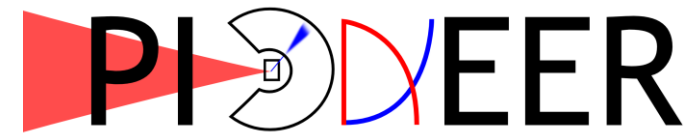


PIONEER Collaboration Meeting: Welcome and Goals

David Hertzog; University of Washington



Current Collaborators (we are *smaller* than it might look):

A. Adelman,¹ W. Altmannshofer,² S. Ban,³ O. Beesley,⁴ A. Bolotnikov,⁵ S. Braun,⁴ T. Brunner,⁶ D. Bryman,^{7,8} Q. Buat,⁴ L. Caminada,¹ J. Carlton,⁹ S. Chen,¹⁰ M. Chiu,⁵ V. Cirigliano,⁴ S. Corrodi,¹¹ A. Crivellin,^{1,12} S. Cuen-Rochin,¹³ J. Datta,¹⁴ B. Davis-Purcell,⁸ K. Dehmelt,¹⁴ A. Deshpande,^{14,5} A. Di Canto,⁵ L. Doria,¹⁵ J. Dror,¹⁶ P. Fischer,¹⁷ S. Foster,⁹ K. Frahm,¹⁷ P. Garg,¹⁴ G. Giacomini,⁵ L. Gibbons,¹⁸ C. Glaser,¹⁹ D. Goeldi,¹⁷ S. Gori,² T. Gorringer,⁹ C. Hamilton,⁸ S. Heinekamp,^{1,17} C. Hempel,⁸ D. Hertzog,⁴ S. Hochrein,¹⁷ M. Hoferichter,²⁰ S. Ito,²¹ T. Iwamoto,³ P. Kammel,⁴ E. Klemets,^{8,7} K. Labe,¹⁸ J. Labounty,⁴ U. Langenegger,¹ Y. Li,⁵ C. Malbrunot,^{8,6} A. Matsushita,³ S. M. Mazza,² S. Mehrotra,¹⁴ S. Mihara,²² R. Mischke,⁸ A. Molnar,² T. Mori,³ T. Numa,⁸ W. Ootani,³ J. Ott,² K. Pachal,⁸ D. Pocanic,¹⁹ X. Qian,⁵ D. Ries,¹ R. Roehnel,⁴ T. Rostomyan,¹ B. Schumm,² P. Schwendimann,⁴ A. Seiden,² A. Sher,⁸ R. Shrock,¹⁴ A. Soter,¹⁷ T. Sullivan,²³ E. Swanson,⁴ V. Tishchenko,⁵ A. Tricoli,⁵ T. Tsang,⁵ B. Velghe,⁸ V. Wong,⁸ M. Worcester,⁵ E. Worcester,⁵ C. Zhang,⁵ and Y. Zhang⁵

¹Paul Scherrer Institute ²University of California Santa Cruz ³The University of Tokyo ⁴University of Washington ⁵Brookhaven National Laboratory ⁶McGill University ⁷University of British Columbia ⁸TRIUMF ⁹University of Kentucky ¹⁰Tsinghua University ¹¹Argonne National Laboratory ¹²University Zurich ¹³Tecnologico de Monterrey ¹⁴Stony Brook University ¹⁵Johannes Gutenberg University ¹⁶University of Florida ¹⁷ETH Zurich ¹⁸Cornell University ¹⁹University of Virginia ²⁰University of Bern ²¹Kitakyushu College ²²KEK ²³University of Victoria

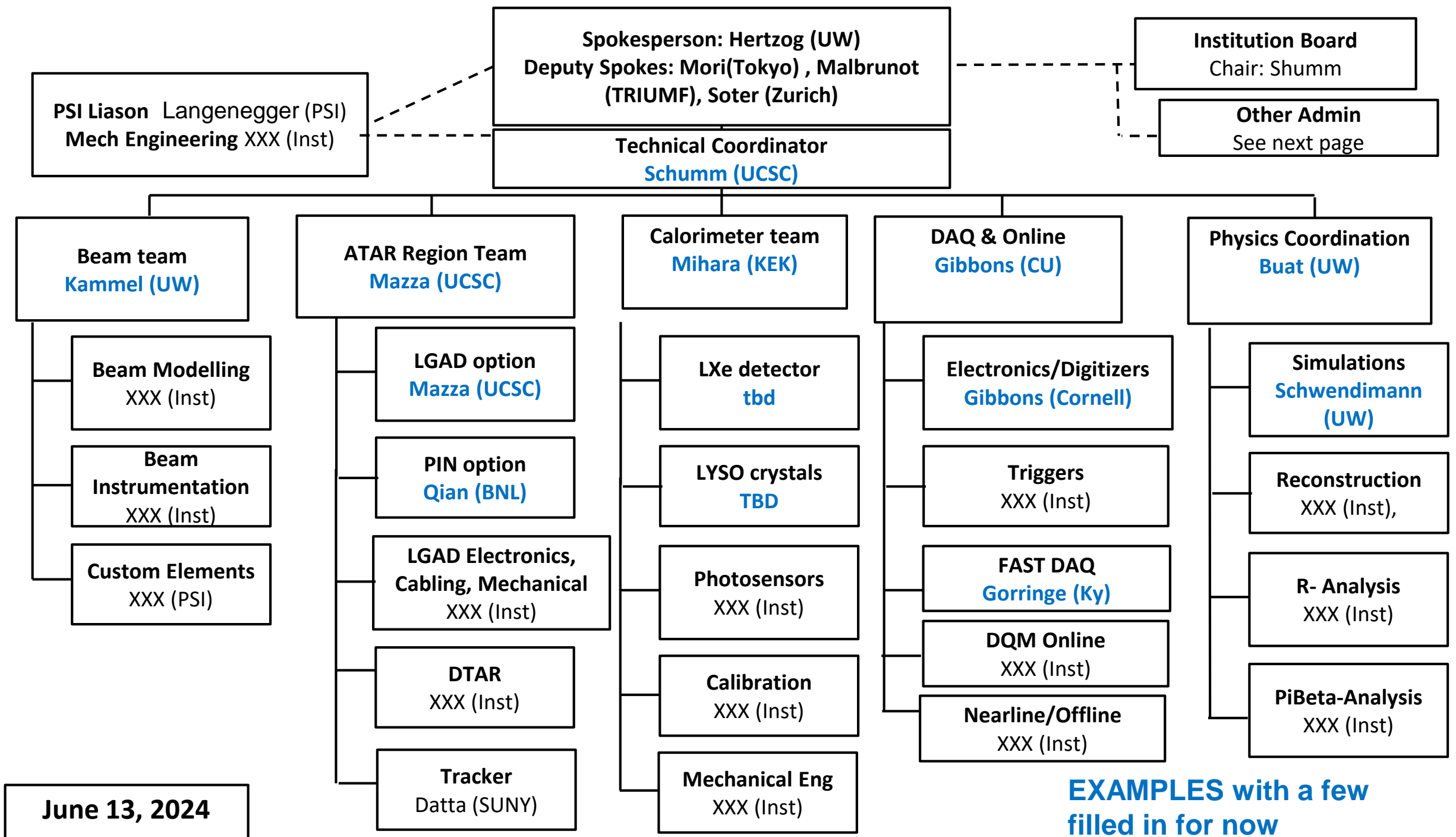
(Dated: January 22, 2024)

