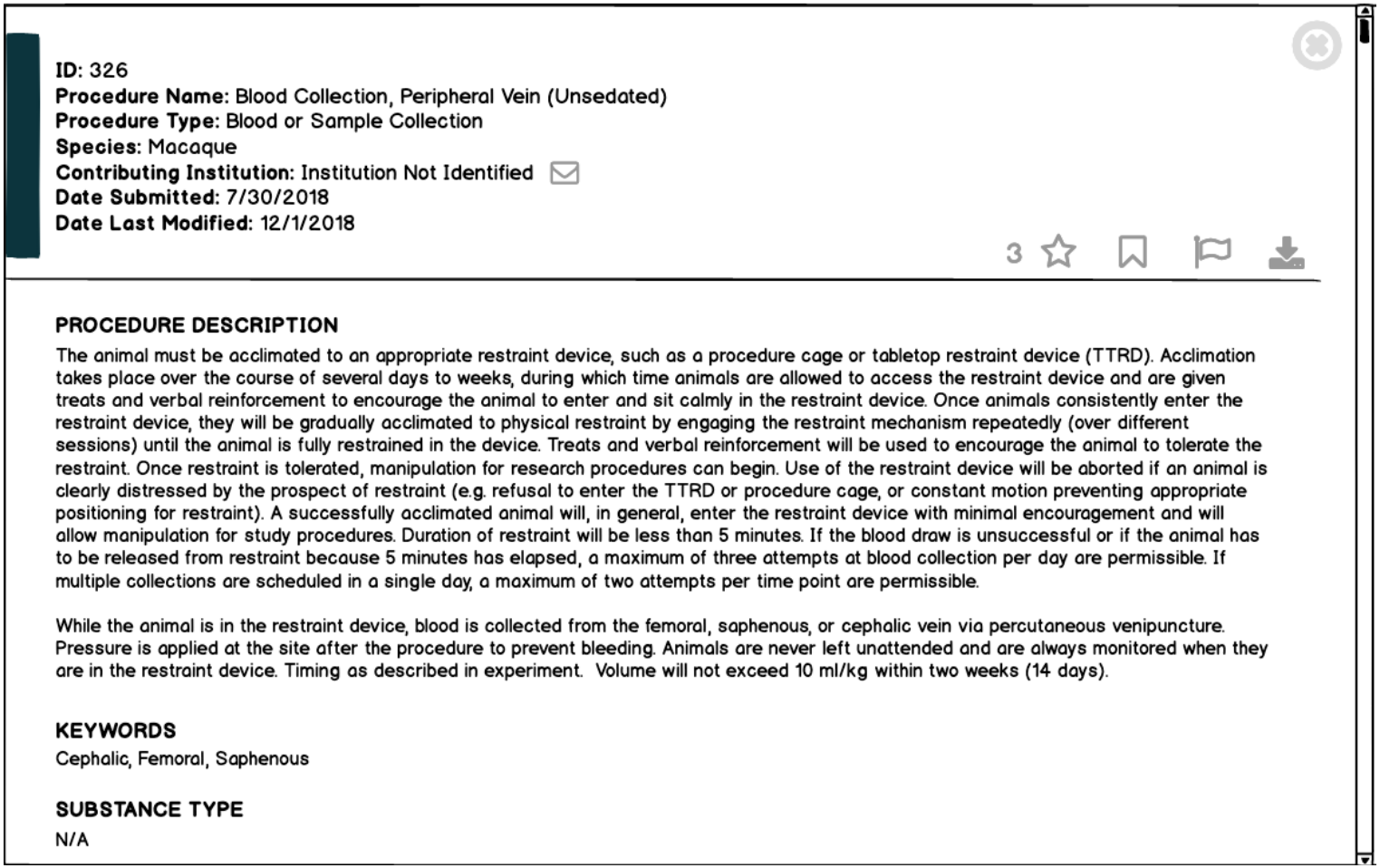
KEYWORDS

Danio

SUBSTANCE TYPE

Chemical Agent

Example: Blood Collection



ID: 326
Procedure Name: Blood Collection, Peripheral Vein (Unsedated)
Procedure Type: Blood or Sample Collection
Species: Macaque
Contributing Institution: Institution Not Identified
Date Submitted: 7/30/2018
Date Last Modified: 12/1/2018

