

# Proton Radiography (pRad) User Manual

August 2019

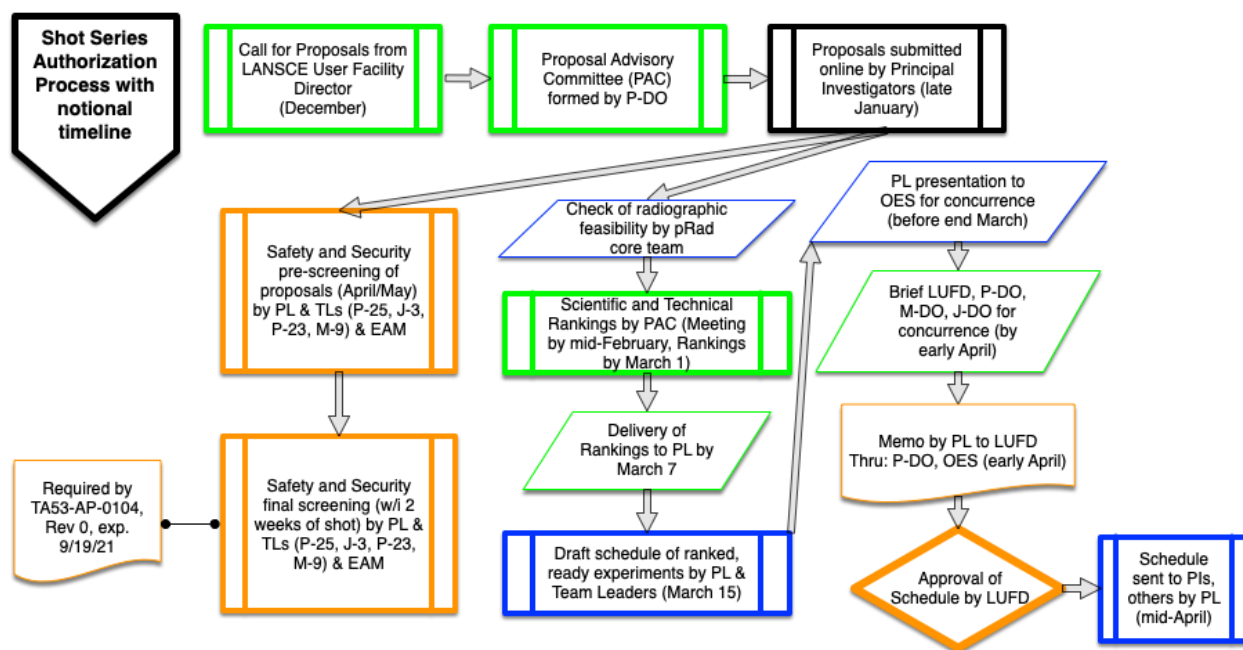
## Welcome from the pRad Project Leader

Thank you for proposing experiments using proton radiography at LANSCE. We are looking forward to working with you. This manual serves as an introduction to the pRad team. We will work closely with you technically to give you the best experimental data possible. Please email me or any of the team members if you need help, have questions, or have suggestions. Our contact info is on pages 3-4. -Kathy Prestridge



## Proposal Process & Timeline

The pRad proposal process calls for proposals early in the calendar year that will be scheduled for beam time in the next fiscal year. For example, proposals submitted in January 2020, if approved for experiments, will be scheduled for October-December 2020 or late June-September 2021. The following flow chart shows the **notional timeline** for approval and scheduling of experiments.



When you receive your experiment scheduled dates, you will also receive feedback from the PAC review process, the name of your technical point of contact, and instructions regarding training and registration. Your POC should be in touch with you well in advance of your shots to better understand safety and security issues and the experimental goals. The POC will answer questions about radiographic and other diagnostic capabilities and help you make a determination of what diagnostics you will use on your experiment.



The facility operates within an authorization basis that has constraints on materials, explosives, and other hazardous activities. The experimental area operations under an Integrated Work Document (IWD) that outlines the hazards of performing work. The assessment with your POC will determine whether or not your experiments fall within these existing controls. For experiments outside of the existing safety controls that the PAC has determined are a high priority, there may be significant lead time associated with securing approvals to perform the experiments at LANSCE. So, if you have programmatic deadlines, please plan ahead!

## Registration and user agreement

All users who wish to be present for experiments must register with LANSCE so that we can track your training and make sure you will be allowed at Area C. The pRad user office will send you an email asking you to register (<https://lems.lanl.gov>). Make sure you complete this step, since this is how you are assigned your required training.

External users (non-LANL employees) must have a valid User Agreement in place. The Non-proprietary (NPUA) or Proprietary User Agreement (PUA) needs to be established between institution of the user and LANSCE. (<https://lansce.lanl.gov/users/become-a-user/user-agreements.php>).