Organization

- Bylaws
- Organization Chart structure (Spokes, some teams in place)
- Institutional Board (every institute)
- Technical Board (just starting)
- DEI Committee
- Onboarding new collaborators (launching)

Documentation

- DocDb document server
- Elogs for each effort
- Twiki page to steer
- Webpage



June 13, 2024

EXAMPLES with a few filled in for now

PIONEER approved at PSI addressing 3 Physics Questions

10 x
Improvements
in precision

- Lepton Flavor Universality
- Cabibbo Angle Anomaly
- Sterile neutrinos and exotic decays

Jan. 2022 **Approved with high priority @ PSI**

<https://arxiv.org/abs/2203.01981>

PSI Ring Cyclotron Proposal R-22-01.1 PIONEER: Studies of Rare Pion Decays

W. Altmannhofer,¹ H. Binney,² E. Blucher,³ D. Bryman,^{4,5} L. Caminada,⁶
S. Chen,⁷ V. Cirigliano,⁸ S. Corrodi,⁹ A. Crivellin,^{6,10,11} S. Cuen-Rochin,¹²
A. DiCanto,¹³ L. Doria,¹⁴ A. Gaponenko,¹⁵ A. Garcia,² L. Gibbons,¹⁶ C. Glaser,¹⁷
M. Escobar Godoy,¹ D. Göldi,¹⁸ S. Gori,¹ T. Gorringer,¹⁹ D. Hertzog,² Z. Hodge,²
M. Hoferichter,²⁰ S. Ito,²¹ T. Iwamoto,²² P. Kammel,² B. Kiburg,¹⁵ K. Labe,¹⁶
J. LaBounty,² U. Langenegger,⁶ C. Malbrunot,⁵ S.M. Mazza,¹ S. Mihara,²¹ R. Mischke,⁵
T. Mori,²² J. Mott,¹⁵ T. Numao,⁵ W. Ootani,²² J. Ott,¹ K. Pachal,⁵ C. Polly,¹⁵
D. Počanić,¹⁷ X. Qian,¹³ D. Ries,²³ R. Roehmlt,² B. Schumm,¹ P. Schwendimann,²
A. Seiden,¹ A. Sher,⁵ R. Shrock,²⁴ A. Soter,¹⁸ T. Sullivan,²⁵ M. Tarka,¹ V. Tischenko,¹³
A. Tricoli,¹³ B. Velghe,⁵ V. Wong,⁵ E. Worcester,¹² M. Worcester,²⁶ and C. Zhang¹²

¹Santa Cruz Institute for Particle Physics (SCIPP),

University of California Santa Cruz, 1156 High street, Santa Cruz (CA) 95064 USA

²Department of Physics, University of Washington,

Box 351560, Seattle, Washington 98195 USA

³Enrico Fermi Institute and Department of Physics,

University of Chicago, 5720 South Ellis Avenue, Chicago, IL 60637 USA

⁴Department of Physics & Astronomy,

University of British Columbia 6224 Agricultural Road, Vancouver V6T 1Z1 Canada

⁵TRIUMF, 4004 Wesbrook Mall, Vancouver V6T 2A3 Canada

⁶Paul Scherrer Institute, 5232 Villigen PSI Switzerland

⁷Department of Engineering Physics, Tsinghua University,

30 Shuangqing Road, Haidian District, Beijing, 100084 P. R. China

⁸Institute for Nuclear Theory, University of Washington, Seattle WA 98195-1550 USA

⁹Argonne National Laboratory, High Energy Physics Division,

9700 S Cass Ave, Lemont, IL 60439 USA

¹⁰Physik-Institut University of Zurich Winterthurerstrasse 190 CH-8057 Zurich Switzerland

¹¹Division of Theoretical Physics, CERN,

Espl. des Particules 1, 1211 Meyrin Switzerland

¹²Tecnológico de Monterrey, School of Engineering and Sciences,

Bldv. Pedro Infante 3773 Pte, Culiacan 80100 Mexico

¹³Physics Department, Brookhaven National Laboratory, Upton, NY, 11973 USA

¹⁴PRISMA* Cluster of Excellence and Johannes Gutenberg Universität Mainz,

Institut für Kernphysik, J.-J.-Becher-Weg 45, 55128 Mainz Germany

¹⁵Fermi National Accelerator Laboratory (FNAL),

Snowmass 2022 White Paper

Testing Lepton Flavor Universality and CKM Unitarity with Rare
Pion Decays in the PIONEER experiment