3

PROCEDURE DESCRIPTION

The animal must be acclimated to an appropriate restraint device, such as a procedure cage or tabletop restraint device (TTRD). Acclimation takes place over the course of several days to weeks, during which time animals are allowed to access the restraint device and are given treats and verbal reinforcement to encourage the animal to enter and sit calmly in the restraint device. Once animals consistently enter the restraint device, they will be gradually acclimated to physical restraint by engaging the restraint mechanism repeatedly (over different sessions) until the animal is fully restrained in the device. Treats and verbal reinforcement will be used to encourage the animal to tolerate the restraint. Once restraint is tolerated, manipulation for research procedures can begin. Use of the restraint device will be aborted if an animal is clearly distressed by the prospect of restraint (e.g. refusal to enter the TTRD or procedure cage, or constant motion preventing appropriate positioning for restraint). A successfully acclimated animal will, in general, enter the restraint device with minimal encouragement and will allow manipulation for study procedures. Duration of restraint will be less than 5 minutes. If the blood draw is unsuccessful or if the animal has to be released from restraint because 5 minutes has elapsed, a maximum of three attempts at blood collection per day are permissible. If multiple collections are scheduled in a single day, a maximum of two attempts per time point are permissible.

While the animal is in the restraint device, blood is collected from the femoral, saphenous, or cephalic vein via percutaneous venipuncture. Pressure is applied at the site after the procedure to prevent bleeding. Animals are never left unattended and are always monitored when they are in the restraint device. Timing as described in experiment. Volume will not exceed 10 ml/kg within two weeks (14 days).

KEYWORDS

Cephalic, Femoral, Saphenous

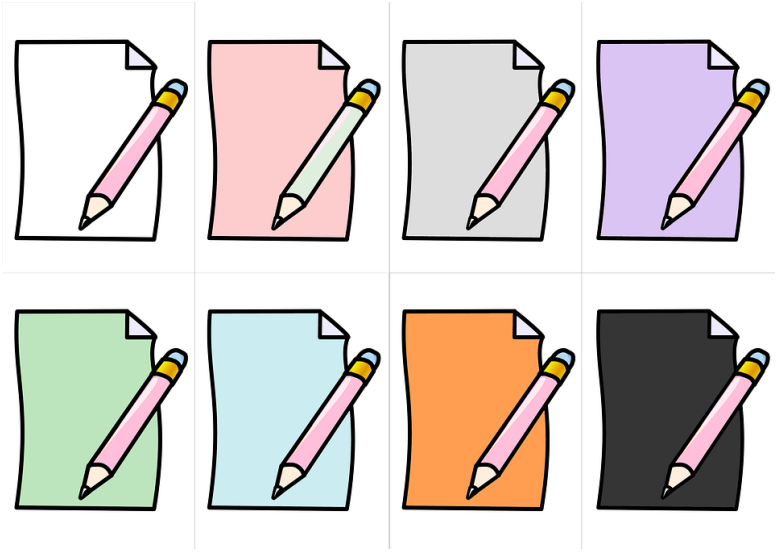
SUBSTANCE TYPE

N/A

How Can My Institution Use CUSP?

Use Cases

- **Something for Everyone**
  - IACUC
  - Veterinarians
  - Researchers
  - Institutional administrators