## Foreign Nationals

If any visitors are not US citizens, a Foreign Visit Request must be submitted and approved for access to LANL. The User Office will submit the request with the information collected on the online registration form (<https://lems.lanl.gov>). Approvals of Foreign Visit Requests take up to 60 days from submission, so please work with the user office as soon as possible.

## Traveling to Los Alamos

Maps and directions to the Lab are at <https://www.lanl.gov/resources/maps.php>. A map of LANSCE is attached to the end of this manual.

## Required Training for Users

To have unescorted access to the pRad experimental area, you are required to take online training available via UTrain at the LANSCE training office. This training is assigned to you via the worker qualification and authorization system (WQAS) plan 5584.

Some users may require access when the area is a Limited Area (requiring a security clearance). In that case, WQAS 11091 pRad TLA Unescorted Access will be assigned to you for additional training.

**If you expect to perform moderate hazard work at Area C**, please speak with your technical POC at least 3 months in advance of your shot date, since extensive classroom training is required for work on the P-25 pRad IWD. We expect that most users will be performing only low-hazard work in the experimental area.



## What to Expect on Shot Day

To ensure that you have the proper training, required dosimetry, and safety briefing, follow the instructions on the attached “Green Sheet.” When you arrive at the Counting House, please report directly to the Experimenter in Charge, who will complete your briefing and give you a status on the day’s shots. You will be working with the EIC to finalize the timing for your shot. Other team members may ask you questions regarding diagnostic timing, placement, shot alignment, etc.

## Team Contact Info

### Project Leader

Kathy Prestridge – [kpp@lanl.gov](mailto:kpp@lanl.gov)

### Team Leaders

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Frank Cherne – [cherne@lanl.gov](mailto:cherne@lanl.gov)

Frans Trouw – [trouw@lanl.gov](mailto:trouw@lanl.gov)

### Experimenters in Charge (EICs)

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### Tech Team

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William Meijer – [meijer@lanl.gov](mailto:meijer@lanl.gov)

### J-3 (Vessel, High Explosives)

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### Security

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### Students

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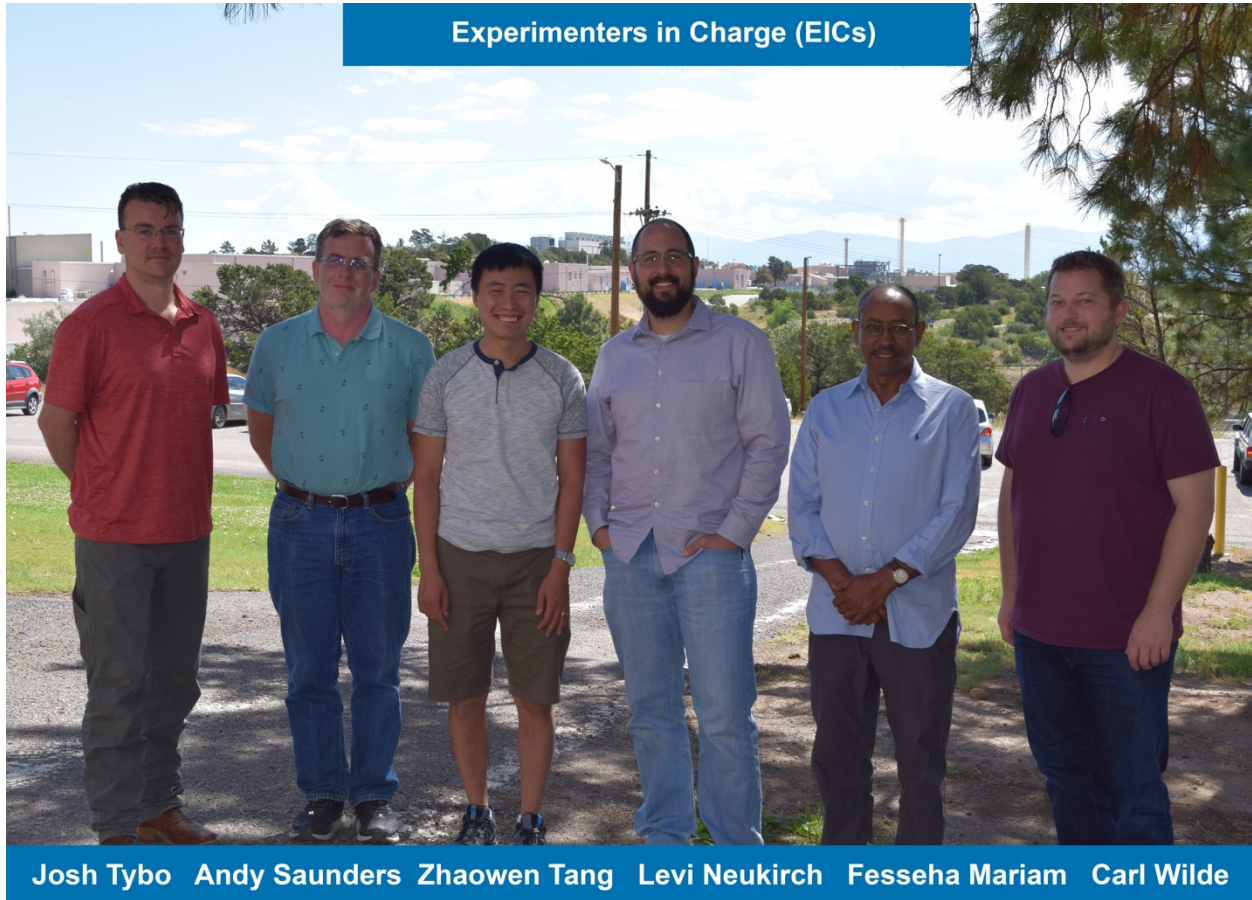
Ivan Balakirev – [ivanb@lanl.gov](mailto:ivanb@lanl.gov)