W. Altmannhofer,¹ H. Binney,² E. Blucher,³ D. Bryman,^{4,5} L. Caminada,⁶
S. Chen,⁷ V. Cirigliano,⁸ S. Corrodi,⁹ A. Crivellin,^{6,10,11} S. Cuen-Rochin,¹²
A. DiCanto,¹³ L. Doria,¹⁴ A. Gaponenko,¹⁵ A. Garcia,² L. Gibbons,¹⁶ C. Glaser,¹⁷
M. Escobar Godoy,¹ D. Göldi,¹⁸ S. Gori,¹ T. Gorringer,¹⁹ D. Hertzog,² Z. Hodge,²
M. Hoferichter,²⁰ S. Ito,²¹ T. Iwamoto,²² P. Kammel,² B. Kiburg,¹⁵ K. Labe,¹⁶
J. LaBounty,² U. Langenegger,⁶ C. Malbrunot,⁵ S.M. Mazza,¹ S. Mihara,²¹ R. Mischke,⁵
T. Mori,²² J. Mott,¹⁵ T. Numao,⁵ W. Ootani,²² J. Ott,¹ K. Pachal,⁵ C. Polly,¹⁵
D. Počanić,¹⁷ X. Qian,¹³ D. Ries,²³ R. Roehmlt,² B. Schumm,¹ P. Schwendimann,²
A. Seiden,¹ A. Sher,⁵ R. Shrock,²⁴ A. Soter,¹⁸ T. Sullivan,²⁵ M. Tarka,¹ V. Tischenko,¹³
A. Tricoli,¹³ B. Velghe,⁵ V. Wong,⁵ E. Worcester,¹² M. Worcester,²⁶ and C. Zhang¹²

¹Santa Cruz Institute for Particle Physics (SCIPP),

University of California Santa Cruz, 1156 High street, Santa Cruz (CA) 95064 USA

²Department of Physics, University of Washington,

Box 351560, Seattle, Washington 98195 USA

³Enrico Fermi Institute and Department of Physics,

University of Chicago, 5720 South Ellis Avenue, Chicago, IL 60637 USA

⁴Department of Physics & Astronomy,

University of British Columbia 6224 Agricultural Road, Vancouver V6T 1Z1 Canada

⁵TRIUMF, 4004 Wesbrook Mall, Vancouver V6T 2A3 Canada

⁶Paul Scherrer Institute, 5232 Villigen PSI Switzerland

⁷Department of Engineering Physics, Tsinghua University,

30 Shuangqing Road, Haidian District, Beijing, 100084 P. R. China

⁸Institute for Nuclear Theory, University of Washington, Seattle WA 98195-1550 USA

⁹Argonne National Laboratory, High Energy Physics Division,

9700 S Cass Ave, Lemont, IL 60439 USA

¹⁰Physik-Institut University of Zurich Winterthurerstrasse 190 CH-8057 Zurich Switzerland

¹¹Division of Theoretical Physics, CERN,

Espl. des Particules 1, 1211 Meyrin Switzerland

¹²Tecnológico de Monterrey, School of Engineering and Sciences,

Bldv. Pedro Infante 3773 Pte, Culiacan 80100 Mexico

¹³Physics Department, Brookhaven National Laboratory, Upton, NY, 11973 USA

¹⁴PRISMA* Cluster of Excellence and Johannes Gutenberg Universität Mainz,

Institut für Kernphysik, J.-J.-Becher-Weg 45, 55128 Mainz Germany

¹⁵Fermi National Accelerator Laboratory (FNAL),

P.O. Box 500, Batavia IL 60510-5011 USA

PSI Progress Report 2023

R-22-01.1 PIONEER Progress Report

W. Altmannhofer,¹ O. Besley,² E. Blucher,³ S. Braum,² D. Bryman,^{4,5} Q. Buat,² L. Caminada,⁶
S. Chen,⁷ V. Cirigliano,⁸ S. Corrodi,⁹ A. Crivellin,^{6,9} S. Cuen-Rochin,¹⁰ J. Datta,¹¹ K. Dehmelt,¹¹
A. Deshpande,^{11,12} A. Di Canto,¹² L. Doria,¹³ J. Dror,¹ M. Escobar Godoy,¹ A. Gaponenko,¹⁴ A. Garcia,²
P. Garg,¹¹ L. Gibbons,¹⁵ C. Glaser,¹⁶ D. Göldi,¹⁷ S. Gori,¹ T. Gorringer,¹⁸ D. Hertzog,² M. Hoferichter,¹⁹
S. Ito,²⁰ T. Iwamoto,²¹ P. Kammel,² B. Kiburg,¹⁴ K. Labe,¹⁵ J. Labounty,² U. Langenegger,⁶ C. Malbrunot,⁵
A. Matsushita,²¹ S.M. Mazza,¹ S. Mehrotra,¹¹ S. Mihara,²⁰ R. Mischke,⁵ A. Molnar,¹ T. Mori,²¹ J. Mott,¹⁴
T. Numao,⁵ W. Ootani,²¹ J. Ott,¹ K. Pachal,⁵ D. Počanić,¹⁶ C. Polly,¹⁴ X. Qian,¹² D. Ries,¹³ R. Roehmlt,²
B. Schumm,¹ P. Schwendimann,² A. Seiden,¹ A. Sher,⁵ R. Shrock,¹¹ A. Soter,¹⁷ T. Sullivan,²² E. Swanson,²
V. Tischenko,¹² A. Tricoli,¹² B. Velghe,⁵ V. Wong,⁵ E. Worcester,¹² M. Worcester,¹² and C. Zhang¹²

¹University of California Santa Cruz ²University of Washington ³University of Chicago ⁴University of British Columbia
⁵TRIUMF ⁶Paul Scherrer Institute ⁷Tsinghua University ⁸Argonne National Laboratory ⁹University
of Kentucky ¹⁰Tecnológico de
Gutenberg University ¹¹
of Kentucky ¹²U