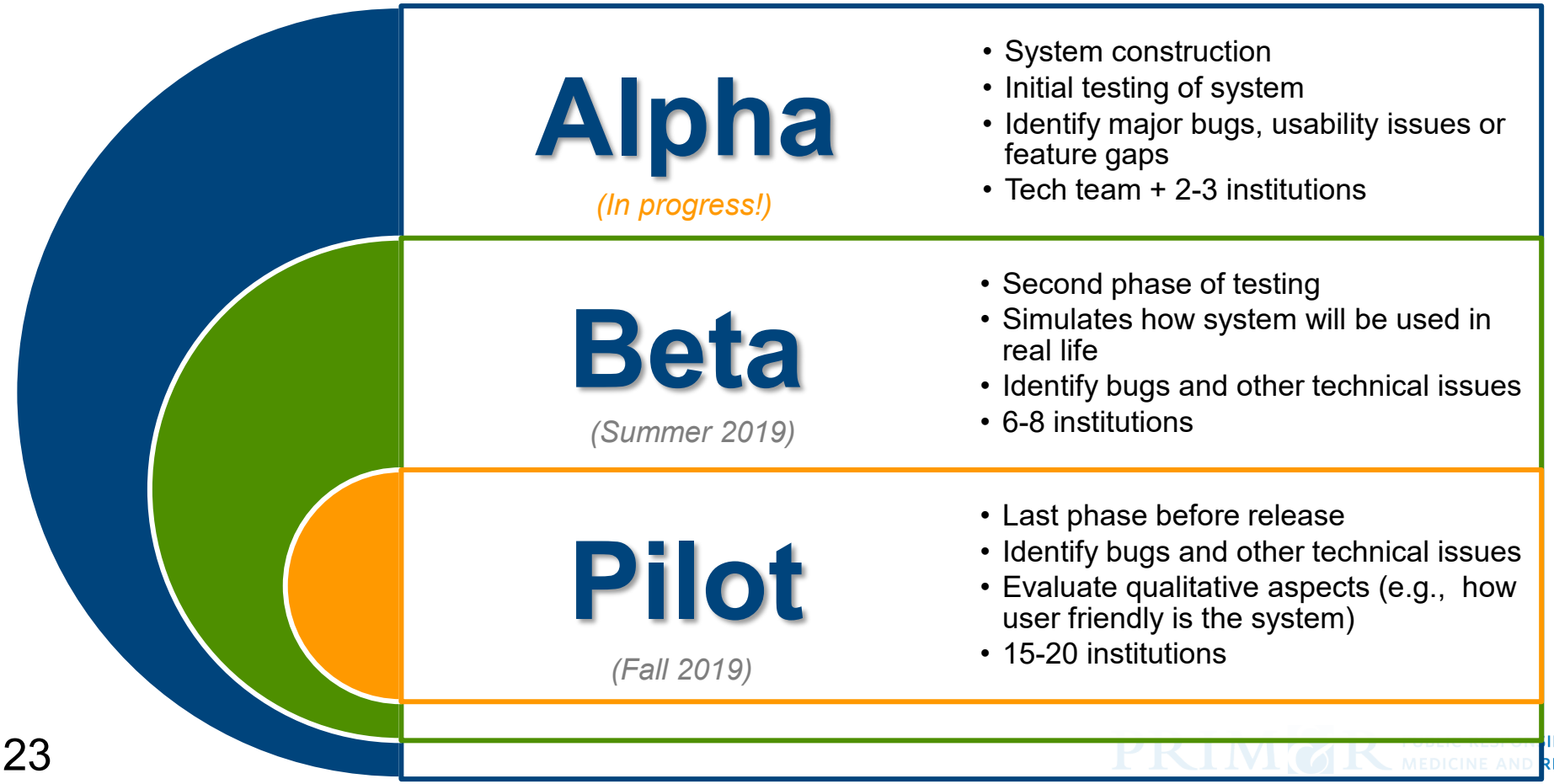


- **Reduction of administrative burden**
  - One place to find and share procedures
  - Focus on methodology
  - Procedures can be incorporated directly into protocols
  - Best practices

What's the current status of CUSP?

CUSP Project Timeline

Strategy for Development Phase



Questions?

Want to chat further?

Email Aubrey Schoenleben (aubreys@uw.edu) or Sally Thompson-Iritani (sti2@uw.edu)

PRIM&R's

2019 IACUC Conference

April 1-3 • Bellevue, WA

and NWABR Regional IACUC/IBC Conference • April 4

Thank you!

Want to chat further?

Email Aubrey Schoenleben (aubreys@uw.edu) or Sally Thompson-Iritani (sti2@uw.edu)

PRIM&R's
2019 IACUC Conference
April 1-3 • Bellevue, WA
and NWABR Regional IACUC/IBC Conference • April 4