## Exit Process

The pRad team needs your feedback for continuous improvement, and also as an NNSA user facility. So, please complete the user survey after your experiments! You will receive an email from the user office with the link.

## Experiment Report

You will receive a link to a report template (one pager with a quick highlight of what you accomplished). The LANSCE User Facility Director will use this to highlight pRad activities to our sponsors. Your completion of this brief report is very helpful to us. Thank you!





**Team Leaders**



**Levi Neukirch (P-25) Mary Sandstrom (J-3) Amy Tainter (P-25) Frank Cherne (M-9) Frans Trouw (P-23)**

**DAQ Support**



**Jason Allison**

**Tamsen Schurman**

**Frans Trouw**



**Diagnostics**



**Wil Sanders   Levi Neukirch   Dale Tupa   Amy Tainter**

**High Explosives Operations (J-3)**



**Matthew L. Davis   Richard Uliano   John Echave   Ryan Vlietstra  
Mary Sandstrom   Devin Cardon   Pamela Scott   Jason DeVargas**



Camera Team



Jason Allison

Carl Wilde

Josh Tybo

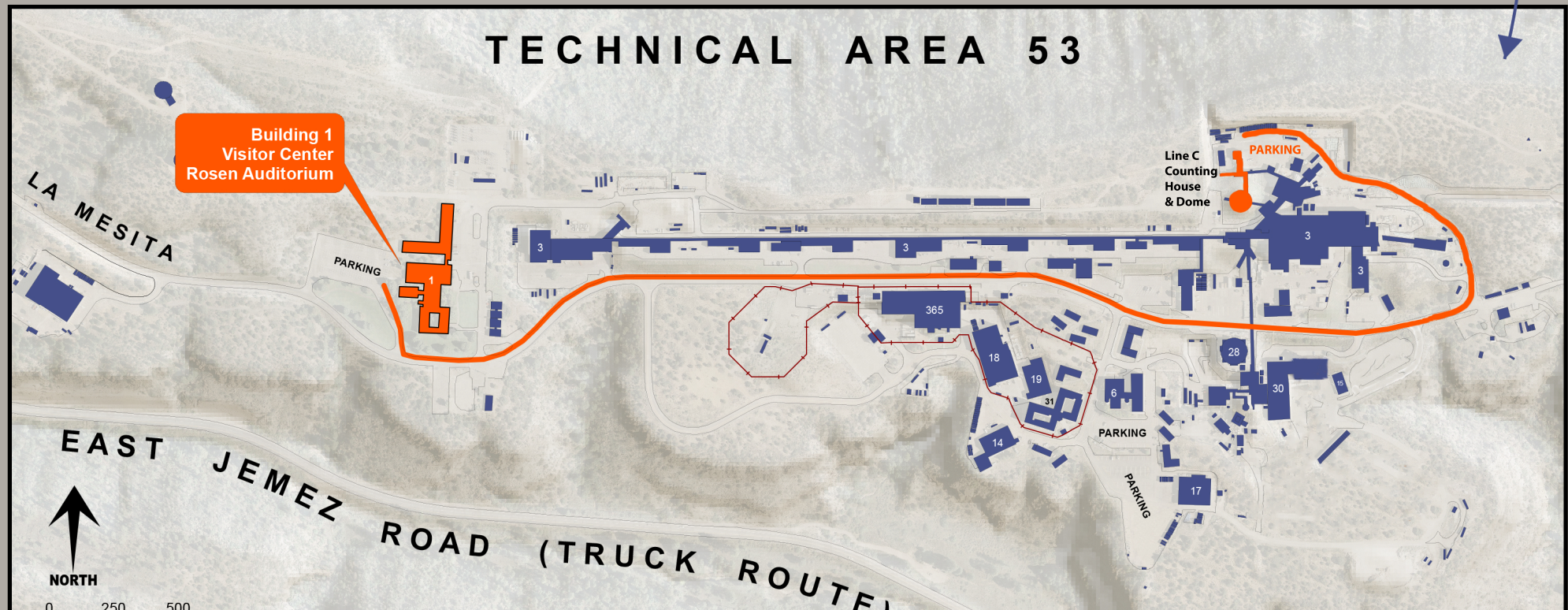
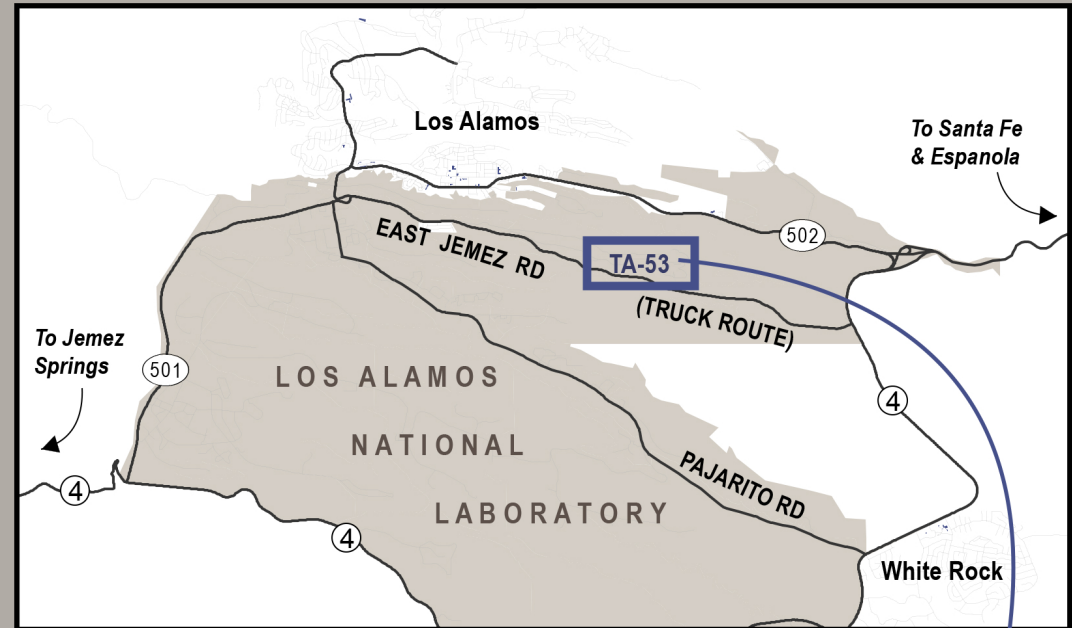
Students



Anthony Sanchez Nicholas Lovato  
Emily Rivera, Rayann Mora, Alexis Trujillo



# LANSCCE Los Alamos Neutron Science Center Technical Area 53





## User/PI “Green Sheet” for Area C

- ☐ Pick up your badge at the LANL Badge Office, TA 3 Building 261 if you are an external user or do not already have a DOE Badge.