ABSTRACT:
experiment by p
of the $\pi E5$ beam

The PIONEER proposal
has been developing aspect
for in-person collaboration,

PSI Progress Report 2024

R-22-01.1 PIONEER Progress Report 2024

A. Adelmann,¹ W. Altmannhofer,² S. Ban,³ O. Besley,⁴ A. Bolotnikov,⁵ S. Braum,² T. Brunner,⁶
D. Bryman,^{7,8} Q. Buat,⁴ L. Caminada,¹ J. Carlton,⁹ S. Chen,¹⁰ M. Chiu,⁵ V. Cirigliano,⁴ S. Corrodi,¹¹
A. Crivellin,¹² S. Cuen-Rochin,¹³ J. Datta,¹⁴ B. Davis-Purrell,⁸ K. Dehmelt,¹⁴ A. Deshpande,^{14,15}
A. Di Canto,⁵ L. Doria,¹⁵ J. Dror,¹⁶ P. Fischer,¹⁷ S. Foster,⁹ K. Frahm,¹⁷ P. Garg,¹⁴ G. Giacomin,⁵
L. Gibbons,¹⁸ C. Glaser,¹⁹ D. Goodli,¹⁷ S. Gori,² T. Gorringer,⁹ C. Hamilton,³ S. Heinke,¹⁷
C. Hempel,⁸ D. Hertzog,⁴ S. Hochrein,¹⁷ M. Hoferichter,²⁰ S. Ito,²¹ T. Iwamoto,³ P. Kammel,⁴
E. Klemets,^{8,7} K. Labe,¹⁹ J. Labounty,⁴ U. Langenegger,¹ Y. Li,² C. Malbrunot,^{5,6} A. Matsushita,³
S. M. Mazza,² S. Mehrotra,¹⁴ S. Mihara,²² R. Mischke,⁵ A. Molnar,² T. Mori,² T. Numao,⁸ W. Ootani,³
J. Ott,² K. Pachal,⁵ D. Počanić,¹⁹ X. Qian,⁵ D. Ries,¹ R. Roehmlt,⁴ T. Rostomyan,¹ B. Schumm,²
P. Schwendimann,⁴ A. Seiden,² A. Sher,⁵ R. Shrock,¹⁴ A. Soter,¹⁷ T. Sullivan,²³ E. Swanson,⁴ V. Tischenko,⁵
A. Tricoli,⁵ T. Tsang,⁵ B. Velghe,⁵ V. Wong,⁸ M. Worcester,⁵ E. Worcester,⁵ C. Zhang,⁵ and Y. Zhang⁵
¹Paul Scherrer Institute ²University of California Santa Cruz ³The University of Tokyo ⁴University
of Washington ⁵Brookhaven National Laboratory ⁶McGill University ⁷University of British
Columbia ⁸TRIUMF ⁹University of Kentucky ¹⁰Tsinghua University ¹¹Argonne National
Laboratory ¹²University Zurich ¹³Tecnológico de Monterrey ¹⁴Stony Brook University ¹⁵Johannes
Gutenberg University ¹⁶University of Florida ¹⁷ETH Zurich ¹⁸Cornell University ¹⁹University
of Virginia ²⁰University of Bern ²¹Kitakyushu College ²²KEK ²³University of Victoria
(Date: January 22, 2024)

ABSTRACT: During the past year, the PIONEER collaboration has continued to develop the
experiment by performing simulations and detector design work. A simulation framework has been
developed allowing initial investigations of target (ATAR) configurations and performance of the
baseline LXe calorimeter. Developments of prototype LGAD detector elements and refurbishment
of the MEG large prototype detector are ongoing. In addition, initial investigations of the $\pi E5$ beam
line were analyzed and a beam test of the potential calorimeter alternative using LYSO crystals was
performed. The status of the work will be discussed.

