

Program Schedule

All times are in Eastern Daylight time (EDT)

Time	Monday (28)	Tuesday	Wednesday	Thursday	Friday
9:00	Intro	Ramsey-Musolf	Discussion	Skripnikov	Prasanna
9:35	Flambaum	Dobaczewski	Isaev	Gaul	Karthein
10:10	Vincenzo	Engel	Borschevsky	Kotochigova	Inouye
10:45	Jordy	Butler	Fleig	Field	Stadnik
11:20	Break				
11:35	Reece	Nazarewicz	Demille	Krems	Vutha
12:10	Jaideep	Budker	Breier	Safronova	Gabrielse
	Lunch				
2:00	Jayich	Haxton	Rothe	Arvanitaki	Panel discussion
2:35	Caldwell	Holt	Wilkins	Hamilton	Panel discussion
3:10	Break				
3:25	Tarbutt	Navratil	Udrescu	Von der Wense	Panel discussion
4:00	Doyle	Miyagi	Gottberg	Zhang	Panel discussion
4:35	Hutzler/Augenbraun	Discussions	Severin	Discussions	Summary talk

Topics:

- **Particle Physics**
- **Production of molecules at radioactive beam facilities**
- **Current/new techniques**
- **Molecular theory**
- **Nuclear theory**
- **Other opportunities**

Discussions:

- Challenges for AMO precision experiments at accelerator facilities.
- Strategy to identify physics cases to be pursued first.
- Required lab infrastructure, especially plans for a precision laboratories at FRIB, TRIUMF, CERN, .
- Key instrumentation, challenges and required developments. Molecular formation at RIB facilities.
- Required theoretical developments in AMO, nuclear and particle physics.
- 'Bridging the gaps': how to efficiently exchange ideas between the many different fields involved in the projects of radioactive molecules.

Panel discussions:

Panel 1: science impacts

Panel 2: Theoretical developments

Panel 3: Experimental challenges and facilities

Panel 4: Community Building.

Panel 1

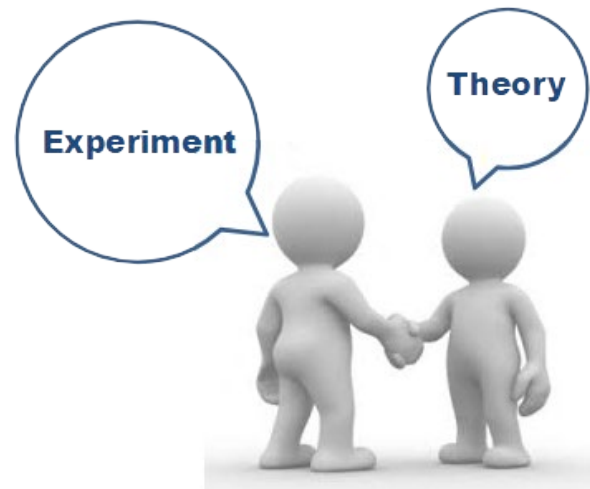
David Demille

Ronald F Garcia Ruiz (chair)

Andrew Jayich

Mike Tarbutt

- What are the science impacts?
 - Fundamental symmetries
 - Nuclear structure
 - Quantum chemistry
 - Astrophysics
 - ...
- What are the first experiments we should pursue?
 - P violation: Nuclei of particular interest?
 - T violation: Nuclei of particular interest?
 - ...
- What should be our long term strategy?



Particle & Nuclear & Atomic & Molecular

Panel 2

Robert Berger (chair)

John Behr

Vincenzo Cirigliano

Witek Nazarewicz

Theory related topics and questions

- What are the main challenges for theory?
 - Which input from theory do experimentalists desperately need?
 - Which input from experiment do theoreticians desperately need?
 - Accuracy, efficiency, error bars in theoretical estimates
 - Multi-scale descriptions
 - Methods of potential use in other fields
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Panel 3

Alexander Breier
Gerald Gwinner
Stephan Malbrunot (chair)
Ryan Ringle
Shane Wilkins

Challenges

AMO physics

RIB science

stable	Time	$T_{1/2}$: ms - s - min - days - ...
' ∞ '	Intensity	yields: 1/s to '>10 ⁹ /s'
'whatever it takes'	Purity	(isobaric) contamination: 1:0-10 ⁶ or more
μK - mK - K cold beams or tapped	Temperature	ISOL target ≈ 2000 °C transport beam: 10s of keV
	Accelerator Environment	RIB availability/schedule EM noise
sensitive, high precision devices	Radiation Safety	limits access to core of apparatus

Panel 4

How can we build a sustainable community?

- Panel members:
 - **Tom Blum**
 - **Anastasia Borschevsky**
 - **Skyler Degenkolb**
 - **Jason Holt**
 - **Nick Hutzler (chair)**
 - **Jaideep Singh**
- How can we all stay connected?
- How can we build and expand our community?
- How can we grow interest and broader community support?
 - Example: whitepapers/workshops for SnowMass2021, NSAC Long Range Plan, similar non-US efforts, etc.