Data Organization: Parent/Child Model

Example of when to Create a Variation (Child) Procedure or a New Procedure	
Create a Variation Procedure	**Create a New Procedure**
Same procedure, same species, different steps/dosages/timing/other info The system has an procedure for isoflurane anesthesia in mice, but your institution's procedure for isoflurane anesthesia in mice uses different steps, dosages, timing, and/or other details	**Same procedure, different species** Your institution has a procedure for isoflurane anesthesia in rats and the system does not already have any procedure for isoflurane anesthesia in rats **Same species, different procedure** Your institution has a procedure for Ketamine/Xylazine anesthesia in mice and the system does not already have a procedure for Ketamine/Xylazine anesthesia in mice
Same procedure, same species, different steps/dosages/timing/other info The system has an procedure for ovariectomy surgery in mice, but your institution's procedure for ovariectomy surgery in mice uses different steps, dosages, anesthetic/analgesic drugs, timing, and/or other details	**Same procedure, different species** Your institution has a procedure for ovariectomy surgery in rats and the system does not already have any procedure for isoflurane anesthesia in rats **Same species, different procedure** Your institution has a procedure for an osmotic pump surgery in mice and the system does not already have any procedure for isoflurane anesthesia in rats
Same procedure, same species, different steps/dosages/timing/other info The system has a procedure for administering BrdU in rabbits via intraperitoneal injection, but your institution's procedure for delivering BrdU in rabbits uses different steps, dosages, routes (e.g., in drinking water, or injected locally into the brain ventricles), timing, and/or other details	**Same procedure, different species** Your institution has a procedure for BrdU administration in mice and the system does not already have any procedure for BrdU procedure in mice **Same species, different procedure** Your institution has a procedure for administering LPS in rabbits and the system does not already have any procedure for administering LPS in rabbits

Substance Types

Adjuvant	Carcinogen	Parasite
Analgesic	Cell, Cell Line, or Tissue	Pesticide
Anesthetic	Chemical Agent	Prion
Antibiotic	Chemotherapeutic	Radiological Agent
Antibody	Cytokine	Reproductive Hazard/Teratogen
Antiemetic	DNA/RNA	Toxin
Antifungal	Fungi	Tracer
Antimicrobial	Hormonal Regulator	Vaccine
Antiparasitic	Immuno-suppressant	Viral Vector
Antiviral	Infectious Agent	Virus
Bacteria	Nanoparticle	Other
Biological Agent	Nutritional supplement	None / N/A
Blood or Body Fluids	Paralytic Agent	

Data Import & Export

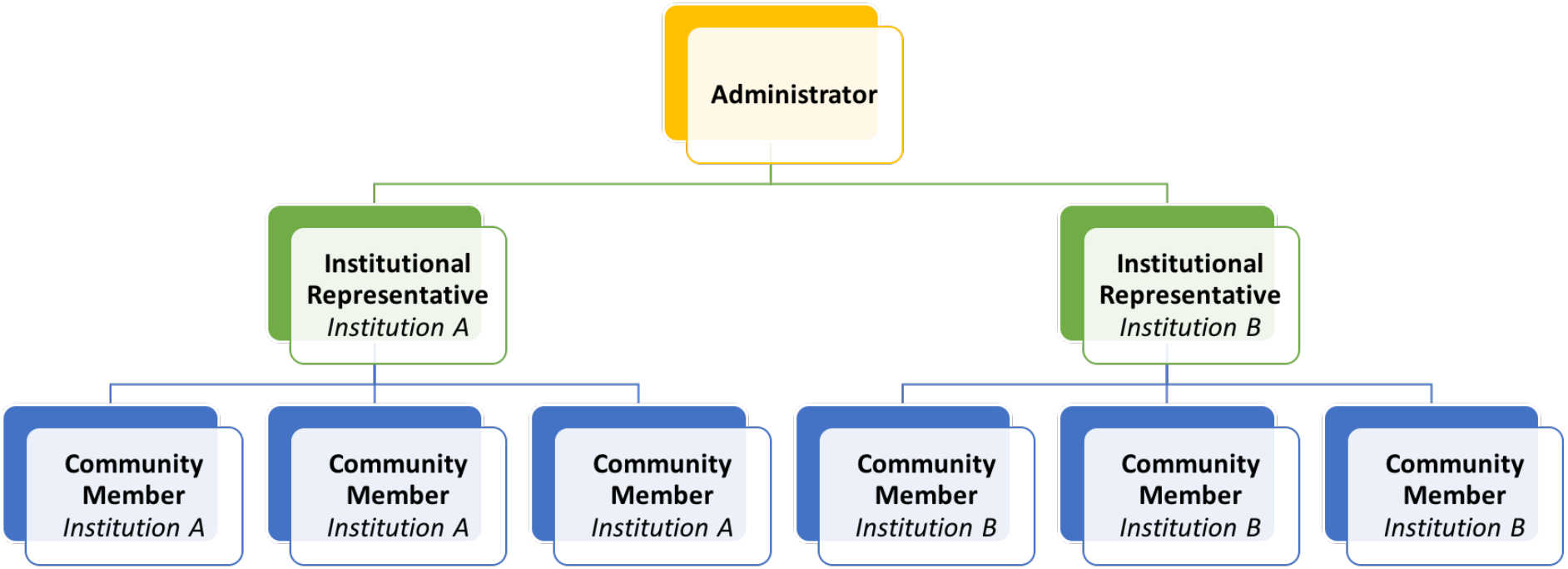
Low Tech
Manual
CSV (Excel)