CONTENTS

I. Introduction	2
II. Beam	3
III. Simulation	5

arXiv:2203.01981v2 [hep-ex] 8 Mar 2022

arXiv:2203.05505v1 [hep-ex] 10 Mar 2022

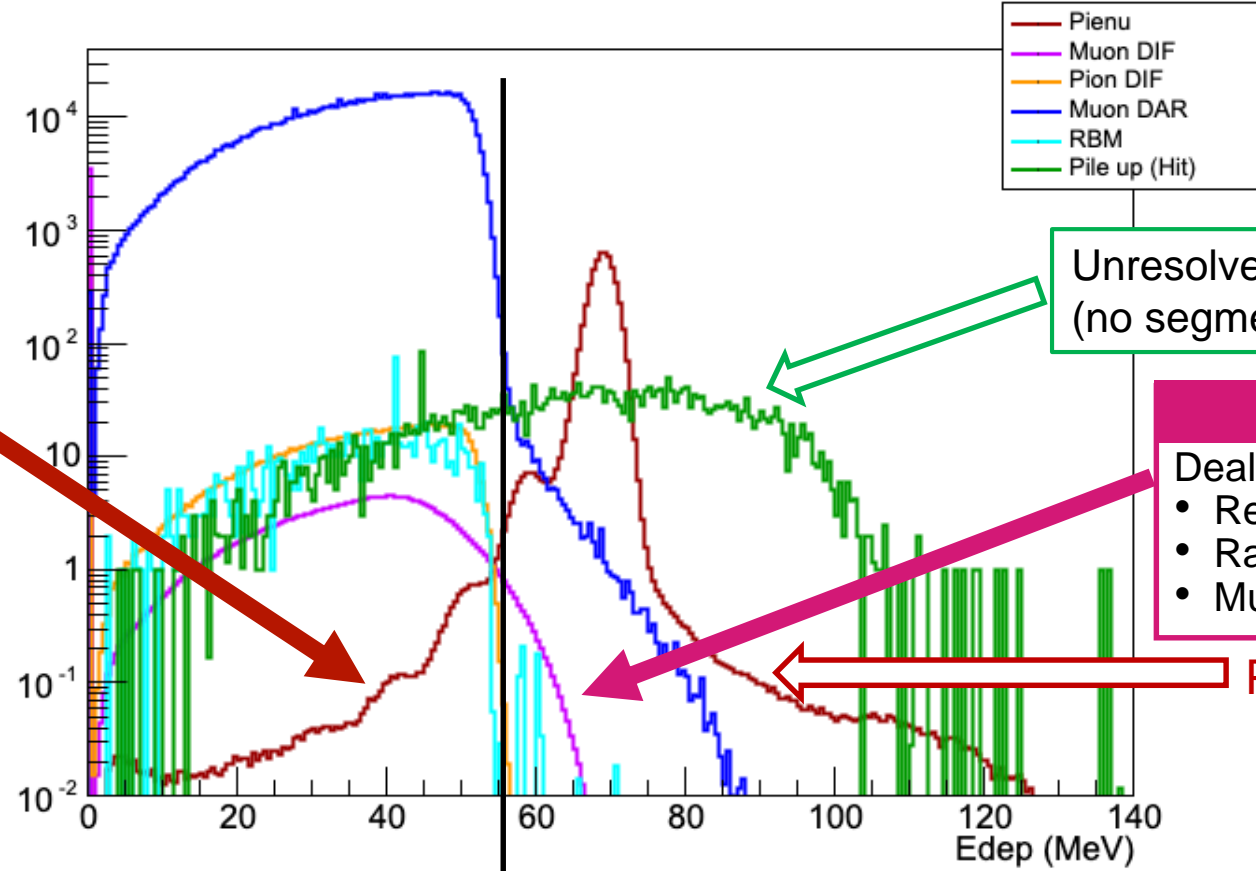
Many parallel, goal-driven efforts

- [Beam test](#) in piE5 (rates, spot size, purity)
- [CENPA RBS-1](#) LGAD strip tests; (RBS-2 next month)
- [PSI LYSO test](#) beam
- [CENPA p-Li](#) gamma run
- [Simulation Framework](#) !
 - Geometry (multiple versions) in GEANT; realistic
 - Multiple Physics Channels + Particle “Guns”
 - Event Mixing to simulate our high-rate environment and data products
 - A growing user group studying a wide variety of topics
- [Proto Analysis](#) efforts
 - Certain rare channel studies
 - Material studies
 - Calorimeter parametric optimization, KPPs, ...
- Short list of [hardware](#) efforts
 - MANY LGAD studies; (the most?) See the talks
 - LYSO extensive studies
 - LXe plans for prototype
 - Migration of Muon g-2 Digitizers and DAQ for successful test beam runs and lab bench systems
 - Lots more ...

To date, we have concentrated on the $R_{e/\mu}$ measurement ...
 and have fleshed out a lot of subtle issues ...

$$R_{e/\mu} = \frac{\pi \rightarrow e\nu(\gamma)}{\pi \rightarrow \mu\nu(\gamma)}$$

$$\sigma_{stat} = \sigma_{sys} = 0.7 \times 10^{-4}$$



Reveal the Tail

Deal With:

- Michel
- Muon DIF
- Pion DIF
- RBM

Unresolved Pileup (<10 ns)
 (no segmentation)

Reverse Tail

Deal With:

- Resolution Leakage (Michel)
- Radiative Decays
- Muon DIF

Pi-enu Radiative: $\pi \rightarrow e\nu\gamma$

Low Bin	High Bin
Deal With:	Deal With:
<ul style="list-style-type: none"> • Pileup • Time Fit • Acceptance 	<ul style="list-style-type: none"> • Pileup • Radiative decays • Acceptance

Strategy for 10^{-4} precision experiment

$$\sigma_{stat} = \sigma_{sys} = 0.7 \times 10^{-4}$$

(from Proposal days... where are we?)

- Analysis

$$R_{e/\mu} = \frac{\pi \rightarrow e \nu(\gamma)}{\pi \rightarrow \mu \nu(\gamma)}$$

- fit high/low energy e^+ time distributions

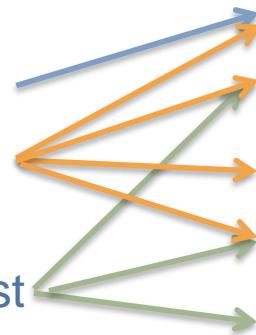
- $\pi - e$
- $\pi - \mu - e$
- background, pileup, etc

- Statistics

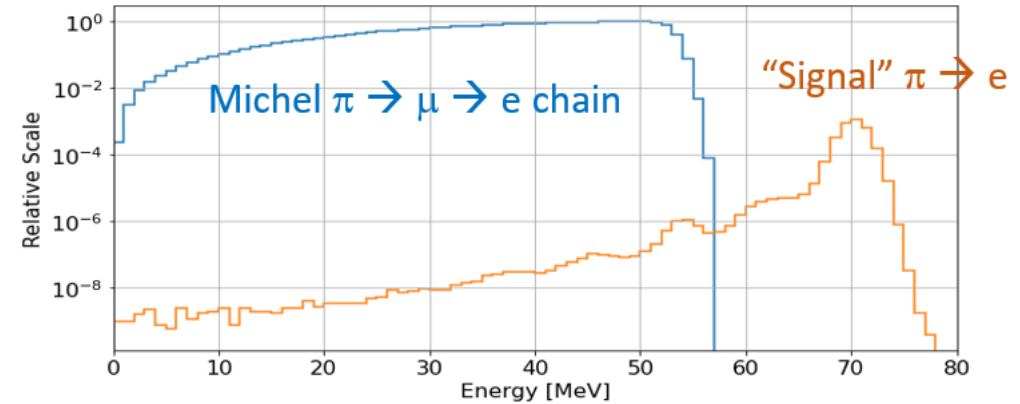
- 2×10^8 $\pi \rightarrow e \nu$ events
in 2-3 years with 3×10^5 π/s beam

- Systematic improvements

- intense, high quality π^+ beam
- active target with key new ideas and technology
- calorimeter: $\sim 3\pi$, $20X_0$, high res., fast