- ☐ Pick up dosimetry at the LANSCE Visitor Center, TA 53 Building 1 Lobby if you do not already have a TLD and Lemon Badge.
- ☐ Take the following courses at the LANSCE Training Office TA 53 Building 1 Room B113 (external users only, internal users can complete training in UTrain):

Course Name	Course ID	Completed
TA-53 Facility Radiation Protection Requirements (FRPR)	21395	
General Employee Radiological Training	3664	
TA-53 Primary Beam Area Access (PBAA)	40394	
LANSCE: Area C Hazard Overview for pRad Ops	33804	
TA-53 Employees/Residents	201	
pRad Required Equipment Review Training	45956	
TA-53, MPF Sectors N and P Building Emergency Plan (available on <a href="http://extrain.lanl.gov">extrain.lanl.gov</a> )	21581	

- ☐ Report the pRad User office (P-25 Group Office, TA 53-1-A142), where Monica Trujillo or Maggie Caballero will confirm that you have completed the courses above and check you in.
- ☐ Report to Area C. Upon arrival, check in with the Experimenter in Charge. The EIC will brief you regarding the hazards in the area.

Briefing performed by: \_\_\_\_\_

EIC Signature
Z#
Date

Visitor: I understand the hazards in Area C, and I will follow the instructions of the EIC and authorized workers in the area.

\_\_\_\_\_  
User Signature Date

*This form is valid for the 2019 run cycle.*