VS

High Tech
JSON
API

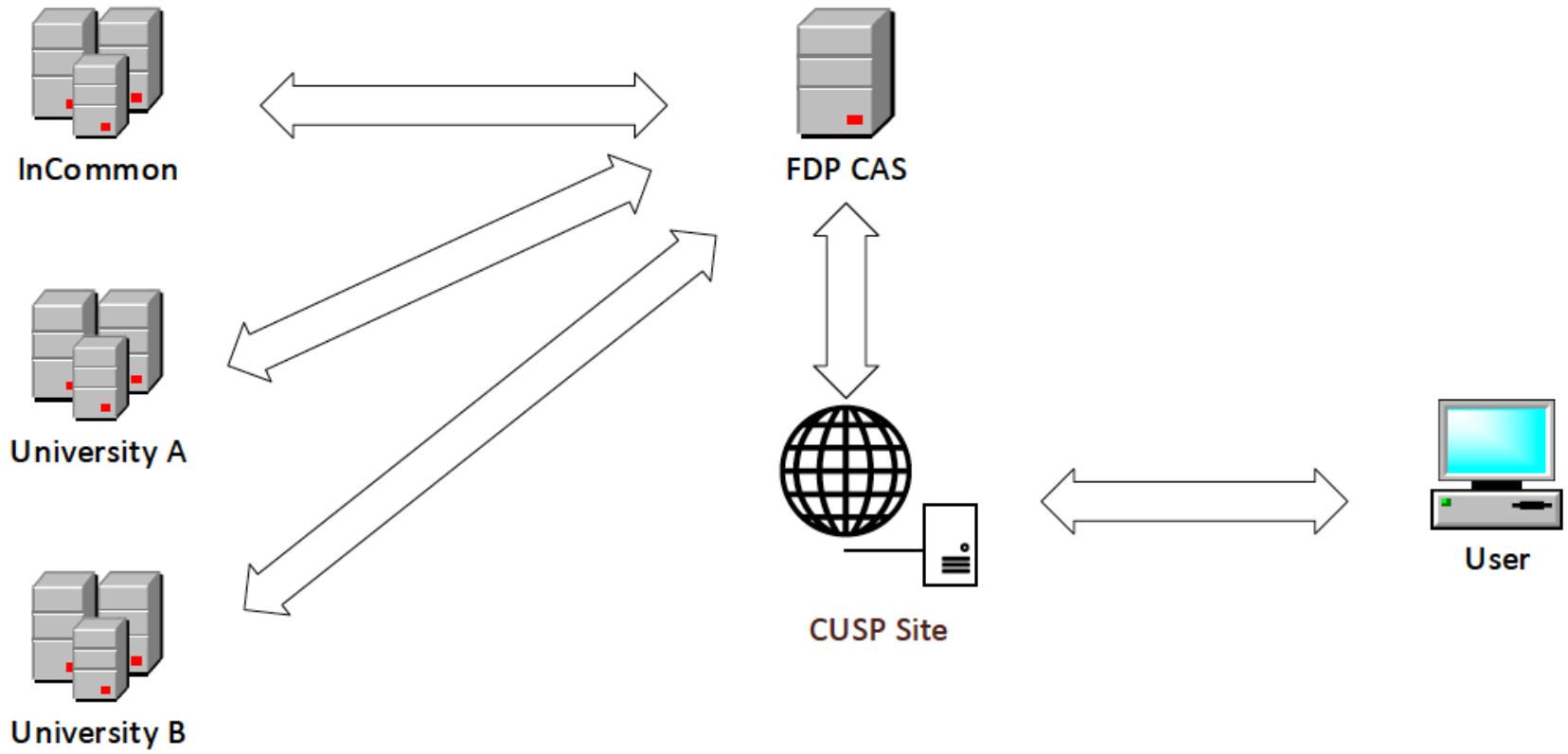
Image Source: www.flrunning.com

Site Access & User Roles



PRIM&R PUBLIC RESPONSIBILITY IN MEDICINE AND RESEARCH

Single Sign On: Central Authentication Service (CAS)



Development Phase: Tentative Timeline