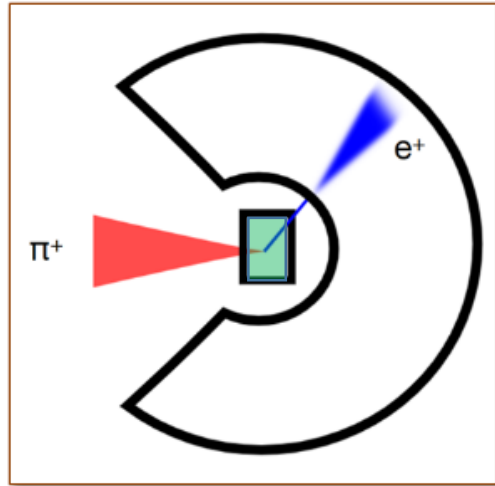
normalization & background



Error Source	PIENU 2015 PIONEER Estimate	
	%	%
Statistics	0.19	0.007
Tail Correction	0.12	<0.01
t_0 Correction	0.05	<0.01
Muon DIF	0.05	0.005
Parameter Fitting	0.05	<0.01
Selection Cuts	0.04	<0.01
Acceptance Correction	0.03	0.003
Total Uncertainty	0.24	≤ 0.01

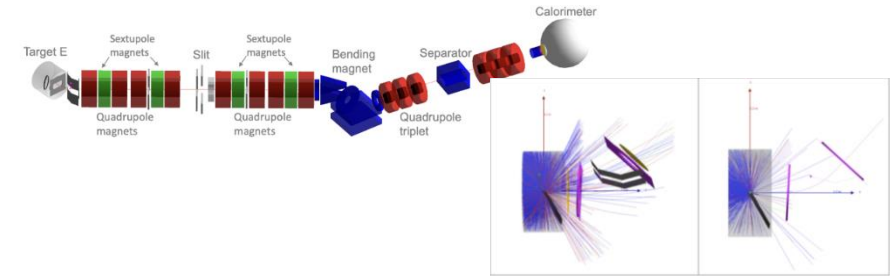
Working (mostly) well: Generic Experiment to Design

Design ↔ Simulation



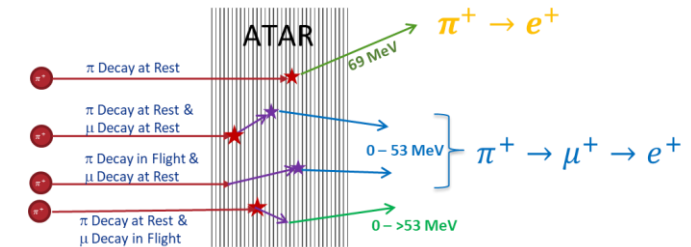
- Low-energy π E5 Pion Beam

- Upstream: Challenging; ML/PSI/Expertise needed
- Downstream: Can we design a compact double focus beamline extension for our simulation effort?



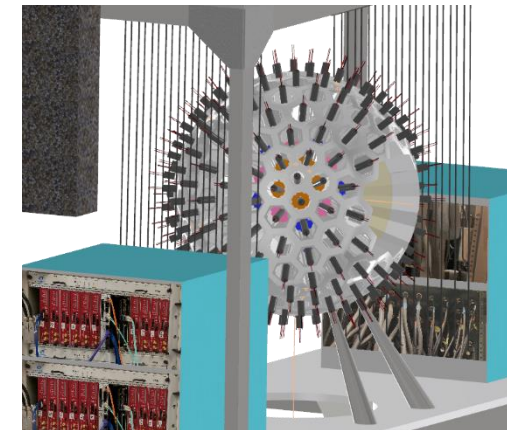
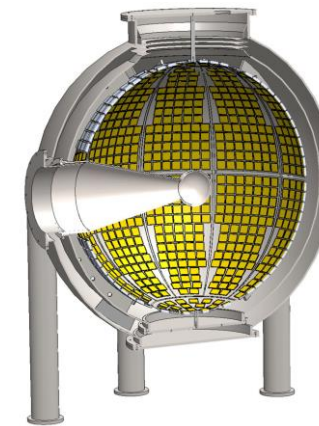
- ATAR: Active Stopping Target

- Detailed geometry in
- Need response function
- Need RECON effort, track finding



- LXe or LYXO Calorimeters

- Basic size, etc optimized vs cost
- LXe needs recon/pileup conclusion
- LYSO recon more mature (see talk by Omar)

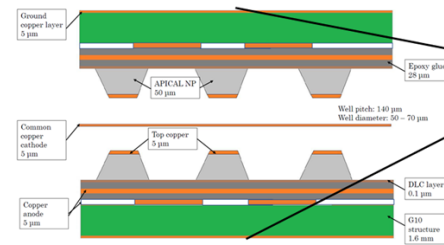
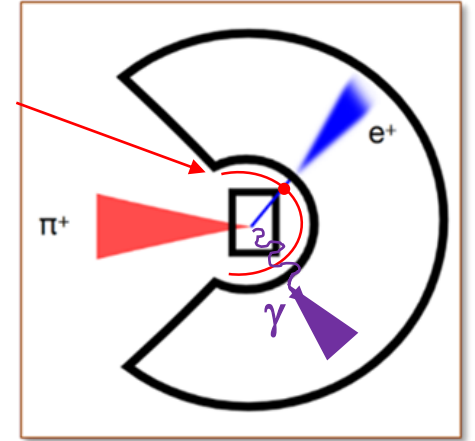


- Tracker, DTAR, Vetos ...

- Not much done yet on hardware side so Simulation is not accurate
- Effort needed on “what does each thing do”

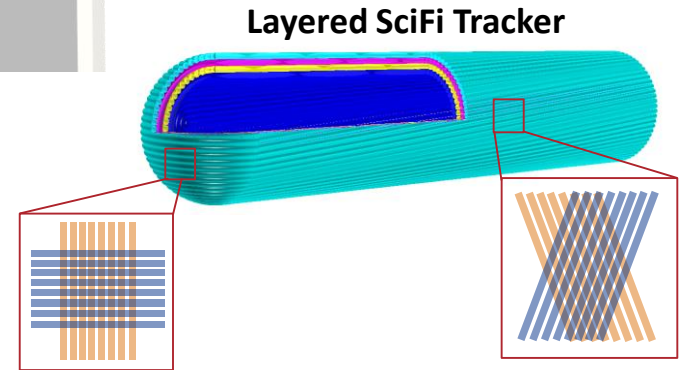
Some things to work on advancing this week

- Tracker region and use in events
- How these stack mechanically
- Where are the **Vetos** in this drawing?
- What is **DTAR** and who is building it?



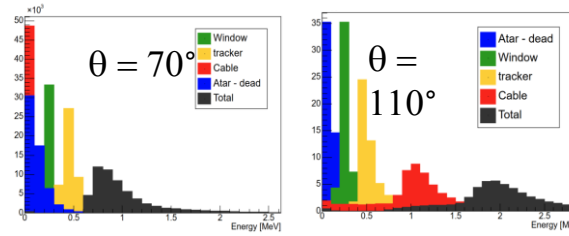
Micro-RWELL Technology

Preliminary idea for double layer tracker with common cathode

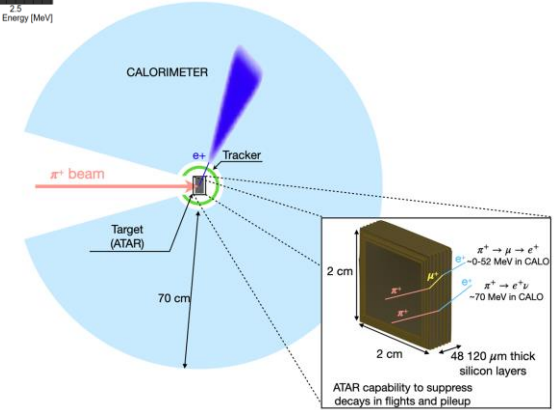


Some things to work on advancing this week

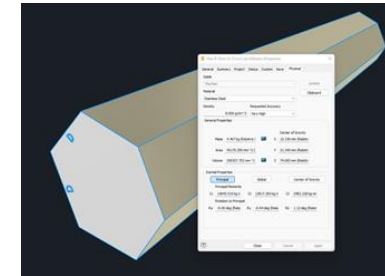
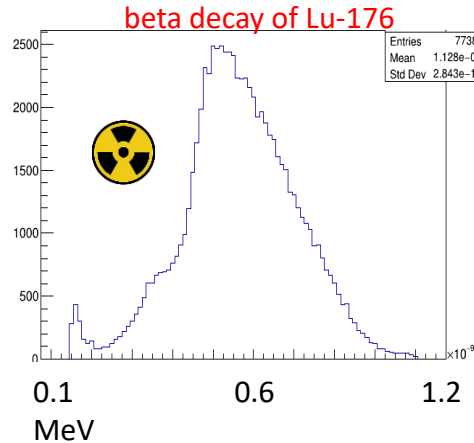
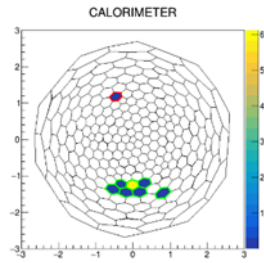
- Impact of Dead (and active) Materials on Resolution of Calorimeter
 - Very much depends on polar angle



- LXe challenges
 - Pileup and single event simulations
 - Safety engineering
 - Calibration plan?



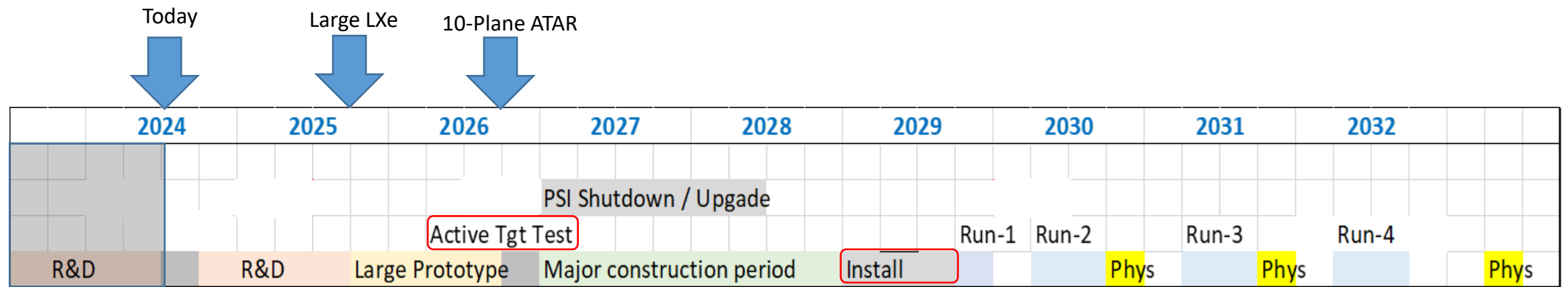
- LYSO challenges
 - Tapers
 - Impact of radioactivity
 - Boundaries and wrapping



- Cost estimates of Calorimeters

Goals and Challenges

- Timeline recall with updates by blanking off missed / changed issues
- To keep the project moving, we need to make use of Pre-shutdown time
 - Large LXe prototype
 - 10-Plane ATAR test
 - Ideally, combined ATAR + Calo + Electronics + DAQ + TRACKER test
- Must secure a funding path, with an “international” combined approach



Funding Profile	Operating grants and small supplements	Large purchases:
	Special R&D award for prototypes	Photosensors and electronics
Integral of green equals Project Request	R&D: Active Target, LXe Prototype and Electronics	Calibration system
	Elect / DAQ	All electronics
		Final install eng
		OPERATION SUPPORT OF GROUPS

Near-term Goals to discuss and set milestones

- Calendar for a CDR document and content
 - Solid simulations to support our precision goal on pienu channel
 - Approximate simulations to support whether we can or cannot do pibeta, and simulations to show exotics sensitivity with “our” detector; same for Rad Decay
- Hardware decisions must be made
 - Calorimeter choice is critical as it impacts almost everything in the plan
 - Segmented is very different than now; channel count, recon, pileup, etc
 - Because of the cost and the relatively extensive development / procurement time, sooner to know is better
 - Tracker choice
 - Defines how it will be used in Recon
 - LGAD technology and electronics
 - this is less critical now, unless the performance is worse than plan

(mostly) Missing in **in**action ...

- Can we actually do a next-gen **Pi-Beta Decay** experiment?
 - Implications for ATAR, for CALO, for DAQ, for Beam ...
 - So far, just some simple running in our Sim
 - Bradley studying PiBeta Systematics and will present on Friday.
- How sensitive is our **Exotics program** ... in our detector?
 - Wolfgang to remind us of physics and talk about new ALP generator
 - This project is open to someone to tackle and evaluate
- How well might we measure **Radiative pion/muon decays** and can we add to the literature on this?
 - Patrick has presented a bit on this and has more to talk about

Some Collaboration topics ...

- **Positives...**

- More young Pioneers! Grads, postdocs, ..
- Early Career Group, DEI, lots of positives here; many involved in PSI test beam
- Advertised to HIKE last week to recruit new groups ... not sure yet of their interest, but >55 attended the session for 1.75 hours. Slides on DocDb

- **Challenges...**

- FNAL can't participate; BNL effort reduced until funding can be established
 - US Agencies are in a tight spot for this and next year's funding
- A Request to the IB ... fill in the PersonPower Google Sheet so we can determine our approximate numbers of FTEs

Started a %Res Time *estimator* by group ..

NAME	Institute	Position	% 2024	% 2025	% 2026	PSI	OFF	% 2029	% 2030
						% 2027	% 2028		
David Hertzog	UW	Prof	80	80	50	50	50	?	?
Peter Kammel	UW	Prof	70	50	50				
Quentin Buat	UW	Prof	50	50					
Erik Swanson	UW	Scientist	25	tbd					
Patrick Schwendimann	UW	PDRA	100	100	tbd				
Josh LaBounty	UW	PDRA	50	80	100	tbd			
Omar Beesley	UW	Grad	100	100	100	tbd			
Jessie Yang	UW	Grad	100	100	100	100			
Ryan Roehnelt	UW	M.Eng	20	20	20				
David & Tim / Elec Shop	UW	Electronics	40	40	40				
Bruce Schumm	UCSC	Prof							
Simone Mazza	UCSC	Scientist							
Jenny Ott	UCSC	PDRA							
Adam Molnar	UCSC	Grad							
Tim Gorringe	UKy	Prof							
Sean Foster	UKy	PDRA							
Jack Carlton	UKy	Grad							
Lawrence Gibbons	CU	Prof	50	100	100	100			
David Tarazona	CU	PDRA	10	100	100				
Wren Osar	CU	Grad	0	100	100	100			
New Postdoc	CU	PDRA	0	0	50	100			
Douglas Bryman	UBC	Prof	50	50	50	50	50		
Chloe Malbrunot	TRIUMF	Res. Sci.	80	80	80	80	80		
Ben Davis-Purcell	TRIUMF	PDRA	100	100	100	100	100		
Emma Klemets	UBC	Grad	100	100	100	100	100		
Aleksey Sher	TRIUMF	P&S	25	25	25	25			
Bob Velghe	TRIUMF	RA	10	10	10				
TBA	TRIUMF	PDRA	10	10	10				
YOUR GROUP HERE									

Let's Meet !!

13:00	Introduction <i>Conference Room, CENPA</i>	<i>Quentin Buat</i> 13:00 - 13:10
	PIONEER Simulation: Overview, Status, and Opportunities for Improvement <i>Conference Room, CENPA</i>	<i>Patrick Schwendimann</i> 13:10 - 13:25
	ATAR resolution and dead material <i>Conference Room, CENPA</i>	<i>Jessie Yang</i> 13:25 - 13:45
	Pion Decay In Flight Suppression with ATAR <i>Conference Room, CENPA</i>	<i>Adam Molnar</i> 13:45 - 14:05
14:00	Acceptance Studies <i>Conference Room, CENPA</i>	<i>Yousen Zhang</i>  14:05 - 14:25
	Welcome Tea <i>Conference Room, CENPA</i>	14:25 - 14:55
15:00	Role of the Tracker in PIONEER and Possible Implementations <i>Conference Room, CENPA</i>	<i>Joshua LaBounty</i> 14:55 - 15:15
	Optical Photons and Pileup Treatment for the LXe Calorimeter <i>Conference Room, CENPA</i>	<i>Benjamin Davis-Purcell</i> 15:15 - 15:35
	Calorimeter Reconstruction with a Segmented LYSO Detector <i>Conference Room, CENPA</i>	<i>Omar Beesley</i> 15:35 - 15:55
16:00	Radiative Decays <i>Conference Room, CENPA</i>	<i>Patrick Schwendimann</i> 15:55 - 16:15
	LFU Analysis: Strategy, Sensitivity Study and Simulation Results <i>Conference Room, CENPA</i>	<i>Quentin Buat</i> 16:15 - 16:30
	The Pion Beam for PIONEER <i>Conference Room, CENPA</i>	<i>Stefan Hochrein</i>  16:30 - 17:00
17:00	An Introduction to ATAR <i>Conference Room, CENPA</i>	<i>Adam Molnar</i> 17:00 - 17:30
	DAQ and Electronics <i>Conference Room, CENPA</i>	<i>John Carlton</i>  17:30 - 18:00
	PI Discussion <i>Room 182 (Dave's Office), CENPA</i> 16:30 - 18:00	
	<ul style="list-style-type: none"> • CDR • \$\$ • Collab • AOB 	

18:00 6:30 EC dinner @ ???

6:30 PI dinner @ PIATTI